

# **West Bengal News Articles**

*from January 2020 to September 2022*



*From South Asia News Alerts*

<https://www.icsf.net/news/#southasiannewsalert>

*Compilation by ICSF Trust*



**West Bengal: Treading on troubled waters: Exploring livelihood vulnerabilities among coastal communities in the Indian part of the Sundarban Delta**

<https://sprf.in/photo-archive/treading-on-troubled-waters/>

"The Sundarbans is one of the largest mangrove concentrations in the world. It is characterised by a rich estuarine and coastal marine ecosystem, awarding the delta with a wide range of natural forest and aquatic resources. The inhabitants of Sundarbans have historically depended on natural resources for their daily subsistence and to earn their livelihood. A large population is involved in fishing, prawn and honey collection, wood cutting and boat making, and allied activities. Agriculture has also been common in the region since the colonial period, when large tracts of mangrove forests were converted into paddy fields.

However, at present, a complex interlinks age of social, economic, political, and ecological factors threaten the livelihood of coastal communities in the Sundarbans. The inhabitants of the Sundarbans are exposed to a wide range of climate change-induced disasters such as cyclones, storms, coastal erosion, rise in sea level, and flooding. With the frequent onslaught of such extreme weather conditions, saline water from the open sea encroaches the agricultural lands, ponds, and freshwater resources, breaching the embankments. Extreme weather events such as cyclones and storms result in economic losses in agricultural production and also cause severe damage to infrastructure and property built with and on mud. This photo essay explores the vulnerabilities of the livelihood of coastal communities in the Sundarbans in the wake of climate change and the frequent fallout of extreme weather conditions.

I observed and interacted with fisher folk in the small village of Kishoremohanpur in Kultali on the banks of the Matla River. Nirapodo Mandal, a fisherman in the village, told me about the fishing period's cycle and the fisherfolk's hardships. The peak season for fishing activities starts from July to late September. Fishermen venture into the buffer zone of the forest area with their motor boats or 'bhotbhoti' for 5-8 days.

Based on the rise and fall of tides (high tide and low tide) during the day, the lunar cycle determines fishing activities. Fishers complete at least two monthly trips. According to the fishers of Kishoremohanpur, each trip costs approximately Rs 4,000, including the cost of 5 litres of diesel, ice blocks to store the fish, food supplies (rice, lentils, oil, salt, sugar, and spices), a stove, and a cylinder. After the catch, fishers usually take the fish to the nearest 'arot', a large cold storage unit. The fishers have no bargaining power and are often offered a price below the prevailing market price for their catch by well-off 'arotdars' who own the cold storage units or by the middlemen who take the fish to the market. Sometimes, if the catch is not significant, some fishers sell directly to local households.

The rising cost of commodities and low-profit margins have forced many small fishers to drop

out of fishing activity. The financial instability of fishing and the constant risk of the fallout of extreme weather events have caused a significant percentage of the fishing population in the village of Kishoremohanpur to migrate. They settle in nearby towns and cities, sometimes outside West Bengal. They usually take up manual labour in construction sites and brick kilns or fishing in Southern states like Andhra Pradesh, Kerala, and Tamil Nadu. Badal Patra, a fisherman for the last 30 years, said,

“Earlier, we used to catch enough fish to earn a profit. Nowadays, there are not enough fish in the nearby jungles; you have to go far. The price of diesel keeps on increasing, and everything costs more than what it used to be. We are poor people with basic subsistence. How can we maintain our boats like this? I had to sell my boat and rely on my son who works in Kolkata. There is no end to the woes of people here.”

Due to stark poverty, women and children often join male members to catch fish in the forest to contribute to household earnings.

Apart from financial stability, the decreasing number of fish in rivers is one of the biggest concerns. According to them, anthropogenic factors like the intensification of trawling activity and commercial fishing were major factors in depleting catch. A group of 15-20 fishermen go on a month-long fishing trip in trawlers during monsoon to catch large quantities of fish. Their trawl nets have a small mesh that traps even the smallest fish and aquatic species. Dragging big trawler nets with smaller mesh through the ocean bottom to chase tiger prawns results in an immature catch, which further destroys the bottom habitat of prawns, other shellfishes, marine algae, seaweeds, and plankton. Additionally, the baby fishes trapped in the trawler nets do not survive and are dumped back in the ocean.

“Trawling party is finishing all the fish available in the river. The mesh of their nets is so small that it traps even the smallest fishes. Once they are trapped, they are dead and dumped back in the rivers and sea. Our nets have bigger mesh which does not catch small fishes,”

Said Gouranga Mondal, a fisherman in Kishoremohanpur.

Fishers are compelled to trawl despite its fatal outcomes to secure their livelihood instead of venturing to the forests with motorboats. The fishers do not own the trawlers. Trawler owners employ them on contract. If the catch is subpar, fishers are frequently exploited. The decrease in fish forces small fishers to venture deep into the forest with their boats. Occasionally, they mistakenly enter the core area under the Sundarban Tiger Reserve [STR], where fishing activities are prohibited. “The risk is extremely high in our work, and on top of that, if we are caught by the ‘Forest babus’ [Forest officials], we have to pay hefty fines or give away part of our catch to them. And if one does not have the Boat License Card [BLC], their boat will be taken away right

there,” added Gouranga Mandal. With many fishers unaware of the rules, they run into various issues about fishing permits with the state’s Forest Department. The state follows a fortress conservation model in protecting the large mangrove base, with the Royal Bengal Tiger getting the highest protection. The fortress conservation model is a biodiversity conservation model that locates any kind of human intervention as a threat to biodiversity. It is based on the belief that biodiversity can be best preserved by creating protected areas to enable wildlife and marine population growth.

Although the state has invested in infrastructure to prevent accidents, the villagers and fishermen fall prey to tigers while collecting fish, crabs, or honey in the forest. A common saying in the villages is that “if a villager dies in a tiger attack, it will not make it to the news, but if a tiger dies, everyone in the country will get to know about it.” Simultaneously, prolonged depletion of mangrove forest cover due to climate-induced variability has exacerbated human-tiger conflict in the region. According to the villagers of Kishoremohanpur, tiger invasion has become more frequent. A study assessing the change in mangrove extent from 2000 to 2012 found that about 110 km<sup>2</sup> of mangrove cover has disappeared within the reserve forest due to soil erosion, a rise in sea level, and an onslaught of extreme weather events. “Nowadays, storms have become frequent. If the forest cover starts to deplete, the tigers will automatically come close to the villages in search of food,” added another fisher.

The coastal communities are in a precarious position vis-a-vis their socio-economic condition and relation with the biophysical environment, which directly threaten their survival and affect their well-being. Low income from agricultural activities, fishing, and prawn collection restricts communities from investing in proper housing infrastructure for safety during extreme weather events. Since industrial development opportunities are low in the fragile ecological region, along with low levels of education and limited skill development, a significant population of the islands have migrated outside the state of West Bengal in search of work in the informal sector. Frequent storms and cyclones have severely damaged households and property, inflating economic distress and escalating migration.

Hence, there is a dire need to create resilient livelihoods that build upon people’s adaptive capacities in ecologically fragile regions vulnerable to climate-induced disasters. The consequent development framework should go beyond an ecocentric approach central to the region’s biodiversity. It must ensure social justice and dignified life for the communities in the Sundarbans."

**West Bengal: Climate change, salinity and menstrual health problems: Sundarbans women battle triple whammy**

<https://www.thehindu.com/sci-tech/energy-and-environment/climate-change-salinity-and-menstrual-health-problems-sundarbans-women-battle-triple-whammy/article65905757.ece>

"Climate change has turned the waters saline, making agriculture unviable and forcing them to turn to fishing. For women in the marshlands of Sundarbans, this switch is not just about livelihoods but also coping with the debilitating health impact on their lives. Caught in a vicious trap that means spending hours waist-deep in the very waters that no longer nurture their fields, the women face a battery of menstrual, urinary tract and other infections. "With agriculture becoming unviable due to the increase in salinity of the water because of sea level rise, more and more women are becoming dependent on fishing. This means their exposure to saline water is also increasing," Nihar Ranjan Raptan, director of the NGO Goranbose Gram Bikash Kendra (GGBK) who works in the Sundarbans, told PTI.

Irregular menstrual cycles, vaginal infections, recurring UTI and miscarriages are common amongst the women in the Sundarbans, he said. The ecologically fragile Sundarbans region, which holds a vast mangrove forest, falls in West Bengal's South 24 Parganas region and is said to be one of the worst affected regions in India due to climate change. The area has been battered by frequent cyclones, more than any other place in the country. According to Revati Mondal, who has been working in the Sundarbans' Goran Bose village for more than two decades, the salinity of the water has been increasing steadily – and the health of the women deteriorating.

With frequent storms over the years, the salinity of water of most of the rivers and ponds has increased in almost all areas of the Sundarbans, the ASHA worker said. "I visit about 25 homes every day and most of these homes have women who have one or the other problems related to menstruation," Mondal told PTI. ""The husbands of most of these women are migrant workers and based somewhere else. The women meet their day-to-day expenses by selling prawns and fish they catch in the river for which they have remain in waist-deep water for four-six hours per day which is the main cause of the health hazard they are facing."

Soma\* from Hogalduri village in South 24 Parganas, is living through the misery. The 31-year-old has got urinary tract infection at least four times in the last one year, and said she goes every day to fish and makes her living selling prawns and small fish she manages to catch. This means standing in waist-deep water every day for about four to six hours.

"I am separated from my husband and have to fend for myself and my two children. Earlier I was ashamed to discuss my menstrual problems with ASHA workers or doctors but after the situation became unbearable I had no option left," she said. Mondal, who has been witness to 20 years of degradation of the environment and of many lives, said hiding menstrual issues due to the stigma associated with it makes the situation worse. "In so many cases, these women shy away from telling their problems to doctors. They come to even me only when it turns severe and require much more intensive treatment. Some women have also reported miscarriages due to repeated infections," she said.

Like Soma\*, Faiza\* is also suffering with multiple health issues. The 25-year-old from Basanti village said even freshwater ponds near her home has turned salty due to frequent cyclones. "These ponds are our primary source of water now. In the absence of fresh water, we use water from these ponds for washing and cleaning. Even the cloth we use during our period is washed in this water. This leads to all kinds of infections," she said.

Besides vaginal problems, women in the area are also battling skin diseases such as eczema and infected sores due to prolonged exposure to saline water. Piyali\*, only 23, said the past 15 years or so have been very difficult. "I have been fishing since I was eight or nine years old. I would help my mother in fishing. When I got married, I would go for fishing to support my family. Since 2008, frequent cyclones have been hitting us. And this has made things worse.

"It's not just frequent infections. I have been unable to conceive and doctors attribute this to my poor reproductive health," said the woman from Goran Bose. Recurrent UTIs can have both direct and indirect impact on menstrual health, explained Dr Vinieta Diwakar, consultant, obstetrics and gynaecology, Manipal Hospital, Ghaziabad. "Directly the infection of urine will contaminate the vaginal flora, the organisms present in the vagina, and it will be altered, and it will lead to vaginal infection which in turn affects ovarian health..." Diwakar told PTI.

Recurrent UTIs, she said, may lead to miscarriage or even preterm labour. Covid has exacerbated an already bad situation, said GGBK's Raptan. "The access to hospitals and doctors was severely impacted during COVID-19 and it worsened the existing health conditions of women here. They continued to go into water for livelihood and for many their infections remained untreated and worsened," Raptan said.

With men migrating in the search of better jobs, women of the area are fighting the climate change battle alone, he added. Tubewells in the area have also become contaminated in the area due to storms and frequent heavy rains. The low-lying villages get inundated in heavy rains and tubewells get submerged. When the waters recede, impurities enter the tubewells causing other water-related diseases too, he said. According to census 2011, the total population of South 24 Parganas is 8.16 million, including 3.98 million women.

The Sunderbans has been hit by four major cyclones in the last three years -- Fani (2019) , Bulbul (2019), Amphan (2020) and Yaas (2021). These cyclones killed nearly 250 people and caused a loss of nearly USD 20 billion. According to IMD, the return period of cyclonic storms in South 24 Parganas district is 1.67 years on a scale of 1.5 to 60 years. Shorter return periods indicate more frequent cyclones. And more problems for those who live in the marshlands of Sunderbans."

## **West Bengal: Fishermen seek balance between livelihood concerns and protection of ecology**

<https://theprint.in/india/fishermen-seek-balance-between-livelihood-concerns-and-protection-of-ecology/1121395/>

"A representative body of fishermen in West Bengal has underscored the need for striking a balance between livelihoods concerns of those belonging to the sector and protecting the ecology of the coastal region in the updated coastal zone management plan of the state, its official said on Thursday. The Purba Medinipur Matsyajibi Forum (PMMF) Thursday urged the administration to take steps to ensure larger attendance of those in the sector at the public hearings on updated coastal zone management plan.

"We call for wider representation of the fishermen community and other coastal inhabitants in Purba Medinipur in any exercise to finalise the draft CRZ. They are the bhumi putras (sons of the soil)," President of Dakshin Banga Matsyajibi Forum (DBMF) Debasis Shyamal told PTI. DBMF is the state chapter of the National Platform for Small Scale Fish Workers, comprising fishermen of different coastal states.

A public hearing to finalise the draft Coastal Regional Zone (CRZ) notification, 2019 was held at Nimtouri in Purba Medinipur district on September 6 after the PMMF complained that it was left out of the earlier one held on August 22 and that the views of its members on striking a balance between livelihood of fishermen and at the same time maintaining the ecology of the coastal region were not heard.

The PMMF suggested that the district authorities make proper public announcement for all coastal villages and fish landing centers to ensure wide attendance of the local fishing and other coastal communities in such meetings in the future. It also sought sufficient time for people to access the maps and plan translated in the vernacular and respond as per provisions of the CRZ notification and Environment Protection Act, 1986, PMMF sources said.

A senior environment department official, who participated in the hearing on virtual mode from Kolkata, said the suggestions will be incorporated in the exercise to prepare the draft. "There will be more such hearings in the coming days," he added.

## **West Bengal: 'Left out' of coastal zone plan making process, WB fishermen's body gets fresh govt letter**

<https://theprint.in/india/left-out-of-coastal-zone-plan-making-process-wb-fishermens-body-gets-fresh-govt-letter/1111945/>

"A forum of fishermen in West Bengal's Purba Medinipur district has received a fresh letter from the state's environment department for a meeting after it claimed its members were being left out of the process to formulate an updated coastal zone management plan.

Fishermen were not informed of the date of the public hearing on the matter properly, though the problems of the coastal region could not be addressed without their presence, President of Dakshin Banga Matsyajibi Forum (DMF) Debasis Shyamal told PTI on Thursday. "The environment department did not intimate our organisation's Purba Medinipur unit about the public hearing on the coastal management plan, which took place on August 22. It is tantamount to leaving out one of the important stakeholders of the coastal belt," Shyamal said.

Striking a balance between addressing livelihood concerns of the fishermen and protecting the ecology of the coastal region is needed, and the presence of the members of the Purba Medinipur Matsyajibi Forum (PMMF) was needed in that meeting, Shyamal said. The PMMF is under the DMF which is the state chapter of the National Platform for Small Scale Fishworkers, comprising fishermen of different coastal states.

Shyamal said the PMMF has drawn the attention of the state's department of environment and the West Bengal Pollution Control Board voicing its opposition to any attempt to not accommodate the views of the fishermen. "We received a letter from the department of environment last night, promising to hold another hearing within a week. Our members were requested to attend it," he said.

A top environment department official said that though many local fishermen had been present at the August 22 meeting, a fresh letter for a virtual hearing has been sent to the Purba Medinipur Matsyajibi Forum. Senior officials will interact with the forum members and record their views, the official said.

Shyamal said attending the public hearing is important to address such anomalies as improper earmarking of fish landing centres in the district in the Coastal Regulation Zone (CRZ) Notification of 2011 and 2019. He said the DMF has 16,000 fishermen under its fold in the coastal districts of the state, including Purba Medinipur.

In a letter to the Purba Medinipur district magistrate, the forum said, "The Purba Medinipur Matsyajibi Forum is a body of small-time fishermen of the district, whose livelihood protection is central to the Coastal Regulation Zone, 2019 notification and the Coastal Zone Management Plans formulated under it." The PMMF said it has objections to the manner in which the fishermen were invited to provide their suggestions on the draft of the updated Coastal Zone

Management Plan in the district.

A notice about the invitation was posted on the environment department's website and in some Bengali dailies but not local newspapers, Shyamal claimed, adding that it was not considered whether the fishermen of the district would be able to access those notices. "We do not think it was accidental. There is a long-term plan to evict the fishermen living in the belt for centuries to carry out so-called beautification and development projects with the help of corporates.

"We warn against any such plan as that would harm the eco-system and lead to coastal destruction instead of protecting the coastal belt and marine and coastal eco-system," he said. The environment department official said it would be wrong to presume that the department left out the fishermen's community.

"We had followed all well-established norms, like publishing the notice for hearing in more than one large circulated Bengali daily apart from uploading the same on the website. If the forum members could not access the notice or were in the dark, it is unfortunate but we are not responsible," he said. A comprehensive coastal zone management plan addressing all issues is needed and it is not possible by excluding any stakeholder, the senior official said.

### **West Bengal: Self-reliant in Rohu-Katla farming following the 'Moyna Model'**

<https://www.getbengal.com/details/bengal-turns-self-reliant-in-rohu-katla-farming-following-the-moyna-model>

"Here is some great news for the fish lovers of Bengal. The big Rohu and Katla fishes that were in high demand and regularly had to be imported from states like Andhra Pradesh are now being grown in large numbers in West Bengal itself. As a result the demand for fishes from Andhra Pradesh has dropped drastically and various districts of West Bengal are turning self-reliant in supplying their own Rohu and Katla and meeting the market demands. But what changed suddenly?

Almost 5 years ago Hon'ble Chief Minister Mamata Banerjee had directed at an official meeting to try out the 'Moyna Model' of fishing in various districts. This model was a huge success in the Moyna block of Midnapore and the traditional farmers had turned to fish farmers bringing in huge profits with a good yield. Several patches of farmlands over the years due to constant flooding had turned into low lying fallow lands with standing water in them. Since crops could no more be grown in such fields, the farmers of Moyna had decided to start bheris in those flooded lowlands and grow big fishes like Rohu and Katla. The endeavour had led to a success, so much so that other parts of Bengal started following the Moyna Model and today the results are phenomenal.

Fisheries Department data shows while 80 thousand metric ton fishes were brought from Andhra Pradesh even a few years ago, today that import has come down to just 40 thousand metric ton as West Bengal gets its Rui, Katla, Mrigel and other big fishes from its own bheris. More than 1 lakh farmers are now using this Moyna Model in their fallow lands. As fishery scientist Dr Amal Dhar mentions: ‘This model ensures that the fallow lands which are left unsuitable for cultivation are put to good use, it also meets largely the growing demand for fishes in the state. Fishes are a very good source of protein especially during COVID times compared to animal protein and bigger fishes are important for any Bengali palate.’

In the epicentre Moyna block, almost 6 ton of fish is cultivated per hectare of land annually and they are sent to various parts of the state as well as exported to other states of India like Bihar, Jharkhand and Chattisgarh. Each bheri covers an area of 200 to 450 acres. The farmers of Moyna have made small embankments surrounding their lands so that during future floods, the water cannot enter and disrupt the fishes. Such initiatives are indeed showing results and the people of the state are getting fresh feed on their plates instead of the ‘chalani maachh’ from other states that need weeks to come here. The price is also lower than those that come from other states as the cost of transport has skyrocketed over the years, causing a burning hole in the consumer pockets. As per data in the fisheries department, in 2019-20 around 17.82 lakh metric ton of fishes were produced that went up to 18.43 lakh metric ton in 2021-22. That is a big jump indeed!"

**West Bengal: How tourism has taken a toll on the livelihoods of fisherfolk in a town in coastal**

<https://scroll.in/article/1029858/tourism-takes-a-toll-on-fishing-livelihoods-in-coastal-town-in-west-bengal>

"As a child, Bablu Shah of Ratanpur village near the coastal tourist town of New Digha in West Bengal would spend his time strolling in the agricultural fields with his friends and return home to a sumptuous meal of fish cooked from the fresh catch his father – a fisherman – would bring. Three decades later, his children are living a completely different experience. The agricultural fields have been replaced by concrete hotels and tourism has replaced fishing as the major livelihood source in the area. “My family pursued fishing as a livelihood for generations,” he said. “During my father’s time, there used to be 25 fishing boats in our village, now there are hardly four to five boats.” The story of Bablu Shah, now 41-years-old, resonates with most

fisherfolk living in the area. With the rise in tourism activities in the last few decades, coupled with factors like frequent natural disasters, the community is looking beyond its traditional income sources to sustain themselves.

Over the past decade, Digha has emerged as a tourist hotspot for a weekend getaway. In New Digha, for instance, tourism has replaced fishing as the primary source of livelihood. A 2015 study in the town highlights that the locals are getting economic benefits from tourism-related activities such as hospitality sector, transport, local eateries and souvenir shops. Some have been migrated out. “The fishing community had a double source of income,” said Shah, who runs an eatery shack on the New Digha beach. “After fishing, a small-scale fisherman usually looks for other options like working at a local store for additional income. Now, the dependence is mostly on tourism-related activities. Though the income is stable, things had drastically changed during the Covid-19 pandemic when there was complete lockdown.” The encouraging tourist footfall has also prompted the state to announce a slew of developmental projects along the coast.

One of the pet projects of the state government is the Digha-Mandarmoni marine drive, which is expected to connect the four major sea beaches in the area – Digha, Tajpur, Shankarpur and Mandarmoni and give a major boost to the tourism sector in the region. However, reports allege that the land for the project was forcibly acquired from the fisherfolk, threatening their livelihood.

Besides, the development activities along the coast have also added environmental concerns. A 2020 study which analysed the erosion and accretion trends confirmed that “urbanisation due to tourism leads to immense pressure on this coastal area more than other coastal processes”.

In old Digha, approximately 30 km from the tourist site of the developed new town, lies a fishing auction site, one of the oldest in eastern India. Alok Mondal, who participates in the auction for a private entity, explains the entire process. “The auction site becomes lively from 3.30 in the morning,” he said. “The fishing trawlers arrive at the harbour and the catch is sorted. The price is set as per the size and weight of the catch. The bidding starts and can continue till 11 in the morning, or late in the afternoon till the trawlers keep coming in. Since the market starts early, the trawlers coming early fetch higher prices.”

Despite a bustling market, the fishing industry in Digha is facing the impact of climate change. The coast was battered by two major cyclonic storms Amphan in 2020 and Yaas in 2021. Climate change is making those storms far more frequent and devastating. “Frequent natural disasters have led to reduced number of fishing days and hence, less catch,” said Debasis Shyamal, National Council Member, National Platform for Small Scale Fish Workers. “Apart

from the regular fishing ban, we are not able to enter the sea for as many as 50 days due to erratic weather patterns. The small-scale and traditional fishermen are among the worst affected.” The erratic weather conditions especially the unseasonal rainfall pattern, has also hit the dry fish industry, which is not getting the required number of consecutive sunlit days for drying the fish.

Several studies in the past have highlighted the positive role of local communities in protection of ecology. Experts in the field have also suggested a similar collaboration in the region. The fisherfolk, on the other hand, have time and again pitched for government incentives to better their socio-economic status. Last month, Dakshinbanga Matsyajibi Forum, a registered body of small scale fishworkers, wrote a letter to the administration demanding temporary hut structures along the beach for the fishermen to rest.

The letter also highlighted how the fishing boats were getting damaged while taking in and bringing it out of the sea, due to the boulders placed along the shores, and demanded sloping a patch for easy movement of the boats. “India has a vast coastline which makes the fishing industry a major source of livelihood for millions of people,” said Shyamal, who is also a part of the Forum. “When we are under existential crisis, it is the duty of the government to look into our problems and address them. We can’t be ignored.”

### **West Bengal: Depression ban on sea fishing jacks up fish prices in Kolkata markets**

<https://timesofindia.indiatimes.com/city/kolkata/depression-ban-on-sea-fishing-jacks-up-fish-prices-in-kolkata-markets/articleshow/93488342.cms>

"The deep depression in the Bay of Bengal has cast its shadow over the city's fish market. With curbs on deep sea and coastal fishing due to the inclement weather, stocks of fish in wholesale markets have dried up, leading to spiralling prices in retail markets. The supply of local fish from tanks and ponds is too less to match the demand. Following the Indian Meteorological Department (IMD) alert, the state administration swung into action to issue prohibition against coastal and deep-sea fishing. All fishermen, who were out in the sea, came back by August 7. As the prohibition entered the third day, city markets have dried up Hilsa, which generally determines the prices of other varieties. The demand-supply gap has pushed up the prices of common varieties like rohu, bekti, tyangra, mourola and tilapia. The prices of chalani fish

(mainly rohu and katla from Andhra Pradesh) also rose sharply.

"Fish prices are so high that we had to shift to chicken and egg. We hope the prices will swing back to normal once the bad weather days are over," said Amiya Basu, an insurance agent. Even though the supply of local fish is normal, higher demands are inhibiting the necessary cooling off of their prices," said Amar Das, a fish vendor at Lake Market.

South Bengal is to some extent highly dependent on sea-fish. "More than 60,000 fishermen go for deep-sea fishing. As they cannot go fishing, the deficit is inevitable. More than 1 lakh fishermen catch fish in river creeks and ponds. But the supply has not increased to bridge the demand-supply gap," said Bijon Maity, secretary, Kakdwip Fishermen's Association.

The annual requirement of fish in Bengal 18.2 lakh tonnes and the annual production is now 17.9 lakh tonnes. "The daily demand is around 5,192 tonnes. The supply generally is 5,158 tonnes. But now, the supply is much less. We are trying our best to take the supply to 5,041 tonnes during the festive days," said the Bengal fisheries department officer.

Bablu Das of Maniktala market said: "Fish prices have gone beyond the affordability of middle-class. Even those who are ready to pay through their noses are not getting fish of their choice."

### **West Bengal: State bans use of 20 antibiotics, other substances for shrimp aquaculture**

<http://www.millenniumpost.in/kolkata/state-bans-use-of-20-antibiotics-other-substances-for-shrimp-aquaculture-488936>

"The state Fisheries department has banned 20 antibiotics and other pharmacologically active substances from use in shrimp aquaculture. The department has formed a district level task force committee with 8 members headed by the District Magistrate of the concerned districts . The role of the committee has also been clearly assigned in a notification released by Secretary of the state Fisheries department.

The move comes in the wake of the country's apex drug regulatory authority asking states and union territories to restrict the availability and usage of banned veterinary antibiotics used in aquaculture particularly for shrimps. The use of antibiotics in aquaculture may result in development of pathogens into human beings and also the residue might result in development of

pathogens in human body.

The decision was taken after the chairman of the Marine Products Export Development Authority (MPEDA) – a department under the Ministry of Commerce and Industry – wrote a letter to the Secretary, of the Ministry of health and family welfare, requesting him to take "effective measures" to restrict the availability and usage of banned antibiotics in all food-producing animals including shrimps and fishes. The Task Force Committee (TFC) will make frequent raids or random checks at all shops, manufacturing units and supplier of drugs, probiotics, chemicals feeds etc. and take action on any unauthorized possession of such products.

"The TFC should ensure that the aqua shops do not sell veterinary grade products and encourage aqua grade drugs registered with CAA (Coastal Aquaculture Authority) only. Use of banned aqua products will attract huge penalty or cancellation of license for the concerned aqua shop," a senior official of the department said. According to sources in the state Fisheries department the importing nations have become stricter about India as a source of shrimp. The EU has increased the rate of testing for antibiotic residue in Indian shrimp shipments and the US regulators have even resorted to rejecting some Indian shipments after detecting antibiotics."

**West Bengal News: Use of 20 highly harmful antibiotics in fish, state bans due to fear of illnesses**

<https://www.thetimesofbengal.com/kolkata-updates/west-bengal-news-use-of-20-highly-harmful-antibiotics-in-fish-state-bans-due-to-fear/>

"Fish and rice are not nutritious food? Reckless use of antibiotics in food to rid fish of disease poses a danger to the human body. Not only that, the use of several harmful antibiotics in fish farming is causing illness in many people. In addition, the export trade of fish including shrimp has been challenged. Due to this, the state has banned the use of 20 antibiotics in fish food. Also, the state government has formed an eight-member task force to conduct market raids on the instructions of the central government. Which will be headed by the District Magistrate.

In addition to the district fisheries officer, the police administration, drug controller and food safety officer, representatives of the Marine Products Export Development Authority have been placed in this task force. State Fisheries Secretary Abanindranath Singh has informed the district

administrations in the official directives to conduct regular fish feed, fish farming medicine shops and searches in these markets. Must run the shop cannot sell anything from any other company except fish food and medicine from government statutory agencies. Food labels should be checked. A fine of Tk 25,000 will be imposed if any food containing prohibited antibiotics is found in a shop. If the same shop is repeatedly caught in this crime, the fine will increase to 50 thousand taka.

The task force has also been directed to conduct an awareness campaign against it. Must promote with the help of traders associated with this business. Such antibiotics will make people sick while eating fish. Business will be affected. According to Nabanna sources, the European Commission has already arranged strict monitoring of fish imports from India. At each checking point, 50 percent of the fish imported from India is checked. In one case, it is said that all fish should be brought under the test if excessive use of antibiotics or antioxidants is detected. This year, the target level of production of 10 lakh tonnes of prawns has been fixed across the country. 10 percent of this will be Bagda production. Before that, the Union Ministry of Fisheries and Animal Resource Development is worried about this warning message from the European Commission.

Due to which the Union Ministry of Fisheries requested the state to start a campaign against banned antibiotics like nitrofuratoin or chloramphenicol mixed in fish food in the market. According to the central government, some unscrupulous traders are bringing such kaaba in the market in the name of making the fish disease-free. But all over the world there is propaganda that antibiotics are dangerous for public health. The World Health Organization has also recognized it. It has been seen that the antibiotic enters the human body through bio magnification from the fish body i.e. mixed with the affection of the fish. Which is dangerous for the human body. In addition, district magistrates have also been told to keep a special watch, according to Navanna sources."

**ICSF's film: Unseen faces unheard voices: Women and aquaculture (Purba Medinipur, West Bengal, India)**

<https://www.icsf.net/resources/unseen-faces-unheard-voices-women-and-aquaculture-purba-medinipur-west-bengal/>

"The documentary film Unseen Faces, Unheard Voices showcase the impacts of the boom in aquaculture on women in the floodplain regions of the Indian coastal state of West Bengal. Shot in the remote villages of Purba Medinipur, the film throws light on how traditionally women were involved in aquaculture in this rural landscape.

With changes in land-use-pattern and as agriculture makes way for aquaculture women stand to lose on many fronts. Therefore, the documentary makes a pitch to policy makers, researchers and

institutions to adopt a gender inclusive and a precautionary approach to actualise sustainable development in the sector.

### **West Bengal: Decline in catch due to over-fishing, juvenile netting keep hilsa price high**

<https://timesofindia.indiatimes.com/city/kolkata/decline-in-catch-due-to-over-fishing-juvenile-netting-keep-hilsa-price-high/articleshow/93149738.cms>

"Hilsa and the monsoon are as much synonymous in Bengali lexicon as they are in the kitchen. But this year, ilish continues to elude the average household with retail price still hovering around the Rs 1,400-1,600 per kg mark for fish weighing over a kilogram. Though the price has dipped from the first week of July, when it was Rs 1,800-Rs 2,000 per kg, it is still considerably higher than last year's late-July price of Rs 1,000-Rs 1,200 per kg.

The reason for the price being still on the higher side, said state fisheries department officials, was the marked decline in catch owing to rampant over-fishing with no adherence to rules on net size. The size of the net has been fixed in such a way that smaller catch can slip out and complete the breeding cycle. But unscrupulous fishermen flout the rule.

In the past, years that saw a very poor hilsa catch were followed by bumper harvest, an indicator that if hilsa is allowed a complete life cycle, production will improve. For instance, 2016-17 saw 49,000 tonnes of catch, while the preceding and succeeding years saw around 10,000 tonnes. However, since 2018, the catch has never been able to cross 14,000 tonnes a season. "Our gastronomic greed to savour hilsa throughout the year has led to reckless fishing and scooping up the juvenile fish population before they are ready to breed. The heavy demand for the fish throughout the year means the catch itself has declined over the years. From what was 15,000 tonnes a season in 2009-10, it came down to barely a few thousand tonnes in 2019-20 in Bengal. Consequently, Bengal has slid way down in comparison to neighbouring Bangladesh in hilsa production," said a scientist at ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore. Bangladesh records a seasonal catch of 55,000-60,000 tonnes.

According to the scientist, the dwindling population of hilsa has a lot to do with the demand for the fish throughout the year. After the ban on the breeding period — April to June — is lifted, fishermen net whatever fish they can, with complete disregard for the cap on mesh size. "Catch of juvenile hilsa weighing 300-400g is coming in the way of the fish growing and breeding, which is why the fish population is on the wane. The movement of mechanised trawlers, with net size of 9cm or even less, is wreaking havoc, destroying the food of the hilsa-zooplanktons, phytoplanktons and damaging the ecosystem. Hilsa is very intelligent. If a shoal has encountered turbulence on its route and if a few in the group have managed to break away, they'll somehow manage to avoid the passage," the scientist explained.

CIFRI director B K Das said the institute had been attempting to restore the hilsa population in the Ganga, particularly along a 754-km stretch of the river between Farakka in Bengal and Allahabad in Uttar Pradesh through ranching under National Mission for Clean Ganga Project. But, he admitted, the initiative would only succeed if fishermen stopped netting juvenile fish and allowed hilsa to complete a life cycle.

Greenshoots of the ranching experiment are visible in studies upstream of Farakka, where landing data from Ganga ghats show a rise in fish stocks after the intervention. While hilsa spawn is found more or less throughout the year, they have a minor spawning season in February-March and a major one in September-October."

### **West Bengal: In coastal villages, the heavy toll of shrimp farming**

<https://www.hindustantimes.com/cities/kolkata-news/in-coastal-villages-the-heavy-toll-of-shrimp-farming-101657714916085.html>

"Jyotsna Bar, 32, was eagerly waiting at her thatched hut at the edge of a casuarina forest overlooking the sea. Her two daughters, aged six and 12, had gone to catch seeds of tiger prawns in waist-deep water, as the tide was still low.

"You hardly get fish nowadays in the sea. This was not the case even a decade ago. Now we need to go at least four to five times to the sea to keep the family going," said Bar, a resident of Baguran Jalpai, a coastal village in East Midnapore district, around 160 km south of Kolkata. While catching fish in the Bay of Bengal has been a practice for several years, the production of inland fisheries from fish farms in the villages has been rising. Large swathes of fertile farmlands are being gradually — and illegally — transformed into aquaculture ponds to produce Vannamei shrimps, a native of Peru and Mexico. Government estimates suggest that land equal to that of 40 Dharavi slums has been transformed into aquaculture ponds, in the coastal belt of West Bengal alone, between 2006-07 and 2017-18. "This shrimp is coming at a huge environmental cost.

The saline water used to grow shrimps destroys soil fertility. The polluted water from the fish farms is drained into the sea after each harvest. This takes a heavy toll on the fish population," Santanu Chacraverti, president of DISHA, an NGO working on this issue. HT travelled to some of the coastal villages to find out about this transformation and its impact. Green farmlands give way to blue fences As one travels down the narrow-metalled road leading to the beach, what catches the eye are large shrimp farms. They are easily identifiable as they are all fenced with blue nylon nets. Motor-fitted pedals can be seen rotating in the water to keep the shrimps alive. "Vannamei shrimp farms are all over the village now. A handful of villagers still cultivate tiger prawns and giant freshwater prawns. But it is mostly the Vannamei cultivation that has shot up in the last decade. If all goes well, the profit margin is huge. But risks are also involved," said

Debabrata Khutia, a villager.

The National Wetland Inventory and Assessment (NWIA), which was published in February this year, and provides a satellite-based decadal change analysis of wetlands, revealed that in the area under aquaculture ponds, only in the three coastal districts of West Bengal have shot up from 55,299 hectares in 2006-07 to 65,056 hectares in 2017-18. The area under aquaculture ponds in other districts of the state too have shot up by 6,596 hectares during the same period.

The NWIA report states that West Bengal has got the highest share (36%) of the area under coastal aquaculture farming in the country. A Right to Information (RTI) application has revealed that while production of marine fishery in West Bengal has shown signs of decline between 2011 and 2021, the production of the inland fishery has shot up from 12.66 lakh metric tonnes (MT) in 2011 to 16.46 lakh MT in 2021. The shrimp you eat comes at a cost Burgeoning shrimp farming in the coastal villages is, however, taking a huge toll on the environment, experts have said. “Saline water from the sea, which is allowed to flow into the shallow aquaculture ponds through canals, ultimately seeps into the adjacent farmlands.

They soon become useless as paddy or vegetables won’t grow due to high salinity. The owner would be forced to start shrimp cultivation himself or give it to someone on lease for aquaculture” said Debasis Shyamal, national council member of the National Platform for Small Scale Fish Workers. The problem starts when villagers, in a bid to increase the profit margin, overstock the illegal ponds with shrimp seeds. The pond needs to be aerated regularly and there has to be a steady supply of fish feed, medicines, and antibiotics as diseases often break out in overcrowded ponds.

“Once the harvest is done the sludge at the ponds bottom and the water, a cocktail of antibiotics, fish feed and other medicines are drained into the sea through the canals. This takes a toll on the fish population in the sea as far as this polluted water travels,” said Ajanta Dey, joint secretary and programme director of the Nature Environment and Wildlife Society, a Kolkata-based NGO.

While unbridled and unscientific fishing by huge fishing trawlers over the years has taken its toll on the marine fishery, the fish farms along the coast are now having their own impact. “Every time the water from the fish farms is released into the sea through the canals, you can differentiate it. The water is blackish in colour. The catch drops. A decade ago we used to get 10-12 kilos of fish per day. Now we have to stay in the sea for 12-15 hours, and invest more to purchase at least 5-6 fishing nets to get only half the amount of fish. When the water from the fish farms is released, the catch drops further and comes down to a few hundred grams,” said Ranjit Bar, husband of Jyotsna Bar.

All that glitters are not gold Naba Kumar Jana, 48, started Vannamei culture in 2021 in his small pond. He, however, suffered a loss. This time again, he has released shrimp seeds, hoping to get some good returns and recover the loss. “All goes well as long as you get good returns. As the investment runs into a few lakh rupees villagers take loans from money lenders and buy fish medicine and feed on credit. But once you suffer a loss, because of some disease outbreak, there is no way you can recover it by returning to agriculture. Once in the debt trap, you have to do shrimp cultivation. It is like a gamble,” said Jana. Jana, who has suffered one year of losses, already has a debt of nearly two lakh rupees. His neighbour, Dipak Sit, who has been doing Vannamei cultivation since 2017, and has suffered losses for at least two years, has a debt of more than three lakh rupees. “Almost everyone in this area is debt-ridden, but none reveal it.

Because the moment moneylenders come to know that a person is suffering losses, they would demand their money back. Pressure also starts building on those who gave things on credit, such as medicines. Ultimately if a person fails to return the money, he is left with three options: Flee from the village abandoning everything, die by suicide, or give his farm on lease to someone in exchange for money and work as a labourer on it,” said Sit. What the government is going The Coastal Aquaculture Authority Act (CAAA) 2005 has laid out detailed guidelines for such shrimp farming. These include the following: The pond should be at least 50m away from farmland, 100m away from human habitat, and the distance between two ponds shouldn't be less than 20m, and so on. But villagers and NGOs working in the area said that these rules are not followed and most of the farms are running illegally without following any rules.

“The highly intensive shrimp farming that is going on in the coastal villages is illegal. Farmlands are being converted into aquaculture ponds and the Coastal Aquaculture Authority Act is being violated. We have submitted deputations to the district administration more than once” said Tamal Taru Das Mahapatra, president of East Midnapore Fishermen Forum, a branch of the South Bengal Fishermen Forum.

While the government accepted the fact that not everything is going as per law and only a handful of the farms are legally registered, officials said that awareness levels are being raised in the villages through camps. “If we get complaints, we act accordingly. But we have not received any such complaints from Baguran Jalpai that fish farms have come up adjacent to farmlands taking a toll on the agriculture. I won't say that everything is going in the right manner, but at least the number of complaints has come down over the year,” said Akhil Giri, state fishery minister. A senior official of the state fishery department said that only around 2000 fish farms in East Midnapore district are registered as per the CAAA, 2005. “Most of the farms are running illegally. Fish farming close to fertile farmlands and the polluter water being drained into the sea is a real issue.

The government is raising awareness so that the environmental impact could be scaled down and more people register their fish farms,” said an official. Mitigating the impact Scientists and experts working in this field are now campaigning for Integrated Mangrove Aquaculture Management, which will mitigate the impact of shrimp farms on the environment. “The idea is to plant mangrove species on the banks of the ponds for bioremediation. The leaves of mangrove trees have anti-bacterial and anti-viral properties which help to bring down the use of antibiotics and medicines. Also, the mangrove helps bring down the level of carbon dioxide and methane,” said Punyasloke Bhadury, a biologist from IISER, Kolkata.

While Bhadury and his team are holding talks with some villagers who are into shrimp farming to start the Integrated Mangrove Aquaculture Management, a pilot project has already taken off in South 24 Parganas. “Mangroves are known for their bioremediation properties. Our research has found that mangroves in the Sundarbans have trapped all kinds of metals from copper to zinc. They are locked in the woody stems this keeping the surrounding water clean,” said Abhijit Mitra, former head of the marine science department of Calcutta University."

### **West Bengal: Central govt develops aerial monitoring system to check water bodies and fish health**

<https://www.telegraphindia.com/west-bengal/central-government-develops-aerial-monitoring-system-to-check-water-bodies/cid/1874084>

"The central government has developed an indigenous technology for aerial monitoring of inland water bodies and underwater inspection for fish health management in real time with aerial and underwater drones. Powerful aerial drones conceived and technologically integrated by the Barrackpore-based Central Inland Fisheries Research Institute (CIFRI), a wing of the Indian Council of Agricultural Research (ICAR), can access water bodies in inaccessible areas, spray medicine and fly with water samples..

Underwater drones developed by the CIFRI can dive 100 metres into the water to scan fish behaviour and take out dead fish with robotic hands. Scientists and researchers feel that the project can benefit the riverine delta of the Sunderbans spanning parts of North and South 24-Parganas districts where a large number of fisheries are located.

The endeavour conceived and developed by the CIFRI, under its Precision Fish Farming Inland Open Water Project, had been placed for discussion to examine its feasibility and implementation across the country by the organisation at a pan-Indian conference “Indian Fisheries Outlook 2022” in Barrackpore in March. The initiative was widely accepted in presence of scientists and fishery entrepreneurs apart from the representatives of various state

governments including Bengal.

“Our aim is to ensure sustainable development of fisheries using technology that can double the earnings of the farmers with minimum investment,” CIFRI-Barrackpore Director Basanta Kumar Das told The Telegraph. “Under the Precision Fish Farming project we have adopted a highly precise set of practices to cater to individual (fish) farms.”

Scientists working in inland water bodies — canals, rivers and ponds — usually need a long time for inspection, collection of water samples and other tasks through boats. These jobs can be done by aerial drones in minutes, Das added. “A drone can access difficult areas where boats can be risky. It can take pictures and collect water for analysis using its inbuilt sensors and can be very effective for aqua vegetation mapping,” he said. “It can fly up to 30 minutes continuously with items that weigh up to 11kg.”

The underwater drone fitted with a powerful camera and light can be used to study fish behaviour and health. “This includes identifying diseases or erratic behaviour of fish, taking out dead fish or any unwanted item from water,” Das said, adding that they had attached robotic hands to underwater drones. Sunderbans affairs minister Bankim Hazra, who recently visited the CIFRI campus in Barrackpore, said: “The concept introduced by the CIFRI has great potential for farmers in Sunderbans. We are examining its scope and feasibility.”

**West Bengal: The resilient women of Sundarbans are fighting back cyclones by planting mangroves**

<https://swachhindia.ndtv.com/the-resilient-women-of-sundarbans-are-fighting-back-cyclones-by-planting-mangroves-69535/>

"31-year-old Aparna Dhara lives in Lakshmipur village of Kakdwip Block in Indian Sundarbans with her husband, two sons (16 and 12-year-old), and in-laws. Aparna and her husband are primarily paddy farmers, who also grow some vegetables and own a small shop to sell poultry products. Since Cyclone Amphan in May 2020, Aparna's house has been destroyed twice. She says, “Earlier there were no trees around our house or on the banks. As a result, high tides would break the banks resulting in water entering our houses and leading to huge devastation.”

But, today, Aparna along with other local women has planted trees and grown a little forest that now protects river embankments. Since the salinity in their area is high, women have planted mangroves like *Avicennia* (grey mangrove or white mangrove) that can tolerate saline water.

Many like Aparna have created nurseries and planted hundreds of mangroves in and around their area across Sundarbans. And today, they are reaping the benefits of mangroves in the form

of a natural bio-shield, strengthened embankments, and forest products. Mangrove afforestation driven by local women has been possible due to the efforts of NGO Nature Environment and Wildlife Society (NEWS) that made these women green warriors.

Until 2009, in Sundarbans, NGO NEWS was engaged in various activities like tiger straying and generating livelihood activities. Recalling their work, Ajanta Dey, Joint Secretary and Programme Director at Nature Environment and Wildlife Society said,

Forest agencies and other private organisations were always planting mangroves. They would plant in July and by the year end, in December, nothing would remain because they were practising monoculture that is, planting only one type of species. Also, there was no monitoring of the plantation; it was taken up as a one-time job.

To switch from plantation, a one-time job to afforestation for creating a forest and restoring mangroves, from 2007-2009, NGO NEWS tried a community-led plantation model with local women in three villages. Explaining their work, Ms Dey said,

We selected two patches of land – 100 hectares and 70 hectares. While we created awareness about the importance of mangroves, both plantation and monitoring were done by women. We did the risk mapping to know why mangroves planted by forests or other agencies were dying. There were multiple reasons like grazing, fishing – net dragging would uproot the mangroves and soil erosion – in some places chunks of soil were eroding. We mitigated the risks by involving the community; we asked villagers to not let their goats loose for grazing. We saw that in two to three years, the yield was good.

On May 25, 2009, cyclonic storm Aila struck eastern India and southern Bangladesh. Only a tail of Aila touched Sundarbans and part of Kolkata and moved to Bangladesh but it caused heavy damage in the area. In the words of Ms Dey, crocodiles were inside the villages, Aila washed away fishes, and houses were destroyed like someone pressed them with a thumb.

We noticed that wherever we had planted mangroves, those embankments were absolutely okay. It came as a lesson on the importance of mangrove plantations. Personally, the devastation was an eye-opener for me too. We as an organisation started wondering what we are doing here. Unless we are able to make islands resilient whatever livelihood activities we do or houses we build, they will be destroyed if mangroves are not there, said Ms Dey.

It's after Cyclone Aila, the focus of NGO NEWS shifted to mangrove afforestation and community-led mangrove plantation with the message, If you need to live here, you have to protect the mangroves.

Soon after the NGO mobilised funds, did risk mapping and from July 2010 to 2015, they did mangrove plantation across 183 sites in Sundarbans, covering 4,586 hectares of land. Over the years, 22 more sites have been added, covering an additional 180 hectares of land.

When we mitigated the risk, we worked with the fishermen and told them to not park their boats all over the embankments because that restricts the growth of mangroves. We asked them to select one area so that we don't plant there, said Ms Dey.

Nurseries were created at each site so that women involved in plantations are attached to the tree from the start. Currently, only 8-10 nurseries exist at other sites, the plantation is completed and now trees are growing into the forest. NDTV-Dettol Banega Swasth India team visited a central nursery at Manmathanagar where 54 local women are growing different kinds of mangrove saplings. Women like Tumpa Jana believe it's their responsibility as the inhabitants of Sundarbans to preserve and protect the delta for future generations. She said,

We plant mangrove saplings by the riverside to keep the area around our houses safe. First, we prepare the saplings and then plant them in a row along the river to keep the embankment and our houses protected.

### **West Bengal: Fishermen's associations complain about defunct capsized alert tools**

<https://www.telegraphindia.com/west-bengal/fishermens-associations-complain-about-defunct-distress-alert-transmitters/cid/1873530>

"Fishermen's associations in East Midnapore and South 24-Parganas have rued that several thousand DATs (distress-alert transmitters) that the government installed in 3,500-odd vessels a few years ago are defunct. The vessels fitted with the DATs constitute at least half of deep-sea fishing vessels in the two districts. But sources say the machines fell into disuse owing to pandemic-enforced lockdowns as well as purportedly substandard battery lives. With the revival of full-fledged hilsa fishing in mid-June this year, trawler operators have come out in large numbers saying their DATs don't work.

"These devices, if operational, are extremely beneficial for our safety. They send out signals directly to the Chennai Coast Guard in case of an emergency. But it turns out that a new battery for this costs Rs 4,500 and the government will not arrange for it," said a fisherman. Fishery association sources in East Midnapore said they had spoken to government officials in this regard, who in turn referred to an implicit understanding that following the initial installation, all maintenance would fall upon trawler owners or operators.

"It seems these batteries last only a year and a half. And the last two years have been some of the

worst in fishing history, for obvious reasons. So, these devices might just go to waste; we are trying to prevent that,” said an association member. “Even if we are expected to pay for these, a look-back at the last two fishing seasons will amply prove our inability to do the same.” Satinath Patra, secretary of the Kakdwip Fishermen’s Association, spoke about the security that DATs provided to fishermen. “We all would like to have these on board but in a cost-effective manner,” he said. State fisheries minister Akhil Giri said he would await a formal letter describing the state of the DATs and a proposed solution, following which he would write to companies concerned for necessary maintenance and repair.

Last month, a trawler had capsized in the Bay of Bengal off East Midnapore’s Petuaghat. The cause of the accident in which nine lives had been lost had been turbulent waters. While preparing to venture into the sea from Fraserganj in South 24-Parganas on Wednesday, a fisherman said precious lives could have been saved in the Petuaghat incident if the trawler had a working DAT.

“If an alert had been transmitted from the vessel, it would have helped the Coast Guard jump into the rescue act. This could have saved the lives of the crew and those onboard the trawler,” the fisherman said. Apart from installing the DAT in vessels to curb trawler accidents that have claimed over 100 lives in the past few years, the state government has been mulling a design change for trawlers since last year while advising fishermen to indulge in “group fishing” to help each other in a crisis situation.”

### **West Bengal: Should learn from Bangladesh how to conserve hilsa, meet demands**

<https://www.thedailystar.net/news/asia/south-asia/news/west-bengal-should-learn-how-consume-hilsa-and-meet-demands-bangladesh-3064566>

"Shankar Dey, a mid-ranking government officer in south Kolkata's Deshopriya Park locality, makes it a point to browse the nearby Lake Market early every morning in search of quality fish.

This year, he is disappointed as his first love hilsa is acting pricy. The reason? Short supply due to late arrival of monsoon in southern part of West Bengal. Shankar has no option but to wait for the Durga Puja festival in the first week of October, when supply of quality hilsa from Bangladesh would begin.

While Bangladesh strictly enforces a ban on catching hilsa during the breeding season, it is not by and large the case in West Bengal, said Anudeb Das, a leading fish seller at Jadavpur market in south Kolkata.

He said bazars in Kolkata are flooded with small-sized hilsas – locally called "khoka ilish" – and many of the bigger fish are carrying eggs. "That is because the insatiable craze for hilsa and sellers' greed for quick bucks is endless in our state," said Das. "By contrast, look at Bangladesh which has perfected the practice of conserving and promoting hilsa not only for domestic consumption but also catering to hilsa connoisseurs abroad. In Bangladesh, anyone flouting the ban on catching hilsa 'jatka' (immature fish) at this time is dealt with a heavy hand. But not so in West Bengal," said a fish wholesaler in Howrah market.

"Basically, we have not learnt how to balance the demand for local hilsa variety and their conservation during breeding season," said the fish trader. "The Indian side of the confluence of the Ganges and the Bay of Bengal – at Ganga Sagar island – is largely bereft of hilsa because of rampant fishing of the 'khoka ilish' (smaller fish)," he added.

As monsoon usually sets in Bengal by June-end or early July, people in Kolkata wait for hilsa to spice up their palates. "Customers eagerly wait for the 'notun joler ilish' at the start of the monsoon. But this summer, the arrival of monsoon has been delayed and is very weak so far," said Anudeb Das.

So, the people in Kolkata are forced to make do with the hilsa from Diamond Harbour near the Ganga Sagar Island, Damodar river, and those from Myanmar. But, as Rajiv Chakraborty, a school teacher in Gariahat locality of Kolkata, reiterates: "Nothing beats the taste of a Bangladeshi hilsa, especially that of Padma river."

### **West Bengal: Climate change is causing change in farming patterns in a Bengal village, exacerbating flood problem**

<https://www.news9live.com/art-culture/society/climate-change-is-causing-farming-patterns-to-change-in-a-bengal-village-exacerbating-its-flood-problem-180267>

"West Bengal has traditionally been known as a rice-producing state. The sweet, fertile soil with abundant water supply supports the water-intensive rice crop. In fact, it is the largest producer of rice in India, according to a report. But that might be gradually changing, thanks to climate change. Fisheries are taking over the reigning paddy crop in several places in the state. One of the primary reasons driving this change is unpredictable, unseasonal and extreme rainfall.

"Over the past three years, rainfall has increased severely, leading to floods as well," says Ramakrishna Das, a resident of Bhagabanpur village in Purba Medinipur district, and the first man in his village who shifted from paddy farming to fisheries. The 67-year-old has been farming since he was a teenager, but has not seen such extreme weather conditions in his lifetime. Last October, the entire block where his village resides was flooded due to extreme rainfall, and his 5 acre fisheries were washed away, leading to a crippling economic loss.

A report in The Guardian states that "in a warmer climate, heavy rainfall will increase and be produced by fewer more intense events. This could lead to longer dry spells and a higher risk of floods." In effect, climate change has made rain unpredictable - it falls during the wrong time and in far greater quantities than before. As traditional Indian farming is heavily dependent on natural forces, small farmers fall prey to the vagaries of nature.

The untimely rainfall damages crops, especially the paddy, by inundating their fields which rots away at the whole crop. But for fisheries, this increased rainfall is beneficial as the volume of water increases and is a natural way to fill the breeding ponds. However, when excess rainfall leads to flood-like situations, it becomes detrimental. But since the probability of ponds overflowing is lesser compared to fields being inundated, fisheries face lesser loss.

Another reason for the shift in farming patterns is profit. "There isn't much profit in paddy farming. The value of the crop is less and the labour cost is high," says Das. "If you spend Rs. 100 on production, then rice yields a profit of Rs. 15 whereas fish gives you Rs. 35." An article on Down to Earth stated that such a shift is economically beneficial. It mentions, "According to a report, in Bangladesh, the net income return from rice-fish culture was over 50 percent greater than that from rice monoculture."

For brothers Pintu and Pradip Dey, who run a food stall in the state's capital Kolkata all year round, fish farming allows a sizeable side income without the intensive, back breaking labour required for paddy farming. Fishing doesn't need as much care as paddy. The brothers put in the labour of digging the ponds, cleaning the fisheries and putting fresh water and fish on their trips to the village, while the regular feeding is taken care of by their mother and wives. "We had started fishing in our own backyard pond for personal consumption, and sold the surplus. But seeing that this is a profitable enterprise, we took up fish farming. We don't have to stay in the village throughout the year to do this as well," says Pintu Dey. To this, his brother adds, "Also, we can't work in Kolkata forever. At some point, we have to return to our village. What will we do then? If we have an established farming business, then we can live off it." The brothers are among the late stragglers in the growing throng of fish farmers in Bhagabanpur. Following Das' lead, a lot of fellow villagers are digging up their paddy fields to make way for fisheries.

But this leads to another problem: waterlogging. "After the fields are dug, the debris are thrown into canals, which reduces the depth of these water bodies and also leads to blockage," says Das. Canals have historically served as the inlets and outlets for fresh water and wastewater respectively. When these get choked, the water stagnates and has no place to flow out. So, when the rains arrive, the water is already at a higher level. As a result, flooding happens faster and the consequences are much more disastrous. Also, fisheries don't have a natural outlet for excess water to seep out, as the fish would also swim out. It is blocked by land on all sides.

There is no place for excess water to flow out during extreme rainfall, leading to the ponds overflowing and the fish washing out. Another factor which exacerbates this problem is illegal encroachment on the main canal which connects the villages' canals with the river. Small shops and shoddy settlements of mud, brick, straw and bamboo line the canal all the way from the village to the highway, nearly half an hour away.

These structures have reduced the canal's breadth, thereby reducing its effectiveness. Solid waste also gets lodged in the structures' foundations, jamming up the spaces. Add to it rampant littering and increased volumes of plastic waste, which choke the canal further. As these are not cleaned, harmful algae have covered enormous chunks, which further impede the water flow.

Ironically, while human-action induced climate change is driving villagers to shift from paddy farming to fisheries due to extreme rainfall and flooding, this shift is further adding to the flooding problem. If one goes by The Guardian's report, which also states that ""the total volume of precipitation is likely to increase by 1-2 percent per degree of warming,"" will the feasibility of farming in India, in general, become an impossible affair?"

### **West Bengal: CIFRI steps in to aid distressed Sunderbans fish farmers**

<https://timesofindia.indiatimes.com/city/kolkata/cifri-steps-in-to-aid-distressed-sunderbans-fish-farmers/articleshow/92326128.cms>

"ICAR-Central Inland Fisheries Research Institute (ICAR-CIFRI) has provided fish seed, feed and lime along with technical support to 500-odd distressed fish farmers of Kultali in Sunderbans to help them improve their livelihoods. Led by director B K Das, ICAR-CIFRI has also empowered rural women with technical support and technological inputs for ornamental fish farming. "The aim is to ensure that an investment of Rs 32 lakh in a cluster of 500 fishermen in the area generates around Rs 2 crore," Das said.

Three lakh fish seed, 52.5 tonne fish feed, 10 tonne lime and 55 ornamental units were distributed among 555 people. Live demonstrations, mass awareness events and on-site training and capacity building programmes were also held.

Fish is an integral part of the lives, livelihoods and diets of people living in the Sunderbans. Every household has a backyard pond. The major chunk of their harvest from pisciculture is for their own consumption with only 15%-20% sold in the market.

Following ICAR-CIFRI intervention, each household has, on an average, sold 100-150 kg fish for Rs 10,000-15,000 in the past six months and has a standing stock of around 60%. "It is expected that 200-300 kg of fish will be harvested from the backyard ponds with an anticipated

average income of Rs 22,000-30,000, leading to income of Rs 1.3 crore from this cluster apart from household consumption,” said Das."

### **West Bengal: Khoka ilish floods markets, big worry for hilsa population**

<https://timesofindia.indiatimes.com/city/kolkata/kolkata-khoka-ilish-floods-markets-big-worry-for-hilsa-population/articleshowprint/92400386.cms>

"The fetish for hilsa in city households has led to premature catching of small-sized hilsa, raising an alarm against unsustainable fishing practice and poor monitoring that allows the fish to be caught in fine nets that are banned. Jayotee Mitra Mukherjee, a school teacher purchased a 750 gm hilsa for Rs 1,100/kg from Gariahat Market. ""The size is too small and the price too high. The taste, I guess, will be just about average. But with everyone at home looking forward to the first hilsa of the season, I decided not to wait any longer,"" she said.

Amar Das, a trader at Lake Market, said, ""The fish that weigh 500 gms are retailing for Rs 750/kg, those weighing 800-900 gms cost Rs 1,400-1,500/kg. The 1.5 kg fish is being sold at Rs 2,200/kg,"" he said. At Narendrabazar in Diamond Harbour, hilsa started coming in last weekend. Around 3,000 trawlers have set sail in batches over the past seven days. Partha Sarathi Kuti, owner of Zenith Fish, a key player in the auction market, said, ""There is a craze for hilsa early in the season and they will find buyers. But it would have been better to wait a bit longer for the rains to intensify. The fish would have migrated to the river and spawned, improving both size and taste.""

Principal scientist of Barrackpore's Central Inland Fisheries Research Institute (CIFRI), Ranjan Kumar Manna, said the migration up the river enhances the taste due to change in lipid profile of the fish as it swims against river current. ""It is only after exposure to sweet river water that the fish appear to grow in girth and also acquire better taste. But we have been trapping them before,"" admitted Mrityunjoy Dolui, a fisherman from Patharpratima.

Dwijen Maity, secretary of the fishermen association, said eight trawlers had been traced, their original papers seized and showcaused by the fisheries department for using illegal nets."

### **West Bengal: Ban on entering Sundarbans: 200,000 families pushed into financial hardship**

<https://www.dhakatribune.com/bangladesh/2022/06/12/ban-on-entering-sundarbans-02-million-families-pushed-into-financial-hardship>

"As many as 200,000 families who depend on the Sundarbans for their livelihoods have been facing acute financial hardship due to the three-month restriction on collection of resources from the mangrove forest.

The government restricted entry into the forest for fishing, travel or resources collection for three months from June 1 to August 31 to ensure an undisturbed environment for wildlife during the breeding season.

Woodcutters, honey collectors, fishermen and others in seven districts—Khulna, Satkhira, Bagerhat, Pirojpur, Barguna, Jhalakathi and Patuakhali—along the Sundarbans have been passing idle time without work due to the ban.

During a recent visit to the Sundarbans, the UNB correspondent learnt that many people living on fishing, cutting wood, and collecting honey from the Sundarbans are facing an acute food crisis and living either starving or half-fed.

Bawals (wood collectors), fishermen and Mowals (honey collectors) said they need assistance from the government or they would die from starvation.

MA Hasan, assistant director of Sundarbans West zone (Satkhira range), said the forest department is enforcing a 93-day "Surbandbans rest zone" till August 31 and during the period, no one will be allowed to enter the forest.

Already, a list of the worst affected people was sent to the authorities concerned of the Forest Department seeking assistance but yet to get any response, he added.

Sudhanshu Sekhor Gain, a fisherman of Burigoalini in Satkhira's Shyamnagar upazila, said: "I have been running my family by catching crabs from the Sundarbans but now I have no income."

"We are passing a hard time, maintaining family with our low income has become difficult amid soaring prices of daily essentials and then the restriction came. No one can feel my pain," said Hanif Gazi, another fisherman in the area.

Siddique Gazi, a fisherman of Datinkhali village of the upazila, said: "We are not habituated to work outside the Sundarbans as we earn by catching crabs and fish from the forest. We are struggling hard due to the ban."

Tushar Kumar Majumdar, senior fisheries officer of Shyamnagar upazila, said there is a list of

795 fishermen in the upazila.

“They will get 86kgs of rice per person. Besides, a list of 8,324 fishermen was prepared and sent to the Forest Department for food assistance,” he observed.”

### **West Bengal: Two-tiered fish farming started in the Sundarbans**

<http://www.uniindia.com/two-tiered-fish-farming-started-in-the-sundarbans/east/news/2749313.html>

"The aquaculture sector has been conventionally playing a pivotal role in addressing the key global challenges of food and nutritional insecurity, poverty alleviation, sustaining economic development, providing livelihood and employment opportunities. This sector is considered a sunrise sector in India, which has an annual growth rate of 7.53 percent in total fish production. Availability of quality fish seed in adequate quantity is important to expand the brackishwater finfish culture in different culture systems viz. pond, cage etc. Apart from this, ICAR-CIBA has also developed and successfully demonstrated a number of farming methods - polyculture, multi-tier farming, biofloc and periphyton based farming - of brackishwater finfish to farmers.

The ICAR-Central Institute of Brackishwater Aquaculture (ICAR-CIBA) has developed a comprehensive technology package for seed production of various kinds of fish including some of brackishwater ornamental variety in the Sundarbans. The varieties of fish seed being produced through this technology include seabass (*Lates calcarifer*), milkfish (*Chanos chanos*), pearl spot (*Etroplus suratensis*), catfish (*Mystus gulio*), besides some brackishwater ornamental fish such as spotted scat (*Scatophagus argus*), silvermoony (*Monodactylus argenteus*) and orange chromide (*Etroplus maculatus*), according to a ICAR-CIBA release."

### **West Bengal: World Environment Day special: Sundarbans the land of tides, tigers and threats**

<https://swachhindia.ndtv.com/world-environment-day-special-sundarbans-the-land-of-tides-tigers-and-threats-68432/#climate-change-and-sundarbans>

"The Sundarbans – lies on the delta of the Ganges, Brahmaputra and Meghna rivers on the Bay of Bengal. According to the World Wildlife Fund India, this active delta region is among the largest in the world, measuring about 40,000 sq km. A UNESCO World Heritage Site, Sundarbans is one of the world's largest contiguous mangrove forest spread over an area of 10,000 square kilometers, 60 per cent of which lies in Bangladesh and the rest in India. According to Sundarban National park India Official website, the 4000 sq. km of Sundarbans is on the Indian side has 102 islands, out of which 54 are inhabited and the rest are covered with

forest.

The unique landscape of Sundarbans with its intricate tidal waterways, rivers, creeks, backwaters, low lying islands, swamps and stretches of mudflats, provides a diverse habitat for various species of plants and animals, be it terrestrial or aquatic. Home to the endangered Royal Bengal Tiger, it is the only mangrove tiger habitat in the world. According to World Heritage Convention (UNESCO), apart from the tiger, some of the other threatened species of the area are estuarine crocodile, Gangetic Dolphin, Olive Ridley Turtle and Water Monitor Lizard.

One of the reasons why it is tagged as the UNESCO world heritage site is because it is the only remaining habitat in the lower Bengal Basin, which has a wide variety of faunal species, states World Heritage Convention (UNESCO). Sundarbans gets its name from Sundari, the local name of the mangrove species, *Heritiera foeniculifera* Buch-Ham. (ME). Sundari means beautiful in Bangla. Broadly, there are two types of mangroves – freshwater loving and saltwater loving. Species like Sundari and Nipa love fresh water whereas *Avicennia* (grey mangrove or white mangrove) can sustain high salinity. Due to the lack of availability of freshwater in Indian Sundarbans, species like Sundari, which used to be dominant specie, is disappearing. Gradually, all fresh water loving mangrove species are now getting replaced with the ones that can withstand salinity.

Slowly but steadily climate change is transforming the reality of Sundarbans. Home to a large human population - 4.5 million in India, as per World Wildlife Fund, the consequences of climate change are hitting lives and livelihoods hard. With the ocean swallowing up land in the world's largest mangrove forest, humans and tigers are being squeezed into an ever-shrinking space. Flooding of low-lying deltas, the retreat of shorelines, salinisation and acidification of soils, and changes in the water table, Sundarbans is dealing with all kinds of dire consequences.

According to World Wildlife Fund, four islands have vanished in Sundarbans due to the effects of climate change in the last 25 years — Bedford, Lohachara, Kabasgadi, and Suparibhanga. Lohachara became well-known as the world's first inhabited island to be submerged in 2006. Sagar, a delta island with a population of 200,000 in the Bay of Bengal has lost almost 12 per cent of its shoreline to coastal erosion in the last four decades, according to NASA Landsat satellite imagery. The region today serves as a prominent climate change “hotspot” for climate researchers. NASA Landsat satellite imagery also shows that the sea level has risen in the Sundarbans by an average of 3 centimeters (1.2 inches) a year, over the past two decades, leading to one of the fastest rates of coastal erosion in the world.

The fast-encroaching sea, driven by climate change, has also eaten away at the hunting grounds of the Sundarbans' famous Bengal tigers, pushing them to target livestock of villagers and increasingly, the villagers themselves. Not just that, the Forest Survey of India states that in the

last decade, very dense mangrove cover in West Bengal has declined by 4.23 per cent - from 1,038 square km in 2011 to 994 square km in 2021..."

### **West Bengal: Fish diversity in Ganga up 36% in 10 years**

<https://timesofindia.indiatimes.com/india/fish-diversity-in-ganga-up-36-in-10-years/articleshow/91927210.cms>

"Fish diversity in the Ganga had nearly halved in 20 years between 1991 and 2012. But it now appeared to be on the mend, with over 90% of endangered species making a comeback following interventions to clean up the river and sensitizing fishermen to avoid catching juveniles. Prized fish like hilsa, kajri or sutri, vacha, garua and morari or piyali were among species that have revived—and available now in towns along the river.

Studies conducted over the past five decades reveal a wave-like curve: 207 species in the inaugural study in 1974, rising to 266 in 1991 before witnessing a precipitous decline to just 140 in 2012 and then making a smart recovery to 190 in 2021, a 36% rise in the last decade. Researchers have looked at the river's primary channel, not its tributaries and distributaries.

Officials at the Central Inland Fisheries Research Institute (CIFRI) clarified that the fish species that dropped out of the records did not disappear from the river altogether but were not in sufficient numbers. These include pabda, batashi, kholshe, deshi koi and deshi magur. In earlier studies, 79 native Gangetic fish species were detected in the stretch between Kanpur in UP and Farakka in Bengal. But the latest study reported 103 species in the same stretch. The lower zone from Farakka to Tribeni in Bengal reported 123 species and 72 along the freshwater tidal stretch, with the dominant species being Hilsa and other small indigenous fish such as chella, morari, Gangetic river sprat and Indian river shad.

The improvement in fish diversity and population followed multiple initiatives taken by CIFRI, including ranching and seed production of indigenous Gangetic species. More than 47 lakh fingerlings of major Indian carps have been ranched to increase diversity.

The effects of ranching are beginning to show. Landing data from different Ganga ghats showed a rise in fish stocks. The increase in fish population has, in turn, helped improve the water quality. Fishermen Purna Patra from Godakhali and Binay Biswas from Tribeni said their catch had increased significantly over the past few years. "Local varieties of fish that were rarely found are now being netted," said Biswas.

The Farakka region recorded 84 species, the highest ever for that stretch, indicating congenial

riverine environment supporting a stable fish population. “In the lower Bengal stretch of the Ganga, four exotic fish species — crocodile fish, bighead carp, grass carp and silver carp — were reported, exhibiting population stability in the river largely due to change in riverine ecology,” said CIFRI director and project investigator Basanta Kumar Das.

The decline between 1991 and 2012, scientists at CIFRI said, was due to deterioration in the river’s water quality because of outflow of polluted water, sewage and chemicals from civic bodies and industries along the river, and overfishing, which impacted the overall fish population. ICAR-CIFRI, along with other agencies engaged in the Ganga Action Plan project that was later rechristened National Mission for Clean Ganga, has managed to stem the decline and revive 50 species. But there are still less-abundant species like pangasius, pabda catfish, giant river goonch, chitala and silond catfish that require more effort. Around 10% of the native species are considered threatened, while 15 more are in the near-threatened category, two vulnerable and two endangered as per the IUCN red list 2020."

### **West Bengal: Fishermen, visitors barred from Sundarbans for 3 months from June 1**

<https://www.thedailystar.net/environment/wild-life/news/fishermen-visitors-barred-sundarbans-3-months-june-1-3035891>

"The Forest Department has barred fishermen and visitors from entering the Sundarbans from June 1 to August 31.

As per the recommendations of the Integrated Resources Management Plan (IRMP), the Forest Department has closed all access to the Sundarbans during the breeding season. To enforce the ban, the Forest Department has stopped all kinds of pass permits for entering the Sundarbans. At the same time, security has been strengthened inside the Sundarbans, reports our Bagerhat correspondent.

Muhammad Belayed Hossain, Divisional Forest Officer (DFO) of the Sundarbans East Forest Department, said fishing in all rivers and canals in the Sundarbans is suspended from July 1 to August 31 every year, since 2019, as per the recommendations of the Integrated Resources Management Plan (IRMP).

This year, in coordination with the Fisheries Department, the ban has been extended by one month. Security has been beefed up inside the Sundarbans during this time. The implementation of this ban will further increase the animal and forest resources of the Sundarbans. There are 210 species of white fish, 24 species of shrimp, 14 species of crabs, and 1 species of lobster in the 6,017 sq km Bangladesh part of the Sundarbans."

## **West Bengal: Fisherman killed in tiger attack in Bengal's Sundarbans**

<https://www.devdiscourse.com/article/entertainment/2055184-fisherman-killed-in-tiger-attack-in-bengals-sundarbans>

"A 45-year-old fisherman has been killed in an attack by a Royal Bengal Tiger in Sundarbans National Park in West Bengal's South 24 Parganas district, a forest officer said on Monday.

The deceased, identified as Sannasi Mondal, a resident of Kumirmari village in Gosaba block of the district, along with three others had gone to the forest to catch crabs and collect honey on Saturday, he said. After a day's hard work, they spent the night on the boat. While they sleeping in their boat on Sunday morning, the tiger, which had quietly approached them unnoticed, suddenly attacked Mondal and grabbed him by his neck, the forest officer said.

When the other fishermen resisted the big cat's attempt to drag him to the forest, the tiger released him and returned to the jungle.

The other three fishermen started returning to the village but Mondal, who was grievously injured, died on the way, he added."

## **West Bengal: Fisherfolk demand social security and better policies at AIFFWF conference**

<https://www.newsclick.in/fisherfolk-demand-social-security-and-better-policies-aiffwf-conference>

"At the third national conference of the All India Fisherman and Allied Fish Workers Federation (AIFFWF) in Uluberia of Howrah district, fisherfolk demanded that the government improve the social security provisions for them and adopt a pisciculture-friendly policy. They also raised a proposal for the scrapping of the Sagarmala project, which, they asserted, will "spell doomsday for the entire fishing sector across the country".

Uma Sarkar from West Bengal emphasised the need for social security schemes to protect the livelihood of the fisherfolk. She also highlighted the importance of protecting the environment and forests – along with the depth of the various river channels in Sundarbans. "Protecting the mangroves should be a priority currently," she said as she presented her report on behalf of the West Bengal participants before the 189 delegates present at the conference.

The West Bengal delegates also called for an immediate ban on the international sea trade route that passes through the river channels of Sundarbans, which, they said, is causing severe damage to the islands. They reported that this has led to artificial high waves, while the oil spills – as

residuals in the channels – are affecting the fish population of the entire area as well. The pertinent question of giving identity cards to all the fishers of the state also came up in discussion.

The West Bengal delegates also demanded a ban on the entry of big capital into the cooperative sector. They also asked for a provision of loans at lower interest rates for the fishers – as were offered during the rule of the Left Front in the state. One of the demands also stated that the inland water bodies be leased to fishers' cooperatives only.

Sarkar, speaking at the conference, also appealed to the government to reduce land tax, which, she said, has increased manifold in the past few years. Then, the issue of ultra-modern foreign vessels entering the Indian coastline with permits was discussed at the conference and it was demanded that the permits of these vessels be cancelled.

The delegates from Telangana spoke about the laxity on the government's part in helping the fishers and the lack of seed distribution in the pisciculture sector. The delegates from Kerala highlighted how the Left government is trying to develop the sector amidst a detrimental central policy. The Tripura delegates complained that due to the lack of dredging, the fish catch is depleting at Rudra Sagar and the BJP government is "sitting idle over it".

Later, the outgoing general secretary of the organisation, K Hemalata, presented the politico-organisational report at the conference. She then spoke about the blue economy policy being proposed by the central government in the marine fishing sector. "It is nothing but a move to hand over the entire fishing sector and coastal areas to big corporates including those in the tourism and mining sectors. It aims to drive out the inhabitants of coastal areas and give these away to corporates for looting in the name of the development," she opined. The report was later accepted at the conference unanimously.

In the evening, a rally was organised at the Fuleshwar bus stand of Uluberia. Speaking at the rally, CITU general secretary Tapan Sen seconded the view that there is corporate aggression in the marine fishery sector as well as in the inland water bodies of the country. "The need of the hour is to build up a strong protest movement in the country for our demands. Though the fishery sector is a big foreign exchange generator in the country and accounts for thousands of crores of rupees, the state and central governments are making laws that are detrimental to the fishers who work in this sector. About eight crore fishers are in peril due to the policies of the Union government," he said."

### **West Bengal: Sunderban's clear and present danger**

<https://www.indiablooms.com/health-details/E/11518/sunderbans-clear-and-present-danger.html>

Every year tropical cyclones throw up new challenges to thousands of rural folks living in one of the richest but most fragile ecosystems on the planet, Sunderbans. Amid the destruction of the swamps by private fisheries, environmentalists say this is high time for the state administration to introduce a long-term participatory management in the deltaic belts of West Bengal. Soudhriti Bhabani reports from ground zero

For nearly five million inhabitants in the Sunderbans region, life has never been an easy affair as it revolves around battling high tides every day and cyclones with almost periodic regularity.

Formed by 56 riverine islands, the alluvial archipelago has been ravaged by four back to back tropical cyclones - Fani and Bulbul in May and November 2019 respectively, Amphan in May 2020 and Yaas in May 2021. And before all these, it was Aila that battered the UNESCO World Heritage Site in 2009.

Every time life came to a standstill for people living in the ecologically fragile Sunderbans.

Every time, the region either suffered severe damage owing to heavy cyclonic spells and breached embankments leading to ingress of salt water or by some man-made crisis - something that the policy makers were not really prepared for.

According to green watchdogs, the region is currently facing its worst challenge with hundreds of acres of mangrove swamps being destroyed for setting up private fisheries. Such activities are rampant in areas like Satjelia, Mollahkhali, Basanti, Kultoli, Sagar Island and Patharpratima where thousands of acres of mangrove land have been wiped off by private players in order to set up fishery units.

“If this goes on it would be really difficult to save Sundarbans – a home to the famous Royal Bengal Tiger and Gangetic dolphin. The administration needs to look into it immediately. It must involve the locals and sensitise them about the aftermath of such environmentally-atrocious act,” said veteran environmentalist and West Bengal's ex-chief conservator of forest Pranabesh Sanyal.

Even this year the region had a narrow escape from severe cyclonic storm ‘ASANI’, which was centering over West Central Bay of Bengal before it moved steadily towards northwest Bay of Bengal to inch closer to coastal Andhra Pradesh.

Sanyal said that a few attempts were foiled in Satjelia and Mollahkhali recently. He pointed out

that such illegal activities started taking place in Sunderbans in the last four-five months. The offenders not only destroyed large stretches of mangrove land but also erected small construction sites near Piyali Island at Patharpratima.

Sources in Sunderbans said that some NGOs are carrying out ground-level sensitization drives among villagers so that they realise the impending danger and put up a strong resistance against such ecologically damaging activities that are often taking place with political patronage.

It is true that in order to minimise damage caused by cyclonic storms, the district administration is putting important measures in place. The local administration has started conducting meetings, keeping in mind how to lower the damage. But the flip side is that the area itself is on the frontline of natural disasters.

Anil Mistry, a 55-year-old poacher-turned conservationist, said that people of Sunderbans have become more dependent on the state administration these days. He said that earlier villagers in the deltaic belts used to take active part in natural embankment protection and mangrove plantation.

“But the drive has gone for a toss in the last 10 years in West Bengal’s Sunderbans,” said Mistry who is also the principal field officer for Wildlife Protection Society of India in the Sundarbans. According to experts, the solution to the perennial problem lies in long-term planning, adopting strategies that will minimize the impact of climate change and other external factors.

Flooding of low-lying deltas, the retreat of shorelines, salinization and acidification of soils, and changes in the water table have posed serious concerns for the well-being of local populations as well as the diverse species thriving in the Sunderbans delta.

Located in Kolkata’s neighbouring North 24-Parganas and South 24-Parganas district, the Sundarbans has a vast area covering 4,262 sq km, including a mangrove cover of 2,125 sq km, in India alone. A larger portion lies in Bangladesh. The vast tract of forest and saltwater swamps is located at the lower part of the Ganges delta, extending 260-km along the Bay of Bengal from the Hooghly river estuary in India to the Meghna river estuary in Bangladesh.

To remember, there are over 1000 such World Heritage sites across 167 countries that are chosen, protected and maintained by UNESCO and the conservation programme is ratified by the 194 countries, making it one of the widest recognised international agreements.

The Sundarbans is one such heritage site which is struggling to survive and stay resilient against serious challenges to its existence."

## **West Bengal: Demand-supply gap turns fish dearer in Kolkata markets**

<https://timesofindia.indiatimes.com/city/kolkata/demand-supply-gap-turns-fish-dearer-in-city-mkts/articleshow/91583334.cms>

"A 61-day ban on fishing in the seas, at estuaries, and even in the river has dried up the supply line of fish across the city markets, pushing the prices through the ceiling. However, higher prices of fish are enticing fishermen to do fishing clandestinely, endangering the fish and casting a shadow of uncertainty on future fishing.

Prices of some fish varieties rose nearly 100% in a span of just 25 days. "The prices are expected to rise further as we have nearly a month to go to resume fishing," said Bijon Maity of West Bengal Fishermen's Association.

Fishing has been banned across rivers and in the seas and estuaries from April 15 to June 14 as it is the spawning period for fish. "This is the time when juvenile fish comes out of eggs and rapidly grow in size. Any attempt of fishing jeopardizes the entire process of spawning. This is how we lost Hilsa in Indian estuaries," said Jayanta Kumar Pradhan, assistant director of fisheries.

Fisheries department officers urged people to consume less fish during this period of time to have fish round the year. "This time, we have taken a strong stance. If anyone is caught fishing, the boat will be seized and licence will be revoked," added Pradhan.

Maity said, "We have a lot to learn from our neighbour Bangladesh. The ban means a ban. There will be no fishing at all. Both government surveillance and stringent punishment against an offender act as a very good deterrent against catching juvenile fish. This is how Bangladesh still has Hilsa at the estuaries of Padma, but we don't have it at the estuaries of the Ganges."

"We did not know about the ban. Thus we kept buying fish, paying through our nose. If we knew about the ban, we could have looked for alternatives of fish. But it is not only fish, the prices of all major protein sources rose sharply. We are thus consuming more eggs. But you know without fish, our platter tastes insipid," said Sayantan Ghosh, a librarian.

"The hilsa coming from Diamond Harbour is of 700 grams to 1 kg, costing Rs 1,000 to 1,700 per kg. Prices of other fish have also risen significantly in the last 15-20 days. Because of real estate developments, we have already lost a very large number of ponds. Thus the supply of fish from the ponds fails to plug the critical gap between demand and supply" said Amar Das, a fish vendor at Lake Market."

## **Odisha and West Bengal: Asani intensifies into severe cyclonic storm**

<https://indianexpress.com/article/india/cyclone-asani-live-odisha-bay-of-bengal-weather-rainfall-7906130/>

"Cyclone Asani, formed over the southeast Bay of Bengal, further intensified into a severe cyclonic storm on Sunday evening as it moved northwestwards in the direction of north Andhra Pradesh-Odisha coasts, the Met department said. The severe cyclone, on reaching westcentral and adjoining northwest Bay of Bengal off north Andhra Pradesh-Odisha coasts on Tuesday, is very likely to recurve north-northeast wards and move towards northwest Bay of Bengal off Odisha coast, it said.

Earlier, the India Meteorological Department (IMD) on Sunday issued warning for fishermen venturing into the Bay of Bengal and Andaman Sea. The met department in its warning said, "Fishermen are advised not to venture into East-central and South-east Bay of Bengal and adjoining Andaman Sea on May 8. Meanwhile, fishermen were also advised not to venture into central parts of Bay of Bengal on May 9 and 10 and over Northwest Bay of Bengal from May 10-12.

Cyclone Asani, formed over the southeast Bay of Bengal, further intensified into a severe cyclonic storm on Sunday evening as it moved northwestwards in the direction of north Andhra Pradesh-Odisha coasts, the Met department said. The severe cyclone, on reaching westcentral and adjoining northwest Bay of Bengal off north Andhra Pradesh-Odisha coasts on Tuesday, is very likely to recurve north-northeast wards and move towards northwest Bay of Bengal off Odisha coast, it said.

The severe cyclonic storm is very likely to lose some steam thereafter and turn into a cyclonic storm on Wednesday and further into a deep depression on Thursday, the Met department said in its forecast of Asani's track and intensity. Stating that the system will not make landfall either in Odisha or Andhra Pradesh, India Meteorological Department (IMD) Director-General Mrutunjay Mahapatra said the cyclone will move parallel to the east coast and cause rainfall from Tuesday evening. Odisha's Special Relief Commissioner (SRC) PK Jena said the state government has made adequate arrangement for rescue operations.

### **West Bengal: Fisherfolk face eviction threats, says AIIFFWF**

<https://www.newsclick.in/fisherfolk-face- eviction-threats-west-bengal-says-aiffwf>

"Inland water and marine fisherfolk working in the coastal areas of West Bengal are facing eviction threats due to the ""detrimental policies"" of the central and state governments, observed the recently concluded conference of the All India Fishers and Fisheries Workers'

Federation's (AIFFWF) state unit. It also stated that the "hooligans" of the ruling Trinamool Congress (TMC) are taking over the cooperatives of the fisherfolk allegedly by force and inviting big companies to fish in the inland water bodies. As a result, the livelihood of the 13.65 lakh-strong fisherfolk community in the state has been endangered.

The AIFFWF, in its organisational report, also highlighted the eviction of 2,250 families of fisherfolk, involved in small-scale fishing, from a lake spread over 10,187 acres. The report also talked about TMC "hooligans" forcibly taking over cooperatives such as Choto Pares and Boro Pares of the Bidhannagar area. Cooperatives of fisherfolk that were formed when the left front was governing the state have been shut by the TMC with the help of policies of the state government, the report said.

A total of 1,271 such fisherfolk cooperatives, 200 communes, 3,600 hilly streams fisherfolk units, 131 marine fisherfolk communities, 41 salt fisheries units, and fisherman communities living in north Bengal's Kajipara lake, Jalpaiguri, Siliguri, and Cooch Behar have been evicted from their workplaces, it stated. More than 600 fisherfolk cooperatives have become redundant and stopped working as a result of this and also due to the detrimental law and order situation in the state, as per the AIFFWF.

“The Centre is harming the ecology of the Sundarbans and hampering fishing in the area by allowing passage to ships. Blue Revolution is meant for big corporate entities. We will not benefit from it,” said Debasish Barman of the Hingalgunj Fisherman Community and secretary of the West Bengal unit of the AIFFWF while speaking to NewsClick on the sidelines of the conference. “The size of the trawlers fixed by the Central government is meant for big companies. Besides, small-scale fishers cannot bear the huge cost of increasing the size of the present trawlers to 20 feet,” he added.

Barman added that restricting small-scale fishers to 10 nautical miles down from nautical miles is also hampering fishing in the country. The conference also discussed the issue of big Indonesian trawlers allowed to fish in Indian waters under the ASEAN Free Trade Agreement using modern solar searchlights to locate and net huge amounts of fish.

A total of 167 delegates from across the state deliberated on organisational matters and problems faced by the fisherfolk in the state. Before 2011, West Bengal used to be a topper among the states for fish production, but now it is producing only 4,857 tonnes daily, though the daily requirement of the state is 4,940 tonnes, said the report. To fulfil the demand, fish is being imported from Andhra Pradesh and Chattisgarh. In 2005, an attempt was made by the Left front government to start big carp fish cultivation in Nayachar and Captain Bheri region, but it has been “looted” in the subsequent years, as per the report.

Along with this, the Centre's 'Blue Revolution' project is also hampering both inland and marine fishers in the state, AIFFWF said during the conference. Blue Revolution focuses mainly on increasing fish production and productivity from aquaculture and fisheries resources – both inland and marine. There are about 3 lakh fisherfolk in the Sundarbans and another 1.5 million residents who are dependent on fishing for a livelihood.

The conference was inaugurated by AIKS secretary of the West Bengal unit, Amal Haldar. In his speech, Haldar appealed to the people to stand up to and protest against the designs of the central and state governments, who “want to take over the rights of pisciculturalists on water”. Echoing his view, Tushar Ghosh, all-India president of the AIFFWF, emphasised the importance of resistance.

A number of proposals were presented during the conference for attendees' consideration: against imperialist aggression, against constant inflation, for building a strong movement of pisciculturalists in the country, for protection of Sundarbans and adequate relief measures in the cyclone-prone areas, against communalism, for a heightened campaign against global warming, and against filling up of inland water bodies."

### **West Bengal: A look at Darjeeling's cold water carp farming system**

<https://thefishsite.com/articles/a-look-at-darjeelings-cold-water-carp-farming-system-india>

"Farming in flow-through concrete ponds known as jhora, which is practised in the hills of West Bengal, is not only helping locals to get healthy diet of food but has been also supplementing their families' incomes. Jeet Bahadur Subba, a retired government employee, resides in Riang, a remote hamlet located on the hills of Kalimpong district of West Bengal.

The 61-year-old often finds it difficult to procure food items, especially vegetables and fruits, from the market because of the transportation problems in the hilly terrain, coupled with his financial constraints. But still he ensures that his family gets enough intake of protein.

He gives credit to a pond, locally called a jhora, located inside the boundary of his house for providing a regular supply of fish to his family.

“We live in a terrain which is far away from the city and surrounded by hills. The local markets do not always have an ample supply of fruits and vegetables, but jhoras compensate the deficiency by providing us with a regular supply of fish,” he says. “The size of my cemented pond is around 43 ft by 33ft with a 3.5 ft depth of water. I had released around 1,000 fingerlings, mostly common carp and grass carp, around eight months ago. We fed them with rice bran, organic manure and soya beans.

“Fifty died due to extreme cold conditions in the hills last year. The rest survived and have attained a size of around half a kilo. We catch them as per our need. The fish tastes delicious and are also sold to neighbours who make advance booking for it. It also helps me to generate some extra income.”

Jeet is not alone. Over 6,000 locals are involved in jhora fish farming in the hills of Darjeeling and nearby Kalimpong – largely for subsistence purposes, while a small portion are offered for sale. Jhora fish farming implies fish culture in artificial tanks fed by perennial spring water flowing from the mountains. It’s a unique form of cold water fish farming, which – in India – only takes place in the snow-capped hills of Darjeeling and Kalimpong, regions that attract tourists from across the globe.

“Under this method, we [farmers] select a small patch of land, normally outside the house and construct a tank there. The tanks vary in size, depending upon the availability of the land. The water is supplied to the tank with the help of long pipes that are connected with the hilly streams flowing a few metres away from the tanks,” explains Sarad Rai, a jhora fish farmer in Kalimpong.

“The water flows uninterrupted around the clock, which helps to maintain the oxygen level. Besides, a small outlet is also constructed in the tank to ensure that the surplus water gets released. The released water, which contains fish waste, offers rich organic feed to the agro-farming. The fish farming is done throughout the year and the catch is used mostly for self-consumption,” he adds.

Senior fisheries department officials say that the tank size depends upon the terrain, “The region is full of hills and uneven land which makes it difficult to build large tanks. We provide them with fingerlings, nets and feed once in year,” said Sarthak Pradhan, fishery extension officer in Darjeeling district.

“We previously gave Rs 8,000-10,000 INR (\$105-\$130) subsidies to the farmers for the construction of the tanks, but no such subsidy has been given by the government for the past two years,” he adds. Given the simplicity of the system it might seem strange that it is only used in Darjeeling hills, but there are a number of reasons why it’s not more widespread. Partha Pratim Das, assistant director of fisheries for West Bengal, explains that the hills in north Bengal are still pristine and pollution-free in several areas, which is not the case with other parts of India.

“We are lucky to have a rich forest in north Bengal that ensures the steady supply of water across most of the year. People are nature worshippers and worship local water sources and encircle them with a boundary wall to prevent them from getting polluted. The water is also rich in minerals which help the growth of the fish. The non-contaminated water supply also minimises

the spread of diseases,” Das explains. “The average size of the tanks is 23 ft x 10 ft and can go up to 40 ft x 15 ft and even beyond in some cases, depending upon the nature of the land. On average each jhora is stocked with 1,000 fish.”

### **The roots of jhora farming**

Jhora fish culture started in the early 1980s, when the state government intervened and built concrete ponds for the villagers to boost fish farming and ensure healthy diets for them.

“We have been doing fish farming for the past several years but the method was different. We used to excavate a small earthen pond near the stream and release some fingerlings there. The stream ensured the 24/7 availability of water. But the government formalized the system and built a concrete tanks for us in 1982 to attract more people to farming,” says Pawan Bhutiya, 65, a farmer in Kalimpong district.

“The government started fish culture by setting up nine small demonstration units to study the growth of fishes in high altitudes. Economically viable species that thrive well in these conditions were selected. The results were encouraging. Around 100-120 kg of table fish was harvested from each jhora pond after nine months. The production encouraged the administration to start fish farming on a large scale in the hills and locals were provided with 50 percent subsidy assistance for pond construction.”

At present, around 5,000 jhoras (tanks) are present in the Kalimpong and Darjeeling hills....

### **West Bengal: Marine fish catch from north Bay of Bengal region on decline, state faces Hilsa crisis**

<http://www.millenniumpost.in/kolkata/marine-fish-catch-from-north-bay-of-bengal-region-on-decline-state-faces-hilsa-crisis-475702>

"There will be no wonder if fish loving Bengalis are deprived of their favourite hilsa recipes in a few years from now. Marine fish catch from the North Bay of Bengal region has been sharply declining with the state facing scanty hilsa catch as the unscientific fishing destroys natural habitat. Experts feel that people in the state may see a further dip in marine fish production in the next few years. Application of destructive fishing gears that too in excess of sustainable limits is majorly contributing towards a persistent decline.

The revelations come at a time when the Bengal government is implementing a ban on marine fishing for two months to control fishing. It has already started from April 15 and will continue till May 31. Data from the Ministry of Fisheries show that Bengal reported around 1.63 lakh tonnes marine fish catch in 2019-20 which remained exactly the same in the previous financial year 2018-19. In 2017-18, Bengal registered a catch of around 1.85 lakh tonnes. In 2019-20, the highest marine catches were reported by Gujarat 7.01 lakh tonnes, followed by Tamil Nadu 5.83 lakh tonnes, Andhra Pradesh 5.64 lakh tonnes, West Bengal 1.63 and Odisha 1.58, Central government data said.

A study states that the number of boats engaged in fishing increased by more than 25 per cent while hilsa catch dipped by more than 13 per cent. The number of boats operating in north Bay of Bengal is much beyond the sustainable limit. State fisheries department has, however, been offering alternative employment opportunities and offering food security under Khadya Sathi especially during the ban period so that they don't go the sea to catch fishes. Debasis Shyamal, Secretary of Dakshin Banga Matsyajibi Forum said: "Both the Centre and the state government should take an initiative to extend the ban on fishing from 2 to 3 months strictly for huge mechanised boats.

The ban should be strictly maintained this time of the year." Pradip Chatterjee, Secretary, National Fish Workers' Forum said decline in the prediction of hilsa on the Indian side of the Bay of Bengal has been a rising concern in the recent past. The Hilsa population is being destroyed by over-exploitation, threatening the livelihood of over 26,000 fishermen. "Big mechanised trawlers with a capacity of around 300-500 horsepower hovering through the regions and bottom trawling are destroying the natural habitat. Bottom trawling is prohibited up to 12 nautical miles from coastline but most of them allegedly start trawling just 1 km from the coastline," he added."

**West Bengal: Is expansion of aquaculture in the Sundarbans an ecological threat or a pathway to sustainable development?**

<https://india.mongabay.com/2022/04/commentary-is-expansion-of-aquaculture-in-the-indian-sundarbans-an-ecological-threat-or-a-pathway-to-sustainable-development/>

"Aquaculture is a rapidly expanding sector globally, with India being the second-largest producer of aquaculture resources and contributing approximately 6.3% to global aquaculture production. The state of West Bengal, with its long, serrated coastline, has a vast potential for aquaculture. It is the largest producer of tiger prawns in the country, most of which are cultured in the rapidly expanding aquaculture areas of the Sundarbans Biosphere Reserve (SBR).

Is the expansion of aquaculture, in response to growing market demand and profitability, a threat to this critically vulnerable coastal area? Or is it a means for sustainable development of

the local communities struggling to adapt to accelerating climate change impacts?

The SBR is a unique mangrove forest comprising a network of mudflats and low-lying islands at the confluence of the populous Ganges river delta in West Bengal, India, with the royal Bengal tiger as its flagship species. It is a UNESCO World Heritage Site, spanning 9,630 sq. kms. across core and buffer forest areas and a transition zone. As many as 4.43 million people inhabit the transition zone (5,367 sq. kms. areas) and traditionally practice rainfed agriculture, artisanal fishing and forest collection for their subsistence.

The rapid expansion of aquaculture in the Indian Sundarbans is bringing huge profits to some while short-changing the local communities of their right to a sustainable future.

Salinisation is not the foremost driver of rapid aquaculture expansion in the Sundarbans Biosphere Reserve.

In this commentary, Shaberi Das and Sugata Hazra discuss the economic incentives that lead to the conversion of agriculture to aquaculture in the Indian Sundarbans.

The views in this commentary are that of the authors.

Large-scale clearance of mangrove areas in the 19th century transformed the Sundarbans into a settlement for revenue generation by the colonial regime. Freshwater flow to the region diminished with time so that river water, and even the groundwater in many places, is brackish-to-saline.

While some farmers traditionally practiced freshwater aquaculture in backyard ponds, brackish water aquaculture (BWA) proliferated low-lying areas adjacent to river banks and creeks when globalisation brought the international demand for prawns to the doorstep of the mangrove forest.

A range of socioeconomic and environmental drivers, supported by a significant lack of vision for sustainable development, has led to the rapid growth of BWA at the expense of over 1,000 hectares of mangrove forest, 2,322 hectares of eco-sensitive mudflats and 2,4000 hectares of multi-crop agricultural land, defying coastal regulations.

While some part of the land conversion can be attributed to the terrible legacy of cyclone Aila (2009), which rendered agricultural lands in some cyclone-affected areas unfit for cultivation for several years, salinisation is not the foremost driver of rapid aquaculture expansion in the SBR.

The promise of higher profitability from commercial aquaculture enticed farmers to illegally convert their agricultural fields to aqua farms.

In the last few decades, erratic monsoon alongside temperature rise on land and sea, frequent cyclones and floods, a high rate of coastal erosion, and the rising cost of fertilisers and farming, have gradually reduced agricultural productivity and driven more and more farmers to adapt by shifting to aquaculture...."

**West Bengal: Villagers in Malda look to corner dry fish trade in Northeast, spread net wider for employment**

<https://www.news18.com/news/india/villagers-in-bengals-malda-look-to-corner-dry-fish-trade-in-northeast-spreading-net-wider-for-employment-5015011.html>

Traders of Sattari village in West Bengal's Malda district are looking at a new direction of employment by making dry fish and selling it in several states of north-eastern India. The business has started taking off here with initially three to four traders from the village initiating it

Dry fish is popular in the states of Assam, Sikkim, Nagaland, Manipur, and Mizoram. There is also a demand for it among the residents of the Darjeeling, Terai, and Dooars regions of West Bengal. While people from the hills do seek dry fish, supply constraints are an impediment. So people from these parts have to depend on sea fish

Until recently, dry fish was largely sent to the hills from other parts of West Bengal. Over the last few years, some traders in the Malda district have started entering the trade. The fish are brought from the coastal areas of the state, dried in Malda, and then supplied to the hills. Every 15 days about 20-25 traders from here send about two to three quintals of dry fish to the Northeast. According to the traders, marine fish is mainly procured from Digha in Bengal and Paradeep in Odisha. It is then brought to Malda.

A special hut for making dry fish has been prepared in Sattari village by the traders. First, the fish are cleaned in water. They are cured with salt and then allowed to dry in the sun in the open air. A special fish-drying platform has been set up across a few acres of land in the village. The loft is made of bamboo

"The fish is exported to north-eastern India mostly. These dry fish are sent to hilly areas such as Sikkim, Manipur, Assam, and Tripura. Most of the marine fish are brought in from Paradeep and Digha," said Jayanta Choudhury, who is in the dry fish business. It takes about a week to make dry fish. These are then cleaned and sent by cars to their destinations. Apart from the traders, many families of Sattari village and nearby areas have also benefitted from the business

We have been working here for the last five years. The dry fish from here is transported to north-eastern India. The prices vary," said Biplab Mondal, one of the workers. At one time, most of the villagers here worked as labourers. Now, on average, more than a hundred workers are

involved in the processing of dry fish every day. Unloading the fish from cars, cleaning them, drying the fish, etc, are done regularly by local workers.

### **West Bengal: Fisherman injured in tiger attack in the Sundarbans**

<https://unb.com.bd/category/Bangladesh/fisherman-injured-in-tiger-attack-in-the-sundarbans/91299>

"A fisherman was injured by a Royal Bengal Tiger on the Bhola river in Chandpai Range of the Sundarbans on Sunday morning. Abu Saleh Akon, 45, son of Amir Ali of Bajikarkhand village in Mongla upazila of Bagerhat district, survived the attack. He has been making his living by fishing in the Sundarbans for almost 30 years.

He is currently undergoing treatment at Mongla Upazila Health Complex. According to family sources, Abu Saleh and Md Hanif went to catch fish and crabs in the rivers and canals of the Sundarbans when a tiger attacked Abu Saleh while he was netting in Amurbunia area of Bhola river around 8am. At one point, Abu Saleh jumped into the river and the tiger left him and returned to the forest. Later, Hanif rescued him and rushed him to the Health Complex.

Faisal Hossain Swarna, a doctor at the Health Complex, said there are several marks created by tiger's paws and teeth on the fisherman's body. "But he is out of danger now."

However, Jahangir Alam, Jiudhara station officer of Chandpai range in the eastern part of the Sundarbans, said that Abu Saleh had entered the forest without permission from the Forest Department.

"It was not possible for the Forest Department to provide any assistance to the fisherman as he entered the forest without permission." Muhammad Belayet Hossain, divisional forest officer (DFO) of the Eastern Division of the Sundarbans, said the matter is being investigated.

At least 50 fishermen and beekeepers from Sharankhola, Morelganj and Mongla upazilas adjacent to the Sundarbans in Bagerhat got injured in tiger attacks in 20 years. Some have lost their eyes in these attacks."

### **West Bengal: Bengal to take up fish farming using biofloc tech in 3 districts**

<http://www.millenniumpost.in/kolkata/bengal-to-take-up-fish-farming-using-biofloc-tech-in-3-districts-474333>

"The state Fisheries department will take up a pilot project on fish farming through biofloc technology in three districts of Bengal to encourage more rural people into pisciculture. State Fisheries minister Akhil Giri said that Bankura, West Midnapore and North Dinajpur have been

identified for implementation of several such projects through biofloc. The department will offer training to the interested fish farmers so that they can pass on their knowledge among others. "Biofloc is a technology using which one can produce fishes significantly in large quantities (in a small volume of water) like a tank as compared to the traditional form of aquaculture in large ponds. It is easy to monitor the fish movement, their behaviour and abnormalities as they will remain within a tank which in turn will facilitate taking the corrective measures immediately," Giri said.

West Bengal Comprehensive Area Development Corporation (CADC) under the aegis of the Panchayats and Rural Development (P&RD) department has already begun fish cultivation using this technology by involving the SHGs (Self Help Group) and has proved to be an excellent source of livelihood support. The technique is already being practised at Tamluk in East Midnapore, Ayodha Hills in Purulia and some semi-arid zones in Murshidabad, Jhargram and Birbhum very successfully. Probiotics and molluscs are used to eliminate the chances of food particles and excreta of the fishes polluting the water. These components produce plankton and prevent the production of ammonium nitrate which is toxic to the fish. An aerator is used to add oxygen to the water.

A wide variety of fishes can be cultivated through this technology like Koi, Magur, Singi, Telapiya, Pabda and even prawn. The minister in a high-level meeting with senior officials of his department on Tuesday with the district magistrates and other concerned officials took stock of the status of fishermen's credit card. "The cooperative banks have come forward in providing loans under the Matsyajibi credit card, but the nationalised banks have been reluctant. We will be taking up the matter with the bank authorities," a senior official of the department said. The department has decided to form 13 cooperatives by roping in fish farmers at Nayachar to cultivate fish to augment its production. Giri has directed his officials to start training under Banga Matsya Yojana in all districts."

### **West Bengal: As fuel rates soar, fish prices jump in Kolkata**

<https://www.indiatoday.in/cities/kolkata/story/fish-prices-jump-in-kolkata-by-50-paise-being-sold-at-higher-rates-1935000-2022-04-08>

"With the rise in the rates of fuel across the country, fish prices too increased in Kolkata. The prices of fruit, vegetables and meat have been increasing.

NonBreakingSpaceOverride, 'Hoefler Text', Garamond, 'Times New Roman', serif; letter-spacing: normal, Households in the city are being forced to cut down the food budget as the prices of food essentials have jumped in the market, including the rates of fish. Fish prices remained on the higher side across the retail markets of Kolkata on Thursday. The price of fish

such as Katla and Rahu has increased by Rs 50 per Kg. Meanwhile, in Shyambazar Market where Katla Fish was being sold at Rs 180-200 last week, it has now jumped to Rs 250 per Kg.

Similarly, the Pabda fish retailed at Rs 360 a kg yesterday, while the Bhetki fish retailed at 500 per kg, which was sold at Rs 400 last week. Talking to India today, one of the businessmen in the market named Shyambazar Raju Rah said that the price of every fish has been increased by Rs 50 as most of them come from the markets outside the borders. Somnath Bhattacharya, a buyer who was looking for some local fish at a cheap rate said, ""I have stopped buying fish every day now. In my family, we are having fish once or twice a week.""

Tackling the hike on consumer goods across the state, yesterday, Mamata Banerjee announced that the West Bengal government will sell fruits and vegetables at subsidized rates through its 332 'Sufal Bangla' retail outlets. On Thursday announcing measures aimed at tackling the hike in prices of consumer goods, Mamata Banerjee announced that the West Bengal government will sell fruits and vegetables at subsidized rates through its 332 'Sufal Bangla' retail outlets."

### **West Bengal: Fish production touches 17.95 metric tonne in 2020-21**

<http://www.millenniumpost.in/kolkata/fish-production-touches-1795-metric-tonne-in-2020-21-spl-training-for-fishermen-starts-473395>

"The state government is starting training of the fishermen with the purpose of augmenting the fish production in the state. The necessary infrastructure for starting this training scheme christened as 'Banga Matsya Yojana' has already started across the state. A training centre has been set up in each of the districts in which three months training will be provided. The state government will provide assistance to the trained fishermen so that they can start cultivation. ""We are in the process of finalizing the scheme with inputs from all stakeholders so that the production of fish as well as the earning of the fishermen increase.

The module for the programme is likely to be finalised in a virtual meeting which will be held on April 12,"" Akhil Giri, state Fisheries minister said. The minister chaired a meeting on Monday with the fishermens' association across the state and briefed them about the plan of the Yojana in presence of senior officials of the department. Suggestions have been sought from the association

on how to make the scheme more lucrative for the fishermen.

In the year 2011-12, the total fish production in the state was 14.72 lakh metric tonne which has gone up to 17.95 metric tonne in the financial year 2020-21. The department officials have already taken up an exhaustive campaign across the state for roping in fishermen across the state to be part of the Yojana."

### **West Bengal: Bangladeshi ship stuck in fishing net**

<https://timesofindia.indiatimes.com/city/kolkata/bangla-ship-stuck-in-fishing-net/articleshow/90553028.cms>

"A Bangladeshi vessel, which allegedly strayed into Indian waters early on Wednesday, was stuck in the Hooghly near Ghoramara Island till late at night as the ship's propeller tore into expensive fishing net and got entangled in it. Even as angry fishermen stationed their boats around the ship, demanding compensation, a Kolkata Port Trust team reached the spot to free the propeller.

"Vessels often deviate from their navigation channels and wreak havoc on our livelihood. We demanded a compensation of Rs 70,000," said Milan Das, general secretary of Dakshin Banga Matsyajibi Forum. The ship, MV Sea Pride, was carrying fly ash from Budge Budge to Bangladesh. Sundarbans SP Bhaskar Mukherjee said, "Rolling waves and strong winds might have pushed the vessel out of its route." The vessel company was contemplating to compensate for the net, police said.

Additional director of fisheries (marine) Jayanta Kumar Pradhan said, "We alerted the police. It is a sensitive issue, involving a vessel of foreign country. Vessels generally don't deviate channel. Fishermen often get into the vessels' routes."

### **West Bengal: Forgotten people: Sundarbans' climate refugees forced to move again**

<https://www.newsclick.in/Forgotten-People-Sundarbans-Climate-Refugees-Forced-Move->

"For over a year, Gangadhar Bor has planned his life around the rising tide. Each full moon, he moves from his tin-roofed, one-room brick home to a makeshift hut of bamboo and tarpaulin raised a few meters above the ground. With the high tide, the Muri Ganga River breaches the embankments that are supposed to protect Bor's village of Bankimnagar, on the coast of Sagar Island. Water surges in a hundred meters, and villagers must wait for it to recede before they can return home.

"It is now a way of life," Bor says. Sagar Island lies at the western end of the Sundarbans, where

the Ganges, Brahmaputra and Meghna rivers converge, and smaller tributaries lace the world's largest mangrove forest. Covering a total area of 40,000 square kilometers (15,444 square miles), the delta stretches across Bangladesh in the east and the Indian state of West Bengal in the west.

Sagar is the largest of the delta's Indian islands, with a population of more than 200,000 and growing. As rising tides and numerous storms make smaller neighboring islands virtually uninhabitable, it has become home to many climate refugees, like 65-year-old Bor. Each full moon, Bor, 65, has to move from his house to a makeshift hut on stilts as water floods his home

But Sagar Island is itself now under threat. Over the last two decades, the sea level in the delta has risen by 3 centimeters (1.2 inches) a year on average. That's much faster than elsewhere in the world. Sagar has already lost around 50 square kilometers of land — around a sixth of its former area — to coastal erosion.

Bor fled to Sagar from Lohachara Island in the late 1980s as the delta waters encroached on his home. It was a wrenching move. "We wanted to stay back as we had a steady earning catching fish," he recalls. "But every other year we had to move in a little and build a new house as the island shrunk a little more. Finally, after surviving many storms and floods, we gave up." Lohachara was completely submerged in 1996. Now he and others in his community living on the southern edge of the island are facing the same problem that forced them to leave their previous home.

When he first arrived on Sagar, Bor says the river would sometimes breach its embankment, but monthly floods on the high tide are a new experience. While homes can be mopped out each month, the farmland the community relies on is not as easily restored. Bor's land is now permanently awash with the river's saline water. But just two years ago, he was still growing betel, a stimulant popular in south Asia, on a two-acre plot behind his brick house. In that time, two major cyclones have pushed the Sundarbans deeper into crisis.

In 2020, cyclone Amphan destroyed about a quarter of the delta's Indian mangrove forest. Mangroves are a natural bulwark against coastal erosion and rough water. Amphan, and cyclone Yaas, which hit the Sundarbans the following year, also damaged the brick and earth embankments that had protected many parts of the island for over three decades. Sundarbans is the largest mangrove forest in the world and is home to unique wildlife, including tigers. The mangroves provide a buffer against storms

Sunil Jana, a member of the 'panchayat', an elected village governance body, says repairs have begun on 200 meters of damaged embankment in Bankimnagar. But work is slow. "The entry of saline water has to be stopped first for any improvement of our situation, and for that we need a

strong embankment,"" says Jana.

Apart from the immediate repair work, the West Bengal state government has approved another comprehensive plan for a new ""circuit"" embankment consisting of two layers of dikes and mangroves for particularly vulnerable sides of the islands. However, there is no official timescale for the project, and the plan itself estimates that building it could take 10 years.

Those living on water's edge don't have that kind of time. Should another cyclone hit before the circuit embankment is ready, around a thousand people could lose their homes, says Sugata Hazra, a professor at the School of Oceanographic Studies at Jadavpur University in Kolkata. Village council member Sunil Jana says more needs to be done to repair the embankments protecting the village from water surges

Life in the Indian Sundarbans, where some 43% live below the poverty line is already tough. Most survive from subsistence agriculture, as well as fishing and honey collection. Drove of young men and women have had to leave Sagar for Kolkata — the nearest city — or for states like Kerala and Andhra Pradesh over 1,000 kilometers away. There they face a precarious existence as daily wage laborers and contract workers at construction sites and factories.

Many of those still here want to leave, yet in contrast to the relocation programs that brought them to Sagar in the 1980s and 1990s, there is no sign of any government assistance to make this happen.

Mohan Kumar Bera, a social scientist at the Birla Institute of Technology and Science, says the Indian government must come up with a coordinated plan to help people whose homes are in vulnerable zones to relocate. This also needs to be coupled with means and training for alternative employment to adapt to life on an island where traditional agricultural livelihoods are becoming impossible.

"Unaided migration in the face of a crisis leaves the people many times more vulnerable than when they move in a group and with some kind of social support,"" he says. ""We need forward-looking policies on cluster resettlement or training for alternate modes of employment so that they are less dependent on the land.""

Yaas Bishnupada Bhunia in his 70s points at an embankment. He says he's seen the water come ever closer over the course of his life. Bor says he would move again if he could. But he isn't hopeful of receiving the support he would need to build a new life. ""I really don't see any help coming. We are a forgotten people,"" he laments.

For others, the prospect of fleeing a second time is more than they can countenance. Uttam Dolui, aged 55, arrived on Sagar from the inundated island of Ghoramara 20 years ago. Dolui explains that when he first moved, they had little food, and no work because people were suspicious of refugees. ""They would even not allow us to visit their homes,"" he says. ""Things have changed here now. But I never want to go through that again.""

Meanwhile, those displaced from other parts of the delta keep arriving in Sagar. Before cyclone Yaas, the government temporarily evacuated a few thousand people from neighboring islands. Many have since gone back to their homes, and some have moved on to mainland cities in search of work. Others remain in limbo in Sagar, uncertain of what the future holds."

### **West Bengal: The tiger widows conserving the mangrove forest where their husbands died**

<https://atmos.earth/tiger-widows-india-sundarbans-mangroves-climate/>

Geeta Mridha, a soft-spoken woman, points at the stretch of land beyond the Gosaba River to India's Sundarbans, the world's largest contiguous mangrove forest. "We gathered the seeds of Sundari trees there," she said. "Are there tigers there?" I asked. "There are tigers everywhere in the Sundarbans," she laughed.

It's a windy February day, but at least it's not summer. Mridha is outside with about 12 other women who have finished their housework of cooking for their family. It's now time for them to work on the Sundari plants, the most common mangrove tree species in the Sundarbans of India and Bangladesh. It's also a species that makes up an ecosystem that's endangered and rapidly declining.

This group of women are trying to reverse that. Mridha and I stood on a newly constructed road on Gosaba Island that marks where civilization ends and where the Sundarban jungles begin. On the other side, the women work to clear the grass at the base of the Sundari plants under Mridha's supervision—labor that is quite tiring in the heat. These women are tiger widows. Mridha is one of them.

Colloquially known as byagro bidhoba in Bengali, the tiger widows have all lost their husbands in tiger attacks. Many were left without any income after their husbands were killed. These women are now making money protecting the very forests that took away their husbands forever. When a tiger killed Mridha's husband in 2012, she found herself completely helpless. She was left with two young children and no way to care for them—until she found this job. "You won't find a home in the Sundarbans where there isn't a victim of a tiger attack."

India holds less than a quarter of the world's tiger habitat, yet it has 70% of the world's wild tigers—or almost 3,000 animals, per the latest tiger estimate in 2018. Yet while millions are

spent to protect tigers, the Sundari tree perishes in silence, unnoticed and unrecognized. But tiger conservation comes with its own problems. Tigers often seek food from human settlements, and it is not uncommon for them to kill livestock, as well as humans. Men are often killed when they venture into the forest to catch fish and crabs or gather honey and wood because agriculture and fishing are some of the main occupations in the Sundarbans. From 2015 to 2018, tigers killed an average of 34 people in India. “You won’t find a home in the Sundarbans where there isn’t a victim of a tiger attack,” said Pushpa Mondal, another tiger widow.

The Sundarbans cuts across Bangladesh and the eastern state of West Bengal, India. The ecosystem is powered by an abundance of mangroves: the Sundari trees. Overharvesting, increase in water salinity, erosion, coastal expansion, and disease are all threatening the Sundari tree’s future. Top-dying disease has been especially devastating, killing 15% of the trees since the 1980s. The disease starts to kill the trees from the top (hence the name) before engorging the tree’s stems as it makes its way down, rotting the plant.

Mangroves are natural ecological barriers that protect coastal settlements from storm surges and slow the deterioration of the intertidal zone. West Bengal’s frequent cyclones could have more severely caused loss of human lives and livelihood if not for the Sundarbans. The species’ complex root systems protect the earthen embankment from the shock of rising waves. The Sundari tree is also widely used in traditional folk medicine. “The fish workers in Sundarbans were afflicted by three things: the high salinity of water due to water pollution; global warming, which hindered the growth of fishes in the area; and frequent tiger attacks,” said Pradip Chatterjee, the president of Dakshin Banga Matsyajibi Forum (DMF), a collective of small-scale fish workers in West Bengal.

Locals and non-governmental organizations estimate at least 3,000 women have been widowed as a result of tiger attacks in the Sundarbans since the 1980s. Oftentimes, their husbands were the sole breadwinners in their families, so their deaths lead to the ruin and poverty of their wives and children. But that shouldn’t be the case. The tiger widows are entitled to compensation from the West Bengal government’s forest and fisheries departments, as well as the state’s insurance. However, the money comes with many conditions, Chatterjee said....

### **West Bengal: Illegal shrimp farms are destroying the coastline**

<https://www.thequint.com/climate-change/illegal-shrimp-farms-destroying-the-fragile-coastline-mamata-banerjee-west-bengal>

"That shrimp on your plate comes at a high ecological cost. In Mamata Banerjee’s West Bengal, coastal zone regulation laws are being overlooked to allow thousands of aquaculture clusters to function with impunity. Prime agricultural land is being diverted to illegal shrimp farms. This

reporter travelled extensively along the coast of West Bengal to track the evidence with what satellite images were showing.

In East Medinipur for instance satellite images show that in just a decade, more than 1600 hectares of fertile land has been diverted, (that's the equivalent of 50 salt lake stadiums) in just 12 clusters on the coast. But the numbers are obviously much bigger. As per a recently published report "National Wetland Decadal Change Atlas" by Space Applications Centre (SAC), ISRO, approximate area of aquaculture in west Bengal is 24000 hectares, which means a land use change of almost 6600 hectare area has been reported in one decade, since 2006.

To prepare the shrimp farms, soil is scooped up, and water is pumped into rectangular units. Close to the coast the water is saline - so it is mixed with synthetic chemicals to ensure the prawn seedlings survive. India's coastal zone regulation act states, "no activities are allowed within 50-100 metres of tidal affected water bodies." Again, satellite images clearly show that the aquaculture farms are in areas they should not be, i.e., the no-development zone and within 50 metres of the mangrove buffer zone.

Nearly 55% of the shrimp production in the world comes from captive farms. What is perceived as a harmless activity providing livelihoods to the local people has a huge ecological footprint while also creating conflict amongst local communities. The wastewater from the shrimp farms that is loaded with chemicals, dead shrimp and faeces is discharged into the sea that kills fish species, making the local fishermen angry.

In the village of Boguran Jalpai, fisherman Shankar Baar alleges that the poisoned water from the aquaculture clusters has led to a drastic fall in his catch. People of his village are small scale or artisanal fishermen who catch the fish close to the coast and are not able to venture far out into the sea. When the water is discharged from the shrimp farms, there is an immediate fall in their catch.

Fisherwoman Jyotsna Baal is not only facing losses but also complains of skin problems and itching since the water is so contaminated. For several months when the aquaculture clusters release the water, her economic losses are so high that she's not able to buy fishing nets or even rent a boat to go out to sea with her husband.

The illegal aquaculture clusters are not only leading to water contamination they are also fanning a deterioration in air quality in these areas. Close to the prawn farms, opportunistic brick kilns have mushroomed in an almost parasitic way. The topsoil scooped out from the aquaculture clusters comes handy in making bricks.

And so where there are shrimp farms, there are now hundreds of such kilns that spew out toxic

air that's high on particulate matter, No2 and So2, giving a double blow to the local environment. On the day we are on the ground for this report the air quality index is at 'Hazardous levels'. But here in East Medinipur, people are out and about oblivious to the toxic fumes coming out of hundreds of kilns around them.

In a paper published in 2018, titled "Impact of Shrimp Aquaculture on Important Ecosystems in India," the analysis reveals that it's not just the state of West Bengal but across India, shrimp farms are functioning without the consent of the concerned authorities. Note the authors,

"The variation between the actual area under shrimp aquaculture and the Coastal Aquaculture Authority approved area indicate that the larger extent of shrimp farm operates without approval". The study by Jayanthi M and co-authors explored the "impact of shrimp aquaculture on land use change in India's coastal wetlands using Landsat satellite data, geographical information system techniques and field verification".

The evidence of ecological damage can be seen by the fall in local biodiversity. Fishermen allege the contaminated water from the farms is destroying biodiversity such as the red crabs, that once covered the beach in a shimmer of red, are today hard to spot.

This reporter had to walk for more than thirty minutes on the beach before sighting even one red crab that used to be found in hundreds on this section of the beach. We managed to find one hiding under a discarded plastic bag that had got embedded in the sand.

Ecologists state that creatures like the red crabs have a vital role to play in protecting the natural sea wall along the coastline from erosion. By digging their way into the sand, red crabs help infuse oxygen into the banks. This has a beneficial effect on the ecology of the coast. Scientist Dr Susanta Kumar Chakraborty who has done extensive studies on this part of the coast through his paper "Ecological role of ddler crabs (*Uca* spp.) through bioturbatory activities in the coastal belt of East Midnapore, West Bengal, India" corroborates this research. He notes with his co-authors in this paper that the crabs are a dominant intertidal species that contribute significantly to ecosystem functioning by their repeated burrowing and re-burrowing activities.

Recreational activities by the tourists such as driving on the beach with loud music and a fast speed has led to a decline not just in red crabs but other species found on the inter-tidal stretch. Fishermen here did complain to the government about the menace of rowdy tourists and the government had even banned joyrides on the beach for a short duration in 2015. But implementation is poor and the local communities are too scared to take on tourists. And there are other threats for the red crabs as the West Bengal government has big plans for this part of the coast. Coastal tourism is being given a big impetus and it includes a multi-crore coastal road project to connect all the beaches. The influx of tourists has already led to flattening of sand

dunes on the beaches around Mandarmani for restaurants and construction of resorts close to the coast, sometimes even by destroying mangroves that served as a natural defence line.

Magmata's government has yet to shut any aquaculture clusters. A study by CEEW in 2021 revealed that "as many as 15 districts in West Bengal, which are home to nearly 72 million people, are exposed to extreme climate events such as cyclones, floods, and droughts". Districts like Howrah, Kolkata, North 24 Parganas, Paschim Medinipur, and South 24 Parganas are hotspots for cyclones, which have increased five-fold in the state between 1970 and 2019, stated the study, while storm surges have increased by the same rate during this period.

As a solution the CEEW clearly states, the mangrove forests "have acted as shock absorbers against previous cyclones and are the perfect examples of nature-based solutions for climate resilience. Preserving them should remain a top priority for the state and central governments". For these reasons securing West Bengal's coastline, protecting the local ecology, and enforcing the coastal zone laws should be top priority for the state government.

### **West Bengal: The shifting Sundarban**

<https://www.himalmag.com/the-shifting-sundarban-photo-essay-2022/>

Amita Kayal was born near Satjelia, an island in the Sundarban in West Bengal, to a family who worked as farmers. Born in a Muslim. Namita says she was not allowed to continue her studies after the fourth grade, and married very early. She was just twelve years old when she moved to her in-law's house in Satjelia, a few kilometres away from her family house. Her husband frequently went into the forest with his brother to fish. Several years went by. One afternoon while she was cooking, Namita was suddenly informed about her husband's death due to a tiger attack. At the time, she was only 19 and already had two children – a son and a daughter. Her brother-in-law, who was fishing with her husband at the time, also lost his life in the attack. Namita's sister-in-law Anita now lives with her granddaughter, Sampriti Kayal, in the Sundarban.

Sampriti's parents are construction workers in Tamil Nadu, having moved there soon after cyclone Aila occurred in May 2009, as there was no work available in the region. Cyclone Aila devastated West Bengal, leading to flooding, heavy crop loss and damaged houses, with at least 191 people losing their lives and hundreds of thousands rendered homeless. Just when they were planning to move back to the Sundarban to start a small business, the region was hit by another massive storm – cyclone Amphan, in May 2020. The couple had to invest the money they had

saved for their business to reconstruct their homes, which were flattened by the storm. The Kayals' story highlights the precarity of families living in the Sundarban, with increasingly frequent storms impacting their lives in unforeseen ways.

The Sundarban has long been prone to cyclones. It is an ecologically unique area, mangroves, creeks and various types of flora and fauna, and most famously, the Royal Bengal tiger. During the Mughal Empire, the Sundarban remained relatively untouched, in part due to the persistent myth that the region was home to man-eating tigers and other wild beasts. This changed when the East India Company took over the administration of Bengal in the 1760s. Colonial settlers and hunters cleared acres of forest land, including mangroves, for cultivation, which decreased the tiger's habitat and hunting grounds. During the time of the British Raj, the clearing of trees was handed over to the zamindars. The zamindars, in turn, began to construct embankments as a buffer against natural disasters under British supervision, with migrant workers from central India hired for the actual construction. However, due to unforeseen weather conditions, the work was either postponed or completed without coherent planning. This lack of planning continues to impact the lives of the residents of the Sundarban.

As early as the 18th century, storms heavily damaged the embankments. This has impacted the landscape in the Sundarban every time a storm has occurred.

In recent times, the mismanagement of the modern embankments (built from cinder and cement after cyclone Aila thanks to a World Bank grant, only to when cyclone Amphan hit) has led to salt water leaching into agricultural lands after heavy storms, making them unsuitable for cultivation. Cyclone Amphan alone had a wind speed of over 200 kilometres per hour, and was estimated to have caused a loss of over USD 13 billion in April 2020.

As the landscape shifted, the demography of the area shifted too. Dhiren Mondal, who is 81-years-old, tells us there were few people living in Satjelia when he was a child. But, over the years, the population has seen steady growth. This rise in the population affected opportunities for work in the region. Mondal says, "There were and are no industries. People from our village go to Kolkata for work. Women work as maids in urban houses, or work in shoe factories located near Park Circus, in Kolkata. On the other hand, men or women who stayed here for work started entering into the forest to collect fish and crabs."

Due to the influx of salt water and the possibility of earning more income than through farming, residents began prawn farms in the lands they once cultivated. In doing this, they sometimes dig holes in the embankments to allow salt water to flow in from the sea, further weakening the embankments and increasing soil salinity, rendering even more agricultural land unsuitable for farming.

Increasingly, residents are entering the designated ‘core areas’ of the forest to catch fish and crabs. The core area is a protected zone where no human activities are allowed; it includes the Sundarban National Park, which was designated a World Heritage Site by UNESCO in 1987. Yet many residents penetrate into the protected zones, known as *kharis* in Bangla, as there are more crabs to be found in these areas. Unfortunately, most of the tiger attacks happen here, as *kharis* are narrow streams surrounded by dense forest land. Tigers come to the *kharis* to drink water, and when men and women come to collect crabs; animals and humans come in close contact.

It was already late evening when Bhagabati Mondal, her husband Tushar and friend Shampa Gayen set out to collect crabs. Within half an hour, they reached a *khari*. After spreading their nets, they anchored the boat nearby, readying themselves for a long wait before harvesting. Suddenly, a tiger jumped on their boat from the land nearby. It was so sudden that Tushar was unable to react, while Gayen fainted. Tushar Mondal found a stick and started beating the tiger in an effort to fend it off, but couldn’t prevent the tiger from taking Bhagabati. He watched the tiger helplessly as it vanished into the forest. Bhagabati wasn’t the only victim. Akhil (name changed for privacy) lost both his parents to tiger attacks. Akhil’s parents did not have a valid pass to collect crabs and fish, but they could not travel to other areas to find work due to their age, and were forced to catch crabs in the core areas for livelihood.

Uma Shankar Mondal was born and brought up in Satjelia and is now working as a geography teacher at a secondary school in Murshidabad. He tells us, “They mostly work in different states, as there is no work here and also because our region is so prone to natural disasters that they have lost their agricultural land.” But due to the pandemic, they were sent back home once the virus began to spread. Since there was no other work available, and residents were unable to migrate due to the pandemic and the long lockdown, they started visiting the core areas to collect crabs. “The number of people entering the forest to collect crabs has increased since the COVID-19 pandemic and lockdown. These men or women are untrained, so they quickly become prone to tiger attacks,” Mondal says. “Most of these tiger victims are migrants, we call them climate migrants.”

According to local activists in the Sundarban, there have been more than 30 to 40 tiger attacks between October and December 2021 alone, out of which many were not reported in the daily newspapers. Umashankar says that the newspapers only report tiger attacks that happen in the buffer areas, which allow entry, despite the fact that most of the attacks happen in the core areas, where people are driven in the hope of finding larger crabs that would yield higher prices....

**West Bengal: Kolkata to face double whammy of heat waves, frequent cyclones, warns IPCC report**

<https://www.thehindu.com/news/cities/kolkata/kolkata-to-face-double-whammy-of-heat-waves-frequentcyclones-warns-ipcc-report/article65186905.ece>

"Kolkata is likely to face twin challenges of heat and humidity, and increased frequency of cyclones, reveals the 6th Assessment Report of the Working Group II of Intergovernmental Panel on Climate Change (IPCC). The metropolis, which is the capital of West Bengal, is among the top 10 cities across the world that face the most dangerous multi-hazard risks like cyclones, floods, droughts, earthquakes, landslides and are most vulnerable to disaster-related mortality.

“The latest IPCC report emphasises how cities like Kolkata would be impacted more frequently as a result of climate change. Heat stress will be quite significant in the coming years, according to the analysis, while cyclonic systems will have a greater influence on the metropolis. Most likely, a city like Kolkata will face a double whammy with heat and humidity plus the impact of increased frequency of cyclones.” said climate scientist Anjal Prakash, one of authors of the latest IPCC report.

The IPCC report said that with a 1.5°C rise on average, Kolkata will experience heat equivalent to the 2015 record heat wave every year. Dr. Prakash said that an analysis of the maps of West Bengal shows the heat and humidity issues are quite high, and it is expected that it will cross the threshold of 35 degree Celsius under the business as usual scenario (projection without any interventions to address climate change).

Kolkata is also among the top 13 coastal cities in Asia with the biggest flood losses by 2050 that face the threat of submersion owing to rising sea levels and floods. The IPCC assessment report predicts that there is a strong probability that number of powerful tropical cyclones will rise. “Mumbai and Kolkata, both in India, have the biggest number of coastal inhabitants exposed,” the report added. The IPCC report suggests that sea level rise is expected to cause saltwater intrusion into aquifers in low-lying regions and tiny islands, posing a hazard to coastal ecosystems and livelihoods.

As far as the Sundarbans is concerned, the report suggests strong evidence of severe impact “on people’s livelihoods in Sundarbans”, indicating that “such livelihoods are rapidly becoming unproductive (fish loss and rising salinity making agriculture more difficult) as a result of climate change.”

Referring to the cyclone Amphan, which battered the district of south Bengal in May 2020, the IPCC report had pegged the estimated damage at \$13.5 billion. The report had suggested that the cyclone was a leading cause of displacement in 2020, with 2.4 million people displaced in India alone, including 8, 00,000 people who were evacuated ahead of time by authorities. “The combined drop of both aerosols (because to COVID-19-related lockdowns) and clouds may have

contributed to the increasing sea surface temperature, aggravating the warming of the seas caused by climate change,” the report had pointed out.

For north Bengal, the IPCC report pointed out “considerable shift in biological markers was seen in Darjeeling district as a result of climate change and pollution. Higher temperatures are predicted to have a severe influence on the riverine system when glaciers melt”. On the Sundarbans, Dr. Prakash suggested “there is a need for a specialised protection plan”, and added that “West Bengal as a State is at a critical juncture where we really have to act now. The next 10-15 years are very crucial for all of us.””

### **India: 88 Bangladeshi fishermen held off West Bengal coast**

<https://theprint.in/india/88-bangladeshi-fishermen-held-off-west-bengal-coast/834583/>

"The Indian Coast Guard apprehended 88 Bangladeshi fishermen who were fishing illegally in Indian waters and seized three boats from them, an official said on Wednesday. All the apprehended poachers and the fishing boats were handed over to the marine police at Fraserganj in South 24 Parganas district of West Bengal on Wednesday afternoon, he said. “Indian Coast Guard apprehended 88 Bangladeshi poachers illegally fishing in Indian waters off Bangadhuni Island approximately 10 to 15 nautical miles inside International Maritime Boundary Line (IMBL),” the official said. He said that during routine patrolling in the early hours of Tuesday, an ICG ship sighted three Bangladeshi fishing boats engaged in illegal fishing in Indian waters off Bangadhuni Island close to the coast. The poachers, realising the presence of the Coast Guard ship, increased speed and entered shallow waters to evade apprehension, he said. The ICG ship then shared the information with one of its hovercrafts operating in the area and following a coordinated operation, the three boats along with 88 poachers were apprehended, the official said. Approximately 360 Kgs of fish were recovered from the boats, he said.

### **West Bengal: Tiger widows of Sunderbans in the shadow of mangroves, tale of courage and hope**

<https://indianexpress.com/article/india/tiger-widows-of-sunderbans-in-the-shadow-of-mangroves-late-of-courage-and-hope-6268496/>

"It was an unusually cold February morning when Shanti Das saw her husband for the last time. Days after Saraswati puja, the yearly invocation of the goddess of learning in most Bengali Hindu households, 50-year-old Gopal Das left his village, Joygopalpur, in a boat to hunt

for crabs deep in the forests of Sunderbans. “I remember asking him to take an extra shawl. Generally, by February end, winter is on its way out. But that was not the case this year,” says Shanti (45). Five days later, Shanti got a call from an unknown number. “It was the police. They called to say my husband had been mauled to death by a tiger that morning. Just like that, my world came crashing down,” says Shanti.

According to the West Bengal Forest Department, 20 people were injured and 24 killed by tigers in the last 18 years in South 24 Parganas, where the Sundarban Tiger Reserve is located. However, its important tonote that a number of such deaths are not reported because people killed are often hunting illegally in the forests.

A report by National Centre for Coastal Research in 2018 points out that West Bengal lost maximum land due to coastal erosion in the country (99 sq km between 1990 and 2016). Between 1969 and 2009, about 210 sq km of landmass has eroded in the region.

A report prepared by Jadavpur University and WWF has estimated that out of five million people living in the Sunderbans delta, one million will become climate change refugees by 2050. Which means, increasingly, human beings of the are encroaching on forest land. Making them vulnerable to such attacks. “We have no other choice!” We are in front of Shanti’s modest single-storeyed house. It looks like it has been painted recently. Shrubs of hibiscus dot the small patch of land in front of the house. A guava tree guards the entrance of the house. A half-built toilet stands a little away from the house. Just a month before the incident, Shanti and Gopal had got their daughter married to a boy from a neighbouring village. The wedding feast was graced by “hundreds of guests”. Fish, meat and an assortment of sweetmeats were served at the feast. “We have a lot of debt. My son, who is in his early twenties, is working two shifts a day as a mechanic in Kolkata to pay off the debts,” says Shanti.

A five-minute walk down a slushy lane from Shanti’s house takes us to Pushpa Biswas’s thatched hut. Outside, dusk falls upon the Sunderbans like black, velvety curtain. Pushpa, 48, switches on the lone bulb in her one-room dwelling and holds up a picture of her husband, Sisir Biswas, who was mauled to death by a tiger about a year ago. “He tried but was a very poor farmer. He just didn’t know how to till the land. He was a woodcutter but now everything is machinised. He went to Kerala to be a contruction worker but came back withing months. There too he almost lost his life in an accident at the site. But death was following him. He went to collect honey from the forest and that’s when a tiger attacked him,” says Pushpa. Standing up and confronting fears At the sprawling vocational centre of the Joygopalpur Gram Vika Kendra, Sabitri Mondol, 40, is showing us the a “kimono” that volunteers from Denmark taught her to make. It’s more of a robe really, but the beaming confidence in Sabitri’s face stops us from correcting her. She lost her husband in a tiger attack a few years ago, the very mention of which still makes her “feel lost”. “It’s like every other story you will hear here. He went to collect crabs and didn’t come back. I did not even get to see his body,” says Sabitri.

The West Bengal government claims that since 2009, 100,000 women are being trained to be independent through vocations such as embroidery, bee-keeping, tailoring, etc. Biswajit Mahakur, secretary of Joygopalpur Gram Vikash Kendra, points out that financial independence is just the first step in the process of rehabilitation. “We have to realise that these people have no choice. These are some of the poorest areas of the state. Since most of farmers here grow only one crop a year, they are also jobless for a large chunk of the year,” says Mahakur. With an income of INR 5000 per month, she is the only earning member of her family. “I am supporting my son and my parents. My son, who is a teenager now, is looking for a job in Kolkata. We have to take care of ourselves, we can’t depend on the government for help,” says Sabitri, who says she got no compensation from the government. “Since most of their husbands go for hunting illegally, they are scared to pursue for any kind of compensation,” says Mahakur. Yet, there are many like Kirti Das, who lost three members of her family in a tiger attack, who feel that education and self-dependence is her only way out of this “hell”. “My father and my brother were mauled by tigers. A few years after my marriage, I lost my husband too. I couldn’t sit around and mope. I had to do something to make sure my young daughter at least is saved from this hell,” says Kirti. Today, seven years after losing her husband to a tiger attack, Kirti runs a tailoring shop from her house and trains other women in her village too. “When I started off, I used to make about ten blouses a week. Now, I can easily make about 200 blouses. I can also make nighties and gowns. I want my daughter to complete her college education so that she can do something substantial in the city,” says Kirti.

Victims of climate and political crisis When Amitava Choudhury, a Kolkata-based doctor who has been volunteering in various dispensaries across the Sunderban area for the past two decades, is asked about the tiger attacks, he waves his hand off in dismissal. “Tigers are not the main enemy of the people here. Apathy is. There is not a single decent hospital in this area. There are no proper educational institutions here. In fact, there is only one higher secondary school in this whole area. How are these people expected to lead a better life here?” he asks. Indeed, since this is one of the poorest regions of the state, and indeed the country, many women here are at risk of being trafficked. In 2017, India’s National Crime Records Bureau in its annual report said there were 8,132 cases involving human trafficking in the country, with 3,579 recorded in Bengal alone. “If the government, both central and state, doesn’t do something about this apathy, the women of Sunderbans will continue to suffer,” says Choudhury.

### **West Bengal: Poverty-stricken fishers suffering repeated tiger attacks in Sundarbans**

<https://www.newsclick.in/poverty-stricken-fishers-suffering-repeated-tiger-attacks-sundarbans>

"Cyclone Amphan devastated agriculture in Sundarbans last year. Since then, with lack of government support, locals are forced to enter core areas of the tiger reserve to gather prawns to eke out a living. In the process, many of them are being mowed down by tigers. It was only last

week that Chittaranjan Sarkar, 45, had gone fishing for crabs in the core area of Sundarban tiger reserve. Suddenly a tiger leapt on him and carried him away before his friends could raise the alarm. The incident happened last Tuesday in the Basirhat forest range. Sarkar was a resident of Lahirpur village in Gosaba block. The rate of tiger attacks has risen manifold in West Bengal. The loss of tiger habitat is attributed as the main reason for the renewed man-animal conflict in the Sundarban regions of the state. In the past fortnight, more than five people have lost their lives in tiger attacks.

Last Monday, in the Benifili forest area, Sankar Sardar, a fisherman, was injured in a tiger attack. He, however, later succumbed to his injuries in a Kolkata hospital.

Another fisherman, Arabinda Biswas, who had gone to catch crabs with two of his associates in the Jhila forest area, lost his life last Sunday. Sardar was a resident of Kumirmari area of Sundarbans. The list of dead is, in fact, enormous, according to Kanti Ganguly, former Sundarban development minister, government of West Bengal, and a veteran politician of the marshy region. He claimed that some 43 crab catchers had fallen prey to tiger attacks in the last seven months in Sundarbans. On why these pisciculturists were venturing into the core area of the Sundarban tiger reserve, Ganguly believed that hunger was the leading cause that motivated poverty-stricken fishermen to catch crabs and prawns and sell them in nearby markets of Kolkata for Rs 500 per kg.

Indeed, the state of poverty is such that about 80% to 90% of male villagers from the Sundarbans now either reside outside the state in Tamil Nadu, Andhra Pradesh and Kerala, working as daily wagers for reaping paddy. Cyclone Amphan that hit last year made farming impossible in Sundarbans due to saline water's inundation of paddy fields. The rest of the energetic youth who remain here venture out to catch crabs and prawns and sell them in the local haats (markets) in the afternoon hours to make a living. The archipelago, situated in the southernmost part of the Gangetic basin, extends between two rivers— Hooghly in the west, in West Bengal, India, and Meghna in the east, in Bangladesh.

The Sundarbans in India spans two districts in West Bengal—north and South 24 Parganas — covering 19 blocks and 9,630 sq km, of which almost half is forested. There are 102 islands in the Indian Sundarbans, of which 54 are inhabited, and the rest are notified as reserve forests. Talking with NewsClick, Saraj Tarafdar, a village homoeopathic doctor by profession in Satajelia village, said that the economic condition of the people of Sundarbans had deteriorated over the years and added that “The lockdown made them interned in their own house without any food or rations. Given this, fishermen from Satajelia, Lahiripur regularly venture out to the Sundarban islands to catch crabs mainly in the Chilapata forest area.”

Tarafdar added that he had come across a case of a tiger attack in the Kultali police station area last month. “On one side, the Modi government has stopped the free rationing systems of rice and cereals in the state, and on the other side, the State government has withheld the ration cards

of residents of Sundarbans, as many of them have migrated out. It is impossible for the womenfolk to regularly visit ration shops located in different islands. Apart from that, the local TMC MLA has illegally acquired land in Bali dwip (Riverine Island) on behalf of tourism. In Gosaba's Hamilton Gunj area, even residents who inhabited the area for more than 75 years have been told to clear off the lands, where spots have been earmarked for tourism projects."

He also claimed that most of the dead in the tiger attacks do not get any government compensation, and after the death of the only earning member, families become destitute. Biswambhar Basu of MR Dealers' Association affirmed Tarafdar, claiming that ration distribution was closed in the month of January. In February, it is expected that ration will be given, but from March there will be a halt in this service. Talking with NewsClick, P Ulaganathan (IAS), the South 24 district magistrate, claimed that the government had done enough for the people of Sundarbans. "They are provided with rations and schemes like Laxmi Bhandar (where a sum of Rs 500 is deposited monthly in the account of the female member of the household)," admitting, however, that "Hurricanes like Amphan have robbed the people of Sundarbans of their living as farmers." Nonetheless, he asserted that the administration was trying to do its best. Ulaganathan went on,

"The forest department has started fencing in tiger attack prone areas and islands, and the villagers are repeatedly urged not to go to the core areas for any activity. Surveillance and monitoring have also started to locate the tigers active in the area." He admitted that only in cases of tiger attacks in non-core areas was the compensation of Rs 2 lakh given. He only responded that the government had "" done enough about the special drives of NREGA projects being executed in the area; he only responded that the government had "done enough."

### **West Bengal: Tiger kills fisherman, drags his body to forest; narrow escape for 2 others**

<https://www.news18.com/news/india/in-bengal-tiger-kills-fisherman-drags-his-body-to-forest-narrow-escape-for-2-others-4726922.html>

"In an unfortunate incident in the Chilmari forest of the Sundarban area in West Bengal, a fisherman was killed by a tiger, which reportedly dragged his body. On Monday, three fishermen of Sundarbans had set out to catch crabs from Parashamani village, which comes under the Lahiripur gram panchayat. According to witnesses, while the three fishermen were catching crabs at around 10 am on Tuesday, a tiger suddenly leapt out of the bushes, jumped on the boat, and pounced on Chittaranjan Sarkar. The rest of the fishermen rushed after the big cat with sticks while shouting, but it was too late. According to sources, Subrata, Chittaranjan, and Subal went to catch crabs in the Chilmari canal of Jhila No. 4.

At that time a tiger jumped into the boat silently without anyone noticing. Although Subrata and SUBal came out unscathed, they could not save their third colleague. Following this incident, the

forest department was informed. The Sundarbans Tiger Reserve Field Director said that the fishermen fell into the creek while catching the crabs and were attacked by the tiger. Chitta Sarkar was accompanied by his friends Subal Mandal and Subrata Kayal. Sarkar, a resident of the Gosaba block, is survived by his four children and a wife. Such incidents, however, are extremely common in the Sundarban area, where residents are locked in a perpetual war of livelihood vs the dangers of the wilderness. In November 2021, 69-year-old Hazari Mondal, hailing from Chorgheri in Lahiripur in the Gosaba block, had lost his life while catching crabs. According to a report in The Times of India, he had also gone fishing in the Jhila canal, just like Chittaranjan Sarkar and his companions.

### **West Bengal: Migrant workers live precarious lives amid economic turmoil**

<https://www.newsclick.in/migrant-workers-from-west-bengal-live-precarious-lives-economic-turmoil>

"Samrat Karyi (18) of Madhupur gram panchayat of Coochbihar had gone to Rajasthan to work as a migrant labourer in the construction sector. He boarded the Bikaner Guwahati express to return home with his brother. When he was nearing the Coochbihar Junction, he went to the toilet and just then, a fatal train accident occurred, taking his life. However, his brother's life was saved. His father, Someshwar Karyi, a septuagenarian, works as a part-time fisherman catching fish from rivers and inland water bodies. Samrat could barely make his ends meet, and as a result, with 22 others of his village, he had gone to Rajasthan for work. Subhas ray of Putimari GP area of Coochbihar too worked as a migrant labourer in a cable factory in Jaipur, Rajasthan. He was returning to see his three-month-old daughter in the train, which had earned the nickname of migrant labourers' express, when he died in the accident.

Over thousands of migrant labourers from Coochbihar go to Rajasthan to find employment every year. Then after some months, they come back with their gathered money. Chiranjeet Barman, another victim, had to move to Rajasthan as he was suffering from gallbladder stones and needed surgery. He could only match his operation costs through the Swasthya Sathi card, which assures a sum of Rs 5 lakhs from the state government for any hospitalisation, in the northern state. Chiranjeet' death has raised questions about the Swasthya Sathi project's efficacy. Talking with Jamir Mollah, organisational secretary of West Bengal migrant labourers union,

Newslick learnt that in the past one year, the number of unnatural deaths of migrant labourers has been rising in the state. It is especially increasing at an abnormal rate in Murshidabad district, which supplies the largest number of migrant labourers to states like Kerala, Tamil Nadu, Andhra Pradesh, and Rajasthan. About 26 deaths had happened in the district in the last year only, according to Mollah. He pointed out that the 100 days of work under MGNREGA was absent in the villages there, and it had only compounded the problem of livelihood. However, in the far-flung states, the thikadaars or the work contractors are often frauds and usurp the money workers' pay them. Many of the workers are also discriminated against due to their language,

which is Bengali. They are often wrongfully considered Bangladeshis and are harassed and taken to police stations. The Inter-State Migrant Workmen Act, 1979, has been bypassed throughout the country, except in Kerala. The migrant labourers face absolute hardship while working outside their native states and face economic turmoil after returning home, forcing them to leave again. Due to the Centre for Indian Trade Union's demand and the Supreme Court's intervention, the E-Shram portal will have a definite count on the number of migrant labourers active in the country, Mollah said while speaking to Newsclick.

In villages after villages, the only earning male member being outside the home for years also gives rise to social problems, Mollah said. He noted that after the last lockdown, the West Bengal Migrant Labourers' Union had given deputation for providing ration to each family of migrant labourers to the Block Development Officer and had also given submission to the BDOs so that the returning migrant labourers who are at home can be given alternate work in government projects. In some cases, the Union has been able to forward the complaints of migrant labourers' families to appropriate channels, and the government representatives had to pay a visit to them and solve their problems. In most cases, the problems lie in the children's education and medical causes, such as the treatment of elderly parents of migrant labourers.

The Current scenario However, there is no government register of "thikadars" contractors with whom migrant labours go to other states. Whenever any accident happens, the thikadar vanishes. Families of labourers don't find anyone to ask for compensation. They don't even know where the young men work, who is liable for compensation if any situation arises. "There lies the chief crisis," says Mursalim Sheikh of Bhagabangola. Sheikh belongs to the village from where young men from almost every locality have gone to Karnataka, Kerala, Bihar, Jharkhand, and Uttar Pradesh to work as construction labour.

On May 31, 2021, Iqbal Hossain (19), a boy from Bhagabangola, lost his life in Bihar, where he worked as a labourer on a sewerage pipeline project. Months have passed, but his family received no compensation. When asked why people were going to other states, the villagers simply replied, "We don't have any work here that pays enough to run a household." Even children of school-going age have gone to other states to work as construction workers. Ismail Haq, a teacher in charge of Bhabanipur Barkatia Senior Madarsa, Lalgola, said, "Many students of Secondary level and Higher Secondary level are currently outside West Bengal.

We are requesting parents to send them to school, we need them to register themselves for the board examinations, but they are not coming. Parents are saying they have no money to bring them back for school." The closing of schools during the pandemic also drove away several students from education and led them to become migrant workers. The lowering income from farming is another reason for the migration of the workforce from agrarian sectors. Chiefly migrant workers come from families of farmers and agrarian workers. But they are finding no reason for sticking to their old profession. Contrary to the promises by central and state

governments, the income of farmers have been lowered. Returning after lockdown, Mirajul Hasan of Lalgola tried farming. But he faced significant loss. "I had a loan over my head. Though with farming, I will repay a part of it. But every one of our village faced loss," he told Newsclick over the telephone. So Hasan left his village, family and went back to Kerala, where he now works as a labourer in the farm sector. During the post lockdown period, the villagers were deeply in need of MGNREGA work. But corruption at the local panchayat level allegedly hampered the process of employment generation. In parts of Murshidabad, complaints have been raised regarding the same. According to Abdul Azad, former Pradhan of Barala Gram Panchayat of Sagardighi, Murshidabad, people were not getting paid even after working on MGNREGA projects. So they had no option to stay in the village without a livelihood. "Many people get a wage of 10 days after working 15 days. There is no one to look into this matter," he said.

### **West Bengal: In the Sundarban, climate change has an unlikely effect – On child trafficking**

<https://science.thewire.in/environment/sundarban-delta-climate-change-child-trafficking/>

"Afza's father had one condition if he were to allow her to return home: that she leaves her child behind. A survivor of sex trafficking who became pregnant during roughly two years at a brothel, Afza was eventually found by police in 2015 and reintegrated into her family without her baby. She was only 13 years old when she left her two-month-old son at a child care home. She was married off a few months later. "I could not handle him because I was so young myself," Afza said. "But I could not bear the thought of giving him away. After returning home, I did not speak for months."

Now 19 and a mother of two other children, she has almost forgiven her father. The stigma of her having given birth to a child because of rape would perhaps have been too much to bear for the family, she says, and would certainly have made it much harder for them to find her a husband. - Cyclone Aila transformed a mainly self-sufficient agricultural society in the Sundarban into a market-based one, but without the tools needed to survive the change. - This transformation encapsulates how India's Sundarban region is changing, and is being forced to change, due to the overwhelming effects of climate change. - One particular effect has been an uptick in child trafficking, which experts say is the result of the state's focus on flagship projects over the needs of the people.

Thousands of girls like Afza go missing in West Bengal every year, according to India's National Crime Records Bureau. About a third of those missing officially come from Afza's home in the Sundarban. The world's largest mangrove rainforest sprawls across India and Bangladesh and forms a natural border between the Bengal delta and the Indian Ocean. It is one of the most climate vulnerable locations on the planet. Climate change has taken an enormous toll on the rainforest in recent years. Cyclones, floods, river erosion and soil salinisation – the

result of saltwater from the Bay of Bengal encroaching further and further into the low-lying Sundarban – have repeatedly uprooted families and decimated the incomes of residents who have traditionally relied heavily on agriculture and fishing for their livelihoods. Multiple UN agencies such as UNICEF and the UN Development Programme have warned that climate change will increase exploitation of minors, including trafficking. This fear is already reality in the Sundarban.

The Fuller Project and The Wire have interviewed a dozen child trafficking survivors, as well as over a dozen activists, lawyers, environmental experts and government officials, who describe how repeated natural disasters and environmental changes have created a highly vulnerable population that is increasingly at risk of participating in or becoming victims of trafficking. Like Afza, many face a challenging reintegration into a collapsing society where they remain vulnerable to exploitation, often in the form of child marriage or re-trafficking. Eight of the 12 trafficking survivors The Fuller Project and The Wire spoke with were impregnated as minors. For several climate experts The Fuller Project and The Wire spoke with, the experiences of these girls highlight critical gaps in climate policy, which they say falls far short of meeting the scale of the needs and focuses far too much on flagship infrastructure projects that fail to address the root causes of trafficking or the complexities of the social upheaval taking place in climate vulnerable regions such as the Sundarban.

“When the climate is affected, it immediately creates ripple effects. The minors are on the fringes,” said Barun Kanjilal, a health economist who has spent the past 10 years conducting research in the Sundarban. A new kind of slavery’ like the other survivors, Afza requested to be identified by a pseudonym. Her voice was resigned yet steady as she recalled an all-too-brief childhood. She grew up in Lebukhali village in a mud home repeatedly destroyed by floods. Around the time she should have been entering primary school, she was sent off instead to become a domestic worker in Kolkata by her family, who were struggling to make ends meet. One day in 2013, she met a neighbour from her village while boarding a train from Kolkata to Lebukhali to visit family.

He kidnapped her by spiking her drink. Afza would end up spending months in a brothel in Pune, about 1,650 km away on the other side of the subcontinent. She was only 12 years old at the time. When police found her during a raid and brought her to a child care home, she discovered she was four months pregnant. Nervously toying with a plastic orange necklace around her daughter’s neck, she snaps back to the present. “When my husband sees me crying he says ‘Let’s go and get him back if you know where he is.’ I ask him, ‘How will I ever know where to find my son?’” Afza and her family lost their home to Cyclone Amphan in 2020, along with thousands of others. Her in-laws provided her family of four with a makeshift space, but following a feud, they now insist her family vacates that space. Most days, Afza worries about the lack of livelihood opportunities, the dwindling rations, and a canal that floods her home when it rains. Her husband worked in Andhra Pradesh’s paddy fields but returned home during last

year's lockdown. In the Sundarban, there is barely any work: the crops suffered too much damage in the past year. In this pressure cooker economic environment, it's becoming more and more common for increasingly desperate people to consider trafficking their neighbours and even family members. The number of girls recorded missing in West Bengal have climbed up steadily in recent years, from 5,986 in 2016 to 6,640 in 2020.

While there is no breakdown of the data specific to the Sundarban, the two districts that encompass the Indian side of the forest account for 32% of cases involving sexual offenses such as trafficking – despite being home to less than 20% of the state's population. Anti-trafficking activists and climate experts told The Fuller Project and The Wire that the official figures capture only a fraction of the scale of the trafficking in the region because most cases never get registered with the police. Families can be hesitant to file a case in the first place due to the stigma, and when they do, police often refuse to register them due to pressure from well-connected traffickers.

The Sundarban districts of South 24 Parganas and North 24 Parganas were the hardest hit by both Cyclone Amphan in 2020 and Cyclone Yaas in 2021. West Bengal Chief Minister Mamata Banerjee said the impact of Amphan, which cost the state an estimated Rs 98,100 crore, was worse than that of COVID-19. The tropical storm turned into a devastating super-cyclone while passing over the Bay of Bengal, where the water was 2° C above normal as a result of human-induced climate change. Amphan and Yaas hit a population still reeling from the effects of Cyclone Aila in 2009.

A World Bank survey five years after Aila found that only 6% of the population had fully recovered from its economic impact. Human trafficking in the Sundarban is not a new phenomenon, but the impact of Aila made it dramatically worse. Kanjilal, the health economist, said that Aila transformed a mainly self-sufficient agricultural society into a market-based one, but without the tools needed to survive the change. "Climate change is paving the way for a new kind of slavery," Kanjilal said. "A huge population is still living on the river banks. These people have the potential to become climate refugees whose rights go completely missing..."

### **West Bengal: Sunderbans tiger mauls crab hunter to death**

<https://www.telegraphindia.com/west-bengal/sunderbans-tiger-mauls-crab-hunter-to-death/cid/1848049>

"A crab hunter was mauled to death by a royal Bengal tiger in the Sunderbans on Monday morning. Jahangir Baulia, 31, from Kalitala village near Hemnagar was killed in the Jhila (zone 6) forest. The victim, along with Manoranjan Mondal and Shatrughna Mondal, had gone to the forest to trap crabs on Sunday afternoon. The lure of earning good money by selling crab that is often sold between Rs 1,200 and Rs 1,500 has claimed many lives in an area where cyclones Amphan and Yaas ruined economy and livelihood.

The two companions claimed that Jahangir was alone trapping crabs in a creek during a low tide when the tiger attacked him from behind killing him on the spot. Police and forest department officers said Jahangir's head and neck suffered serious injuries, which led to his death. An official of the Basirhat forest range said: "It is unfortunate that crab hunters have been inviting troubles repeatedly by entering tigers' domains despite our warning." Breaking down in tears, Manoranjan Mondal said: "During the early hours today, we began trapping crabs separately in three different locations. There was low tide in the river.

So, we all left the boat and began tracing crabs close to the bank. I was a little away from him when I heard the roar of a tiger followed by Jahangir's cry for help. I rushed to the spot with a bamboo pole in hand and found Jahangir lying unconscious. He died within a few minutes in front of me as I watched helplessly."

Later, Manorajna and his fellow crab hunter Shatrughna informed Hemnagar coastal police and also the officials of Basirhat Forest range about the attack, who rushed to the spot to recover the body. The repeated incidents of attacks on the crab hunters and fishermen in the Sundarbans mangrove area, particularly inside the Sundarbans Tiger Reserve, have become a matter of concern to the forest officials, who have appealed to the villagers not to risk their lives by infiltrating inside the domain of the tigers.

A crab hunter from Hemnagar said: "We have no option but to survive on fishing or by hunting crabs. Fishing does not help to earn good money since the excessive salinity has withered fish. Prawns are available in some creeks and canals, but hunting crab helps fascinate us since it helps to get a good amount of money""

### **Bihar, Jharkhand, West Bengal and Odisha: IMD predicts heavy rainfall from today**

<https://www.timesnownews.com/india/article/imd-predicts-heavy-rainfall-for-bihar-jharkhand-west-bengal-and-odisha-from-today-details/848208>

"The India Meteorological Department (IMD) has predicted rainfall and thunderstorms across large swathes of east and central India over the next few days. The weather forecasting agency also predicted that cold wave conditions would prevail in parts of north-western India from today. As per the bulletin released by the IMD on Monday night, dense or very dense fog is likely to be observed in isolated pockets of Punjab, Haryana, Uttar Pradesh and north Rajasthan over the next few days. ""Cold wave conditions in isolated pockets very likely over Punjab, Haryana and Chandigarh during 12th-15th and over north Rajasthan during 11th-13th January 2022,"" the IMD forecast.

According to the weather forecast, isolated heavy rainfall is very likely over Odisha on January 11 and January 13. Scattered to fairly widespread light or moderate rainfall is very likely over Vidarbha, Chhattisgarh, Bihar, Jharkhand, West Bengal and Sikkim and Odisha during 10th to

14th January. Isolated to scattered rainfall is very likely to continue over Uttar Pradesh and East Madhya Pradesh during the next two days and decrease thereafter. Isolated thunderstorms with lightning or hail are very likely over Vidarbha, Chhattisgarh, Marathwada, Jharkhand, Bihar and West Bengal, Sikkim, Telangana and Odisha this week.

Scattered rainfall or snowfall is also likely to occur in the northeastern part of India over the next three days - over Arunachal Pradesh, Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura. ""Under the influence of cyclonic circulation over Southwest Bay of Bengal and neighbourhood at lower and mid-tropospheric levels, isolated light rainfall or thundershower over Tamilnadu, Puducherry and Karaikal and Kerala and Mahe during next 4-5 days,"" the IMD added. With squally weather (wind speed reaching 40-50 kmph gusting to 60 kmph) being expected over central parts of south Bay of Bengal and adjoining Southwest Bay of Bengal, the IMD has advised that fishermen should not venture into this area.

### **West Bengal: In Coastal Bengal, climate change confronts two villages with different crises**

<https://science.thewire.in/health/bay-of-bengal-climate-change-health-women/>

"It is easy to consider the south of West Bengal to be an unwieldy side of the world stricken acutely by the climate crisis. Buzzwords like ‘salinity’, ‘storm surge’, ‘water-level rise’ and ‘ocean warming’ define the place – as does ‘poverty’. They give the impression of uniform and pervasive suffering in the region, and conjure visions of floods and shelters. One might conclude that its residents don’t have an easy job getting by. News reports draw attention to their plight only when a cyclone barrels into the coastal areas they inhabit – although the cyclones have been becoming more common. But as it happens, climate change is unsparing of the smallest details, and two places not too far from each other on the Bengal coast have been confronted with two different crises.

A 2013 study by Central University of Odisha’s Kakoli Banerjee measured salinity in the Sundarban from 1990 to 2012. She reported that the waters of the eastern part of the Indian Sundarban are more saline than those in the west. The waters of tide-fed rivers in the eastern sector of the Indian Sundarban are becoming more saline. Over the years, they have been almost entirely cut off from their freshwater sources. And water that comes in during the high tide takes time to recede, a phenomenon called tidal stagnancy. This ensures saline water remains in the tidal rivers for longer, Tuhin Ghosh, director of the School of Oceanographic Sciences at Jadavpur University, said.

The storms have also been becoming stronger, more intense, and evaporation has been increasing. As a result, the land and water along eastern Bengal are hypersaline. But less than 90 km to the west, within the same state of Bengal, and where the Hooghly meets the bay, salinity is no longer the biggest climate-related problem. “The melting of ice has increased in the Himalayan range which has added freshwater and decreased the salinity of the western

Sundarban by almost 2.65 psu1 over 23 years,” Banerjee wrote in her paper. Ghosh, however, has an alternative: “Nearly 500 human interventions on the Ganga impede the Hooghly’s ability to carry sediment to the sea.

As a result, massive siltation happens on the river bed, causing it to rise.” So during the monsoons or during a storm, when the river is already swelling, it floods. Two villages in which women are integral parts of the local water ecosystem – one ensconced in the dense tidal river web of the Sundarban of South 24 Parganas district, the other near the mouth of the Hooghly in East Medinipur – together present a tale of innocuous disparities that climate change is magnifying into disparate crises. Jharkhali, South 24 Parganas At the COP26 climate talks in Glasgow, a panel of global experts discussed the implications of losing mangroves for an hour. While that was happening, in a village 13,000 km away, and in an eponymous land of mangroves, the people of some 600 households were worried largely about crocodiles.

“In early November, a couple went to fish in the waters of the tidal Bidyadhari river. Slinking around in the thin mangroves was a crocodile. It carried the man off and injured the woman, who is still weeping, two days later.” This is Susheela Mondal’s account. Mondal is around 45 and lives in the small Tridib Nagar village in Jharkhali. She has an ‘allergy’ that she firmly believes came about because she spends many hours trawling nets through brackish waters. But the biggest problem, according to her, with saline-water fishing is crocodiles. Mondal is aware that the most immediate threat is not the most worrying – but crocodiles are why she keeps her away from the waters, where she fishes for shrimp (locally called meen), like all the women in her village. In summer, Mondal wades into the water at midnight, remains submerged up to her shoulders and trawls a net many times her size until dawn.

She repeats this once again later in the day. Once she’s out of the water, she sorts the shrimp fry on the river’s muddy banks, arranges to sell them at the local Balikhil Bazar and dries off only once she’s back home. In the last two years, Mondal has been suffering from an ‘allergy’ – she says that’s what her doctor called it. In its throes, her body breaks out in rashes and she runs a fever. There are no doctors or a clinic nearby. Mondal’s daughter in Bardhaman city, some 200 km away, arranged for her to travel there to consult with a doctor she knew. Mondal was first asked to get allergy tests done in Kolkata.

“Those were worth Rs 1,000. Then, blood tests were done and they admitted me to a private hospital in Bardhaman for a month. During this time, they were trying out medicines. After that, the doctor said I have allergies and banned me from handling cold water,” Mondal recalled. But finds this advice bizarre. She lives a kilometre from the Bidyadhari, which meets the Matla close to her house, and the river is where she fishes for shrimp fry. Reduced to a tidal river with no fresh water source, when the saline Bidyadhari floods farmland, it leaves crops unfit to reap. (These crops are grown for consumption by the same households that grow them.) Mondal uses the word ‘burnt’, and that the crops ‘turn red’ under saline influence. The houses neighbouring

hers are all led by women. Most of them fish for shrimp fry to cover everyday expenses. The men of these households have migrate out of the state in search of work.

The women are the lowest rung of the aquaculture ladder in the region. With nothing but a large aluminium container and their net, they sell shrimp fry to pond owners, who then rear and sell them. According to Banerjee, the water's increasing salinity has rendered it unfit for most aquatic life, except shrimp. Susheela Mondal says she has seen this change. When she arrived at Tridib Nagar 30 years ago, she says she was spoilt for choice. "We saw plenty of crabs, various kinds of prawn and shrimp, but they are gone now." Basanti Gayen, Kusum Mondal, Bharati Sarkar, Arati Mondal, Mita Mridha and Saraswati Mondal are all residents of Tridib Nagar who also depend on the shrimp.

Their six-hour expeditions fetch them a hundred rupees a day – on a good day. All of them also said they have observed the effects of heightened salinity on their bodies. Gayen has scabs from itching that lasts for 4-5 days. Arati Mondal shows white patches on her hands. The women are all mothers or grandmothers, and don't like to speak of their personal troubles. Gayen even says they don't have "big illnesses" in their village. All of them also said their doctors are far away. The fisherwomen are also unsure of their own age ("we'll need to see our Aadhaar cards") – but know how to read the water's currents and why they can find shrimp fry only in warmer weather. This is also when the water is the most saline. § In the late afternoon, Mondal sits outside her house while her two grandchildren flit around, sharing an apple.

Their parents are out fishing, Mondal says. Her husband, younger son, younger daughter-in-law, and their son all work "outside", as she gestures at the lone road leading away from Tridib Nagar. The government made this road permanent only in October 2021, allowing electric rickshaws to reach her house for the first time. You can't find it on Google Maps, but it allows an essential thing to reach Mondal: an ambulance. It's an enormous benefit, but it's also bittersweet. "My elder son's first son died shortly after being born," she says. "The four of us pressed on her belly to allow for the birth, she was in a lot of pain.

The doctor arrived and asked, 'What do I do?' We thought the baby was dead at birth, but I heard a sob and thought maybe he was alive. We took him to a hospital, but by the time we reached, they said he was dead." This 'doctor' was not a doctor at all but a rural medical practitioner (RMP). The villagers call them 'doctors' anyway. "We try to scientifically solve the immediate health problems of the people here, but we are not the real thing," RMP Gouranga Sarkar admits. He set up his 'clinic' – a table and two benches in a room that opens out to the street – in Balikhil Bazaar of Tridib Nagar after losing a social worker's job in Kolkata after the pandemic hit. Sarkar wasn't the doctor who treated Mondal's daughter-in-law but he about these situations. Trained at the Dr Norman Bethune Choloman Medical School for three years, Sarkar has observed effects of prolonged exposure to saline water on his patients.

“They get vaginal itching first, in some cases we see that they have polycystic ovarian disease, or leukorrhea, or problems in their uterus, including cysts,” he elaborates. According to him, 90-95% of the hundreds of his patients have one of these problems, and around 12-14% have uterine cancer and are undergoing chemotherapy at Kolkata hospitals. In Tridib Nagar, if Sarkar is absent, there is only one other person villagers can go to – a school master, Pabitra Sarkar. Both the Sarkars (who aren’t related to each other) maintain a stash of emergency medicines to give villagers who knock on their doors. Pabitra Sarkar receives it through an NGO; Gouranga Sarkar is more circumspect. When these medicines don’t work, the RMP refers patients to consulting gynaecologists, or the marginally bigger Jharkhali Primary Health Centre, which is has a single technically qualified doctor.

If it is a serious disease, a patient has to go to the Basanti Rural Hospital. It is 21 km by road from Tridib Nagar and the only healthcare centre that provides essential healthcare to pregnant women and new mothers. Dr Mintu Ranjan Pal, the general duty medical officer who has been at the hospital for some six years now, says at least 400 patients line up every day. With most men away from the villages for work, most people in the lines are women and their children. Like RMP Sarkar, Pal offers a picture of diseases among shrimp fry fishers that’s grimmer than the one the women like to believe. “If you see the line now, almost 10-20% of the people are standing with skin diseases,” Pal says. “With women, what we see happening when they fish for long hours in saline water is that water-related problems, like pelvic inflammatory diseases, white discharge, gynaecological problems come up.” But the women are often reluctant to speak about their ailments, he adds.

The room where Pal and his colleague see patients has large doors and windows on either side, and offers no privacy, even as an eager line of waiting patients peeks inside. This hospital is small and sparse but remarkably clean. A spic and span ‘waiting room’ has been kept shut but is unlocked for the reporters. The Tridib Nagar fisherwomen say unanimously that if there ever was a woman doctor in their vicinity, all their “life’s troubles would be solved”. Two ASHA workers come on occasion – but they’re limited by the lack of proper roads. Pal agrees that a woman doctor could help patients open up. The hospital has a woman doctor, who they “thank often for working there,” because the Sundarban villages are “tough for a woman”.

The particular trials of being a woman in a land that is spectacularly harsh to its settlers keep the young in Tridib Nagar worried as well. Siddhartha Mridha, a volunteer with an NGO, says he and his colleagues try to always remain on hand to transport pregnant women and young mothers to hospitals during emergencies. An additional role he has had to take on with this job is letting people know when and where to run during a storm. Mridha couldn’t graduate school – mainly because it was 13 km away – but taught himself English and Hindi. The village healthcare and awareness system runs on young people like Mridha. He and his NGO colleagues are the only ones in the region who they say are familiar with the idea that climate change is irreversibly

changing the area where they live. For the rest, the climate question and the possibility of moving again is tiring. “We came here in 1970.

The party helped us set up. Now the party is trying to improve things. Where will we go? We have already been refugees once,” says Tapan Burman, a panchayat elder. The ‘party’ in power in the 1970s was the Left and the ‘party’ in power now is the Trinamool Congress. But Burman speaks of all administration and authority using the same word. With a daily life replete with floods and suffering, Burman hasn’t been inclined to acknowledge the change in government. Nijkasba, East Medinipur Party politics, however, permeates all aspects of life in East Medinipur’s Nijkasba. This is a fishing village situated at the point where the Rasulpur river meets the Hooghly near the latter’s mouth. Across the Hooghly from the disappearing island of Ghoramara and its big brother, Sagar Island, Nijkasba struggles to plot itself on a map. It is certainly not as big a presence as the Sundarban on the climate change radar. But for its people, its claim to fame is that it belongs to the Khejuri II block.

The region saw protracted violence over land acquisition before the change in state government in 2011. In successive elections, including the one to the West Bengal assembly earlier this year, the Khejuri-Nandigram region was on the receiving end of pitched media attention. At Nijkasba, fish brought in by large boats is auctioned to traders and needs to be sorted immediately afterwards by species. This sorting is done by nearly 250 women who sit under open skies on a large cement platform by the river. This happens every day at 2 pm. The women all walk to the fishing station from the neighbouring Dakshin Oli Chawk village and walk back after a couple of hours of work.

Their daily income from this ranges between Rs 10 and Rs 50. As in the Sundarban, women here too occupy the lowest rung of the fishing ladder. But they are also acutely aware of local leaders, the health infrastructure hierarchy and the possible problems of speaking to city folk on administrative drawbacks. However, a ready icebreaker that can override any amount of reticence over politics is floods. “When there are floods, everything floats away, everything is destroyed...water stays for 2-4 days, 5 days, sometimes 10 days and sometimes longer,” says 60-year-old Jharna Rani Patra. More importantly, when floods come, Patra notes that the fish sorting work stops because everything, including the sorting station, is submerged. With the years, floods appear to have gotten fiercer. Patra and her colleagues say there is more water in the floods now than before.

The Union government in 2019 said that of the major ports in India, Diamond Harbour in West Bengal – 54 km north of Nijkasba – and located at the mouth of the Hooghly, has recorded the maximum sea level rise. “Water entered the house and broke the four walls down. Most houses here are mud houses, how can poor people build permanent houses?” asks Parul Das Maity. Maity and her family have been living in a tarpaulin tent just across from their mud house since it was destroyed in the May 2021 Yaas cyclone. Even for a riverine people accustomed to floods,

Yaas was a particular catastrophe. Villagers refer to cyclones Aila, Amphan, Bulbul and Phani as “jhor,” the Bangla for “storm”.

But cyclone Yaas, is colloquially not “Yaas jhor” but “Yaas bonna” – ‘Yaas flood’. “Amphan destroyed 95% of the houses here, leaving only 1-2 pucca houses...and even those pucca houses which had tin or asbestos roofs, those too flew off. Then came the Yaas floods, in which most of the land and all of the houses of Dakshin Oli Chawk village were destroyed,” says Suryakanta Sahu, a lifelong Nijkasba resident. “Drainage is good here and flood waters would go quickly. But the rain water, in some low lying areas, has been impossible to get rid of. This agricultural land could not produce any crops this year. Vegetables, which you could grow 12 months of the year, have all been destroyed,” Sahu says.

The villagers have subsisted on government rations. Women, in such situations, are hit the hardest when it comes to nutrition intake. But that is a distant problem when compared to the spate fever, diarrhoea and dysentery that comes after any flood. In a year in which locals claim to have seen “four to five floods,” these diseases have been particularly challenging. ASHA workers who bring healthcare to villagers’ doorsteps – and often have to wade through waist deep waters to do so – know this acutely. “Whenever there is a flood, we give them metrogyl (to combat stomach diseases) or medicines to deal with fever...we always ask them to keep the bathrooms clean and keep containers of water on a raised platform,” says Shyamasri Bijali Das, an ASHA worker since 2009. Her monthly salary is around Rs 5,500. Das has 909 people under her direct care and is responsible for everything from post-childbirth attention to records of COVID jabs. When asked how increased storms, flooding and logged water are affecting health, Das points to dengue. But she is not keen to stress on it and immediately after mentioning it, says that it has been brought under control now.

In the course of the chat, her colleagues often interrupt her to stress that the overall health situation too is under control thanks to the infrastructure and their efforts. Like their ASHA ‘didis’, the fish sorters of Nijkasba too know that speaking of their own health problems could reflect a failing on the part of the powers that be. Each sentence is prefaced by the name of a local leader who has “done a lot;” each person working at the fishing station knows under which politician’s tutelage a particular pillar was built, and who repaired what after which flood. Kakoli Patra, a mother of three, says that neither she nor her children suffer from any disease at all. “I have only been to the hospital thrice, when my children were born,” she says.

It takes the head of the fishing station, a wizened old man called Rabin Bor whose word is sacrosanct at the river bank, to say that women there suffer a lot because there is no separate toilet at the workplace. “The conditions here are not fit for them,” he says. But what Bor can get away with, Patra apparently cannot and she and the other women only smile and nod when asked about the lack of opportunities to safeguard feminine hygiene. Patra and her colleagues speak at

length on floods but are loath to narrate their singular experience as women in combating its aftereffects.

When a bystander asks Patra to speak of a woman who allegedly fell dead while sorting fish, she refuses to do so and clarifies to the reporters that she does not know why that woman died – it could be a “private” reason, says Patra, using the English word. Sahu’s estimate is that 95% of the village has been living in shelters and under tarpaulin covers offered by the government since Yaas. This means that like their workplaces, these women’s homes too have no separate toilet area. This poses hygiene challenges, something that the interviewed ASHA workers also acknowledge. Nijkasba is serviced by the Sillyaberia Rural Hospital – situated right beside a five-storey cyclone shelter. This hospital is accessible by electric rickshaws. From the fishing station to the hospital is a ride that costs Rs 15. It is 5 kilometres away from the Dakshin Oli Chawk village where the fish sorter women live with their families.

After each flood, a crowd of diarrhoea and dysentery patients arrive at this hospital says staff nurse Moushumi Das. “Twenty to 25 people come for diarrhoea medicine everyday, and 4-5 of them get admitted,” she says. Das also notes that when a person of one region is affected by any of the above issues, at least 30 people from the same immediate neighbourhood are likely to be affected also. “There is a problem with diet here too. Villagers are mostly malnourished. If you do a blood test you will see their hemoglobin is low,” she adds. Sillyaberia shares the patient load with Janka, another rural hospital at a distance of around 3 kms. But Das says both hospitals are limited in scope. For treatment of more serious illnesses, villagers need to go to Contai (now called Kanthi) Sub-Divisional Hospital. Here the same river that periodically floods their land but is also an opportunity for livelihood poses a problem. Across Rasulpur from Nijkasba is Petuaghat, one of Bengal’s largest fishing ports. But the land does not lend itself to a bridge, making people dependent on ferries which come in 40-minute gaps and at night, not at all. “The car journey takes three hours, which is a problem if the patient is serious,” says Das. Das is the only person in that region that the reporters spoke to who spoke of the direct connection between climate change, hygiene and health.

“Maximum houses here have bathrooms now, but during floods, even those get submerged. It is a problem to use them then. So women do suffer,” she says. Barely an hour from Sillyaberia is the Nandigram Super-Specialty Hospital, the biggest healthcare centre in East Medinipur and one which had been in the limelight since inauguration. The hospital had been in the news recently after the Bengal CM, injured in Nandigram, gave it a miss and chose to admit herself at Kolkata’s SSKM Hospital. Sparsely furnished, the hospital, set up in 2017, still looks new. Its age is given away by a low hill of medical waste, with gloves and masks peeking out from colour-segregated bags, in its backyard.

The hospital superintendent Dr Adwaita Kumar Mudi notes at the outset, “First of all let me say, due to climate change we are seeing a lot of new diseases like respiratory distress and skin

diseases. There are some waterborne diseases too.” In Mudi’s experience, women mostly come with skin and nail diseases and leukorrhea, after floods. Mudi also claims that people have grown aware of climate change-driven diseases. While Mudi hasn’t received any directions from the health department, he believes plans must be in the offing to tackle specific climate change-inspired health challenges. “If the department asks for data, we will compile it and send,” he says.

Where Tridib Nagar functions as a virtual island disconnected from the advancements, financial complications and events of the urban world, Nijkasba lives in acute awareness of it. But while political considerations and the river Hooghly separates them, women of the two villages are united by poverty and an awareness that admissions of their own ill health will invite expenses they cannot afford. Both sets of women are essential to the fishing industry and both receive the least to compensate them for their roles. Both are cradled in the meeting points of two rivers – one set fiery with salt and the other with more water they can hold. Both live in quiet subservience to a process of change for which they can take no blame.

**West Bengal: Sunderbans: Foresters set up simulated audio of tigress’s roars to locate tiger**

<https://www.telegraphindia.com/west-bengal/sunderbans-foresters-set-up-simulated-audio-of-tigress-roars-to-locate-tiger/cid/1845786>

"Foresters in the Sunderbans Tiger Reserve on Saturday set up a recorded audio clip of a tigress’s roars over speakerphones in an earmarked area around Gosaba village in their effort to trap a tiger that entered the area late on Thursday. Jones Justin, deputy field director of the STR, said they were playing the roars of the tigress. The “unorthodox tactic” came about as usual ones of using live goats as baits near where the tiger is believed to be failed repeatedly, foresters said. “It is mating time and tigers can well be attracted by the roars of a tigress. Our teams are there with tranquillisers to capture the big cat. We have kept open the option to drive it away and so have placed four goats on the riverside,” added a senior forest official in the STR. The tiger reportedly first entered Chargheri village of Satjelia island in Gosaba on Thursday night and foresters installed nets to protect the human habitat from an attack.

However, early on Saturday morning, a villager found a pugmark near Mitrabari village of the island, 2.5km away from the tiger’s last known position. Foresters said as soon as the tiger’s new location was found, they shifted their team and netted the new area. Partha Halder, 45, a forester on duty, was suddenly attacked by the tiger and suffered minor injuries. “He received minor injuries but it helped us gauge the animal’s aggression. The forester is better now after treatment and has resumed duty,” said a forester. Another tiger was reportedly traced by a group of villagers in Kumirmari village in Gosaba on Saturday evening. It has been tranquillised, Justin said.

Fisherman death one of the two fishermen critically injured on Friday night near Kultali by a royal Bengal tiger in Haldibari jungles from a boat on the Bidyadhari river, succumbed at a Calcutta hospital on Saturday night. The tiger had jumped on the fishing boat on which the duo were coasting ashore at the time. The alleged maneater reportedly first tried to drag one of the fishermen inside the jungle, but Amal Dandapat, 50, and Khokon Munda, 45, despite their critical injuries fought the animal. The two injured fishermen, who are residents of Saktir More of Maipith coastal area, returned to Kultali during the early hours of Saturday morning after which local residents informed police and forest officials who took them to the nearby hospital. As their condition turned critical, they were later shifted to a Calcutta hospital, where Amal died on Saturday night. Local sources claimed Amal had critical injuries on his skull. Khokon's face was severely injured.

“We were moving slowly along the bank of the Bidyadhari River while using fishing hand-traps. When we reached the Rangmari Char, the tiger all of a sudden jumped on the boat. We tried our best to resist it. But it first tried to drag me. Both of us hit it with the hull of the boat. By then, the tiger was also desperate and it severely injured Amal.” Khokon, the survivor, said.

### **West Bengal: Fisherfolk allege TMC workers are threatening them to give up their land for the Digha-Mandarmoni Marine Drive in Purba Medinipur district**

<https://www.newsclick.in/Coastal-Villagers-Face-Threat-Livelihoods-Land-Forcibly-Taken-Away-Mamata-Dream-Project>

"West Bengal Chief Minister Mamata Banerjee's 29.5-km-long coastal road dream project in Purba Medinipur district of West Bengal, which will connect the four sea beaches in Digha, Tajpur, Shankarpur and Mandarmoni, not only threatens to disrupt the lives and livelihood of thousands of fisherfolk but also the fragile coastal ecology of the region. The road, being marketed locally as the Digha-Mandarmoni Marine Drive (Saikat Sarani), apparently to facilitate corporates, is being pushed by Banerjee on the grounds of tourism development.

The project at Mandarmoni is proceeding at a brisk pace, triggering apprehension about displacement and loss of livelihood among the residents of the coastal fishing villages and those affiliated to the four fish-landing points—locally known as Matsyakhotis—along the road stretch. Allegations of land occupation, mainly those handed out with temporary pattas to landless villagers for agriculture and pisciculture, without formal notice, paperwork and compensation have surfaced. Near Soula Bridge, which is under construction and where the Marine Drive will terminate, locals alleged to have been threatened by Trinamool Congress (TMC) workers not to enter their farmlands, which will be used for the project. “Local workers of the Trinamool Congress threatened us not to enter our farmlands.

Standing orders were issued verbally without paperwork or compensation. Now, my land is being filled up with fly ash for construction,” alleged Subol Maikap (57), who owned 0.48

decimal of farmland jointly with his brother in Soula village, in a conversation with Newsclick. Niranjan Dalai (72), another resident of Soula, alleged that his son-in-law Shibaji Jana was similarly disenfranchised from 0.8 decimals of farmland. “Some residents have been compensated. Narayan Jana, a TMC worker, was compensated but not us,” he said. In certain instances, land owned privately for generations has been allegedly occupied. Soula resident Haripada Jana (62) alleged that two acres belonging to his family were occupied without any compensation.

“This land was in the name of our family members Basanti Jana and Durga Jana. We were paying rent against the land,” he told Newsclick. Soula No. 2 Matsyakothi is one of the larger fish-landing centres along this stretch. “At least, 24 members of our Matsyakothi have lost agricultural land they owned through temporary pattas. We regularly paid taxes against these land parcels, which were under cultivation. Suddenly, we were asked to hand them over without any compensation or package,” Janmajeya Dalai (50), an office-bearer of Soula No. 2 Matsyakothi, said. “Our livelihood depended on this land. Small-scale agriculture and fishing are the main sources of livelihood in this region,” Dalai said adding, “it was only with the efforts of local CPI (M) leader Shakti Sasmal that the pattas were issued in 2008.” The Digha-Shankarpur Development Authority, an autonomous body under the Department of Urban Development and Municipal Affairs, is in charge of the project.

The three bridges along this stretch—at Nayakhali, Jalda and Soula—cumulatively account for 4.2 km of the project and are being constructed by the West Bengal Public Works Department (Roads). “But neither of these agencies nor the district administration of Purba Medinipur shared with us the plan or the alignment of the project. The land is being taken away bit by bit with the entire project being executed surreptitiously. Without any public hearing, landowners were given different reasons for the takeover,” alleged Gouranga Sasmal (32) of Soula No. 2 Matsyakothi.

However, the Digha-Shankarpur Development Authority said that the road project was planned to help tourists visit all four beaches in one day. According to it, 60% of the land needed for the project is revenue land while the remaining belongs to private owners. Has the TMC adopted a surreptitious method of land takeover to avoid possible conflicts? “It has been extremely difficult for us to convince the villagers to part with their lands and that the road project, underway since 2016, will boost tourism in the region and ultimately benefit them,

”Manash Mondal, executive officer, Digha-Shankarpur Development Authority, told the Newsclick. Explaining why the final layout map of the project has not been shared with the villagers, Mondal said, “We are laying out the alignment of the road in accordance with the progressive availability of land parcels. And this is also the reason that the width of the road ranges between 3.75 metres at some places to 5.5 metres at others. Nevertheless, we have set March 2022 as the completion date of the project.” In the absence of clarity, the villagers feel

that a substantial portion of the road will possibly be aligned parallel to the sea coast on a stretch of the beach that has already been turned motorable with the constant movement of light and heavy vehicles.

“Following the mushrooming of hotels and beaches in Mandarmoni in the last 15 years, vehicles constantly ply on a stretch of the beach between the sea and the hotels. Notwithstanding the fact that the stretch is within the hightide line, where seawater ingression is very common, the Marine Drive is being constructed over it to facilitate hotel business. All fish-landing centres will be shut down,” said Chandan Bar (38), a fisherman and former member of the Purba Rania panchayat. Besides employing the men of the coastal villages, who fish using their small motorised boats, the centres have the womenfolk collecting, drying, sorting and packaging fish. Workers at the Chamasuli Matsyakothi, in Arakhbaniya, fear that large parcels of land along the coast used for drying fish will ultimately be taken over for the road project if it is aligned along the beach. The locals allege that while hotel owners flattened sand dunes (from which Mandarmoni derives its name) and cleared large swathes of mangroves for construction, the constant movement of vehicles on the beach has also caused the near-total extinction of red crabs. Very few red crabs are visible at Jalda, near Mandarmoni Mohona, where one of the bridges is being constructed. The bridge is next to the Tajpur Jalda Matsyakothi, which, as per fish workers unions, is the largest Matsyakothi belonging to small motorised boat owners.

“More than half the land belonging to our fish-landing centre has already been taken away. Our fish yield has declined drastically due to mechanised fishing by large trawlers. We had been requesting the government to not allow large mechanised trawlers for, at least, four months so that small fishermen get their minimum yield. Instead, the government is going ahead with this project, which will seal the fate of small fishermen,” said Santosh Bar (43), a fisherman at the Jalda Tajpur Matsyakothi.

Officials of Digha-Shankarpur Development Authority and the West Bengal PWD (Roads) avoided answering questions about the status of Coastal Regulation Zone (CRZ) clearance for the project and the three bridges. A West Bengal Irrigation Department official told Newsclick that the Soula and Nayakhali Bridge are being constructed across the Pichaboni and NDC reservoirs (locally known as Khals). These Khals, constructed to drain excess flow from the British-era Odisha Coast Canal into the Bay of Bengal, have sluice gates that prevent overflow into coastal habitations.

The locals said these Khals fall within the hightide line and pointed at artificial embankments constructed by the irrigation department to prevent overflow of tidal water into coastal villages. The Jalda Bridge is being constructed near Tajpur, where, as per the villagers, a minor seaport has also been planned. Land is the biggest bone of contention among the locals, the government and the resort owners in these sparsely populated coastal villages. The villagers alleged that the revenue land, issued through temporary pattas for agriculture or pisciculture, was taken away

from them in shady deals using deeds of business partnerships executed on notarised stamp papers. “Subsequently, separate agreements will be signed with these revenue landowners for acceptance of a one-time cash payment in lieu of foregoing claims on future profit accrued from business ventures.

These agreements will then be ratified by the Panchayat Samitis. A lot of wealthy and influential businessmen from Kolkata and other cities, including film stars and politicians, have invested money in these hotels and resorts,” alleged Srikanta Das (64) of Maa Kali Fishermen’s Association at the Dadanpatrabad Matsyakothi. Scores of hotels and beach resorts—most of them allegedly illegal for having been constructed on revenue land without government clearance—have mushroomed in Mandarmoni in the last decade. Debdulal Das Mahapatra, secretary, Mandarmoni Hoteliers Association and an active TMC member, was also on the board of one of the Panchayat Samitis between 2008 and 2013, when several land deals were ratified. Mahapatra claims that the government has been working towards improving the infrastructure of the region.

Mahapatra’s account proves how largescale commercial—and potentially polluting—activities are under way in the region without necessary safeguards. “Approximately, 120 hotels are affiliated to our organisation. A separate electricity substation has been set up for Mandarmoni. Pipelines are also being laid out for transporting potable water. Currently, the hotels extract groundwater for potable use and their swimming pools. Solid waste is disposed of in other ways in the absence of a waste disposal management system.

Due to the lack of a sewage disposal system, hotels have their own septic tanks,” he told Newsclick. Mahapatra further claimed that all hotels and resorts have set up effluent treatment plants that treat effluents to water lawns and gardens. “Neither solid waste is not dumped nor are effluents discharged into the sea.” The hoteliers association too evaded questions about the status of CRZ clearance for their properties. Extensive damage was caused to these hotels and resorts after seawater rushed into their premises breaching the artificially constructed guard walls during Cyclone Yaas in May. The damaged roads and mangled wooden boats still bear testimony to the devastation caused by the cyclone. Purnendu Kumar Maji, the district magistrate of Purba Medinipur, told Newsclick that he will enquire into the allegations of the forcible takeover of land.

“We will seek information at the block level regarding the allegations of forcible land takeover and take appropriate action if necessary,” he said. “We have already banned construction of hotels and resorts in the region. We are planning to take further action against this hotel and resort owners because their properties fall within the CRZ area. We are consulting environmental experts too in this regard because the sea coast has moved further inside in the last few years,” Maji added. A substantial portion of the Marine Drive falls within Ramnagar Assembly segment.

Despite repeated calls, state fisheries minister Akhil Giri, the sitting TMC MLA from Ramnagar, was not available for comments.

Land sharks have entered the fray with property sale-and-purchase kiosks at various places in the villages. Srikanta Das said that land sharks are desperately trying to convince the villagers to part with their land on the pretext of tourism development. "The youths have been told they will have a bright future once they give away their land and that European women will shed their clothes on these beaches to tan themselves," he added. Currently, the seacoast offers more than just the potential for tourism. "The marshes along the seacoast offer good-quality reeds. We collect bunches of reeds which are woven into small baskets for carrying flowers. It is our source of livelihood," said Pramila Behera, who was leading a group of half-a-dozen women who had travelled from Chandaneshwar, in Balasore district, across West Bengal's interstate border with Odisha, to collect sea reeds near Soula village.

### **West Bengal: State to start cultivation of unconventional fishes through SHGs using solar technology**

<http://www.millenniumpost.in/kolkata/state-to-start-cultivation-of-unconventional-fishes-through-shgs-using-solar-technology-462244>

"The state Panchayats and Rural Development (P & RD) department will start cultivation of some unconventional fishes through its Self Help Groups (SHGs) by using solar technology in running aerators for maintaining the level of oxygen in water. West Bengal Comprehensive Area Development Corporation (CADC)—an autonomous organisation under P& RD department which is executing this project has decided to install such solar devices in a number of ponds that have been earmarked for these unconventional fish cultivation. The farmers will not have to pay anything for this purpose. "Till date, we have been using either petrol or diesel for running machines for maintenance of the oxygen level in water. Issues of power cut and high price of diesel was a deterrent. Now we will be using aerators which are priced at around Rs 40,000 each for increasing the oxygen level in water.

The machines are being procured from China and Taiwan. Financial assistance has been received under Rashtriya Krishi Vikas Yojana for this project. 80 such machines will be procured as of now and extended in phases with availability of funds," a senior CADC official said. The technology will be fruitful in cultivation of any type of fish that can grow in ponds or large waterbodies. Manipur's Pengma fish which is similar to that of Puti fish, Amur fish which has a similar look as a Rohu fish, Milk Fish popularly known as Changos Changos are some of the fishes that can be effectively cultivated. However, in case of big ponds, the change in weather conditions results in deficiency in oxygen level so the risk factor is very much there. Hence, if aerators can be used to increase the oxygen level in water there is hardly any risk. Solar technology for running aerators reduces the cost. According to experts, a little bit more care can

be instrumental in successfully cultivating these unconventional fish varieties then we will have other options besides the conventional Rohu, Katla and Mrigel variety of fishes.

**West Bengal: Big Poya is being caught in the sea, fishermen are smiling**

<https://dailyhover.com/big-poya-is-being-caught-in-the-sea-fishermen-are-smiling/>

"Big red and black poya fish are being caught in fishermen's nets while fishing in West-South Bay of Bengal in Maheshkhali and Kutubdia upazilas of Cox's Bazar. These fish have been caught for four or five days. Later, the local fishermen were very happy as they took each red and black poya to the market and sold it for one to six lakh rupees. The fishing boat named FB Allah Dan, owned by Mohammad Shahjahan, a resident of West Suturia in Dhalghat Union of Maheshkhali Upazila, went fishing in the sea on Wednesday morning. While fishing in the sea at 10 am, a black poya fish weighing 18 kg was caught in their net. The fishermen returned with the fish around 12 noon. Later, they took the fish to the local Suturia market and sold it to a local trader for 1 lakh 60 thousand rupees. Fishermen are happy to get good prices. Last Tuesday morning, a resident of Paran Sikdarpara village of Kairabil union of Kutubdia upazila went fishing in the Bay of Bengal by boat. While fishing in the sea at around 3 in the afternoon, a big red poya was caught in their net.

On Wednesday morning, he sold the red poya weighing 28 kg for 1 lakh 60 thousand rupees. While fishing in the sea, a black poya weighing 28 kg was caught in a fishing boat owned by Chaidul Haque, a resident of Saira Dale area of Matarbari union in Maheshkhali upazila on Saturday evening. The fish was then sold at the local Sierra Dale market for seven lakh rupees by fisherman Chaidul Haque. Two days earlier, on Thursday, the fishermen of Chaidul Haque's boat caught 15 black poyas.

He later took the fish to Fishery Ghat in Chittagong and sold it for Tk 11 lakh. According to local fishermen, a black poya weighing 28 kg was caught in the fishing boat of Chaidul Haque, a resident of Syra Dale area. Later he sold the fish for seven lakh rupees. Large black and red poyas have been caught in fishermen's nets for several days. The fishermen are very happy about this incident. In this regard, Maheshkhali Upazila Fisheries Officer Mohammad Abdur Rahman Khan said, fishing in the sea is stopped twice a year for several years. Due to this, breeding in the sea is increasing and small fish are getting opportunity to grow. The small fish are caught in the nets of fishermen in the sea. As a result, the foreheads of the fishermen were opened as big black poya and red poya were caught.

**West Bengal: Villagers demand 'concrete' dyke in East Midnapore**

<https://www.telegraphindia.com/west-bengal/villagers-demand-concrete-dyke-in-east-midnapore/cid/1842910>

"Delay in repairing a semi-finished 3km stretch of mud embankment between Sankharpur and Tajpur in East Midnapore's coastal zone has prompted some villagers to demand a "concrete" dyke. Residents and farmers have alleged that damage caused by Cyclone Yaas in May, followed by a squall during Cyclone Jawad, have "endangered" homes along the coast and "salinated" several agricultural ponds and fields. "We are tired of the same routine of being evacuated to a cyclone shelter and then being shifted back. We want assurance of safety, which can only come in the form of a well-constructed, concrete embankment along the coast," said Sadhan Gorai, 57, a resident of Bashpur village whose home was damaged by Cyclone Yaas. Gorai has been unable to repair his home owing to "constant" flooding "at the slightest spell of rain" and has been staying at a rented accommodation nearby for the past six months. Earlier this week, a section of villagers led a protest march to the Talgachhari-II gram panchayat office to demand a concrete embankment. Among the protesters were several fishermen whose ponds and fish had been ruined by overflowing seawater. Panchayat pradhan Biswajit Jena has now requested the irrigation department to conduct an immediate survey. "Yaas hit our area hard. More than 5,000 homes across 24 villages, and lots of agricultural land..."

The villagers' demand is justified," he said, adding that the irrigation department had given an "assurance" to address the problems by December-end. The protesters, however, are not convinced. On Friday, residents of the area said this was another attempt by the administration to "buy time". "We are well aware of how long such a project will take. It seems they are in no rush to build a concrete embankment before next monsoon," said Purna Maity from Jaldah. Maity lost over 2.5 bighas of farmland to flood waters this month.

He was among those evacuated before Cyclone Jawad. "These evacuations are increasingly beginning to look like an eyewash," he said. Asked, Contai irrigation department executive engineer Uttam Hazra said the blueprints for the embankments were taking time. "The bank is a little irregular in parts, so initially we thought that land reclamation would have to be done. But we have found out that is not the case. We are hopeful of decisive action in December, itself" he said. Fisheries minister and Ramnagar MLA Akhil Giri echoed Hazra, saying: "We are aware of the irregularities in this particular beach area. But after those doubts were recently allayed, the irrigation department has been asked to start work immediately."

### **West Bengal: Dead fish found floating in Kolkata lake: Officials mull infusing liquid oxygen in Rabindra Sarobar**

<https://www.indiatoday.in/cities/kolkata/story/dead-fish-found-floating-in-kolkata-lake-officials-mull-infusing-liquid-oxygen-in-rabindra-sarobar-1886987-2021-12-12>

"Almost two months after dead fish were found floating in Rabindra Sarobar -- an artificial lake surrounded by a park in the southern part of the city -- the Kolkata Metropolitan Development Authority (KMDA), its custodian, said it was mulling the option of infusing liquid oxygen in the

waterbody. Antara Acharya, the CEO of KMDA, said a committee of experts has been formed to explore ways of upping the oxygen level in Rabindra Sarobar - home to various species of fish and birds. "We are in the process of holding talks with firms that specialise in infusing liquid oxygen in water.

We are also exploring other options in consultation with experts. A decision will be arrived at in due course of time," she told PTI. Over 30 dead fish were found floating in the lake in the third week of October, following which the KMDA carried out an inspection and found out that the oxygen level in the lake has dipped. Three fountains were immediately installed at the waterbody to increase the oxygen level, but the rowing club in the vicinity raised objections, stating that it could lead to hazards for the athletes.

The KMDA subsequently removed the fountains. Asked if siltation could be a reason for depletion of the oxygen level in the lake, Acharya said, "It is an old lake, one must remember. Such things happen over a period of time. "We have to keep in mind that a delicate ecosystem has developed in that area over the years. Things have to be done in a calibrated manner, not in haste or overnight." Environmentalist and one of the crusaders of 'Save Rabindra Sarobar' campaign, S M Ghosh, said the depth of lake water has gone down to eight feet from 20 feet. "We suggest the de-siltation be done immediately. The silt should be deposited on the mini island that forms a part of the complex. The silt will make the land there more fertile," Ghosh added.

### **West Bengal: Over a thousand families homeless as waters of the Ganges engulf villages in Malda**

<https://en.gaonconnection.com/ganges-malda-west-bengal-homeless-families-rehabilitation-flood/>

"Baidyanath Mondol slowly made his way to the banks of the Ganges, just to look at his home that now stands marooned in the middle of the river. The frail 70-year-old from Malda, West Bengal, said he came to Sarkartala, where his village once stood, every single day, ever since September 12 this year, when the river bank collapsed and the waters flooded his house and washed everything away. Baidyanath now lives with his daughter at Baishnabnagar village, five kilometres away. More than a thousand families in Malda district faced the same fate as Baidyanath and have lost both their homes and all their belongings. "We did not even have the time to shift our belongings to a safer place," Hari Ghosh, an inhabitant of Durga Ramtala, on the river banks, told Gaon Connection.

“We have never seen such devastation before. The erosion and flooding began at about six in the morning [of September 12] and by the evening over 350 families were displaced,” 52-year-old Hari, who is now living at a local school, added. He said he had lost three bighas of land to the land erosion. “Since September, large parts of Sarkartala, Mukundatala, Ghoshtala, Chinabazar, Bhimagram and Lalutala villages under Birnagar 1 gram panchayat of Kaliachak 3 block have been washed away,” Hari said. As many as 350 buildings including schools, temples, mosques and homes were swallowed up in no time by the advancing Ganga river. Local people fear there will be little left of their villages. “It looks like the entire Birnagar will disappear in the next few months,” feared Sumanta Mondal from Mukundatala. The 34-year-old is living with his family at a temporary shelter in a local school ground along with 120 other families. “We are sleeping under the open sky,” Sumanta added. According to the 2011 Census, 54,830 people inhabit Birnagar grampanchayat 1 & 2. Barrage of woes many of the flood victims at Birnagar 1 gram panchayat hold the Farakka Barrage Project responsible for their misery. Farakka Barrage is located in Murshidabad and Malda districts of West Bengal, about 300 km north of Kolkata, the state capital. It is one of the largest barrages of its kind in the country having a feeder canal for a flow of 40,000 cusec and whose bed width is wider than that of Suez Canal.

The main objective of the Farakka Barrage Project complex is to divert an adequate quantity of Ganga waters to the Bhagirathi-Hooghly river system through a 38.38 km long feeder canal for preservation and maintenance of Kolkata Port by improving the regime and navigability of the Bhagirathi-Hooghly river system. The increased upland supply from Ganga at Farakka into Bhagirathi reduces salinity and ensures sweet water supply to Kolkata and surrounding areas. According to the inhabitants of Chinabazar in Birnagar panchayat, the flooding has time and again affected over one million people of Malda and Murshidabad districts, directly or indirectly. And they blame the Farakka Barrage for their woes.

“We heard that a number of lock gates of the barrage were opened due to heavy rains in North Bengal and Sikkim, but once local villagers agitated, they closed these gates and the water level receded,” Bhaskar Mondal, a local social worker, told Gaon Connection. Residents of Chinabazar and Lalutala lost their houses and lands this year in October. Over 80 houses and the local Jama Masjid in Chinabazar, which was over 100 years old, were washed away. The homeless have shifted to a madrasa and three government schools nearby and few families are living outdoors with nothing more than polythene sheets providing them shelter. “The affected villages fall six to seven kms along the upstream of the Farakka Barrage, and river bank erosion in the upstream region happened due to back pressure of water,” Kolkata-based Sugata Hazra, professor and former director of School of Oceanographic Studies, Jadavpur University, told Gaon Connection.

“But the incidents of such erosion increased after construction of the barrage in the 1970s. Moreover, water storage capacity of the barrage has reduced in recent times,” he pointed out. Politicising the crisis the current situation has triggered a political tug-of-war between the ruling

Trinamool Congress (TMC) and the opposition party in the state, Bharatiya Janata Party (BJP). Sabina Yeasmin, state irrigation and waterway minister of state, alleged that 12.5 km upstream and 6.9 km downstream of the barrage fall under central government jurisdiction and the state government has apprised the centre of the problem. “We sat with the central government on multiple events and discussed the erosion issue with them. The barrage authority assured us about mitigation measures but the work has been very substandard and as result our embankments reconstruction works have also been affected due to them,” Yeasmin told Gaon Connection. “Since 2016, barrage authorities have been placing sandbags to stop further erosion and they reconstructed the eroded river bank in 2018 at a cost of nine crore twenty one lakh rupees.

They assured us that we would be safe from further erosion, but their work could not save the riverbank,” Swadhin Sarkar, a former member of legislative assembly and BJP leader, told Gaon Connection. Sarkar is also an erosion victim and asserted that it was unusual to believe that water flowed upstream after opening lock gates but it happened for three days in mid-September when maximum erosion took place.

“The erosion began in 2016 and the river bank has given way, and this year alone it has breached at least thirteen times, two kilometres at Birnagar 1 gram panchayat,” Sarkar added. He complained that none of the recent erosion victims had received proper rehabilitation help and that instead of politicising the matter, the TMC should play a proactive role in helping the distressed villagers. Looking for another home

“We are aware of the situation and are looking for alternative accommodation for the erosion victims,” Mamun Aktar, block development officer, Kaliachak 3, informed Gaon Connection, but declined to share any other information. But, a local source, who did not want to be named, said that the local administration had identified land – 600 metres away from the river bank – and planned to distribute the land among 127 families. But, things are stalled because that area has also been marked as a red zone by the Farakka Barrage authority, which means the area might be swallowed up by the Ganga anytime. Meanwhile, 65-year-old Dharani Ghosh from Mukundatala village, which is just a pile of sticks and stones and broken walls, now lives in the open, at a school ground in Chamagram.

“My rice husk, house and ten bighas of paddy field were washed away in front of my eyes, in a matter of minutes. We couldn’t do anything except take our cow with us when we fled,” she told Gaon Connection. Gayatri Ghosh from Durgaramtala, has taken shelter at a school in Birnagar, too. The 34-year-old, along with her husband and four children, has been living there since September. “We were provided ten kilograms of rice, two kilograms of chira (flattened rice), two steel plates and bowls as a one time relief. We have no idea what we should do next or who we should approach for help,” Gayatri told Gaon Connection.

“We are surviving on loans, but lenders are reluctant to give loans to us as we have no land to mortgage,” the 34-year-old said. Gayatri’s husband, a migrant worker, returned from Kerala in September soon after the disaster and hasn’t returned since. However, Chandana Sarkar, local MLA of Baishabnagar constituency, claimed that she had spoken to the chief minister in the state about the situation. “All the affected families are provided with necessary relief materials and we are trying to rehabilitate them soon,” she told Gaon Connection. Schools, turned into shelter homes, cannot resume classes more problems arose when government schools began physical classes for students of standard nine to eleven on November 16. The Chamagram High School in Birnagar has not been able to open its classrooms to students as nearly 500 homeless families are still living there. “The school has sixteen classrooms where over hundred and twenty families have been living since September.

All classrooms and corridors are occupied except the headmaster’s room,” Shaktipada Sarkar, headmaster of Chamagram High School, told Gaon Connection. “While we have been asked to run the school, we do not have a specific direction on how to operate in this situation. We have already taken up the matter with the block administration and are waiting for their intervention,” he added. Renuka Roy, who shares a classroom with a few other families at the Chamagram High School, said that the school authority had cut off the power connection after the homeless families refused to leave the school.

“We lost everything in the river, where do we go now? We have neither land to graze our cows, nor space to even defecate,” the 70-year-old complained. In response to this matter, Nishikanta Roy, the husband of the local panchayat pradhan, Birnagar 1, said, “The school authority received an electricity bill of nearly seventy thousand rupees for three months. There was no other option other than disconnecting the line. Now these families have resumed their power connection on their own,” he added.

A social worker Chamagram, who arranged relief for the homeless families in the past three months, said that the residents were now desperate to find safer places but the price of lands in the region has increased drastically. “On one hand, they have nowhere to go. On the other hand, the situation has taken away the right of over 600 school students to attend their classes,” Bhaskar Mondal said. No policy for environmental refugees there is no central and state level policy yet to rehabilitate these erosion victims. In an administrative review meeting of Malda district on December 8, Mamata Banerjee, chief minister of West Bengal, said in a public meeting that the central government should rehabilitate Ganga river bank erosion victims under the Namami Ganga project.

“Immediate implementation of riverbank protection measures with appropriate technology and rehabilitation plan for environmentally displaced people or resettlement policy for these communities can solve the issue. But the state doesn’t have any resettlement policy for environmentally displaced people,” Sugata Hazra of Jadavpur University said. He went on to

elaborate that West Bengal was worst affected by sea level rise and river bank erosion, and there should be a state specific rehabilitation plan for sea level rise or river bank erosion victims. “The state has rehabilitated a few displaced people in Sunderbans and Malda-Murshidabad in the past but they did not receive any rehabilitation package as there is no state level policy. As Farakka Barrage is a developmental project, the victims should also get rehabilitation packages under project-affected displaced communities,” the professor pointed out. According to him, it was of utmost importance and urgency that the state government should have a rehabilitation plan for the victims. “The government should also negotiate with the National Disaster Management Authority to demand a fair share from its funds or seek World Bank assistance to address such a large-scale displacement,” said Sugata Hazra. Farakka Barrage authorities did not respond to emails sent to them seeking their views on the issue.

### **West Bengal: Wet December blow to dry fish trade in coastal districts**

<https://www.telegraphindia.com/west-bengal/wet-december-blow-to-dry-fish-trade-in-coastal-districts/cid/1842623>

"Around one lakh fishermen and businessmen involved in the trade of dry fish in the coastal districts of South 24-Parganas and East Midnapore are staring at huge losses owing to the untimely December downpour triggered by Cyclone Jawad, prompting the state government to assess the damage and work out a compensation plan. “Dry fish traders have faced huge losses because of the heavy rainfall, which is uncommon in December. We have directed our officials to be on the ground to assess the losses.

We have called a meeting on December 14 to discuss the role of the government to help the affected fishermen and traders and find ways to compensate them,” fisheries minister Akhil Giri said on Thursday. Dry fish trade is a major driver of the economy in the two coastal districts. There are some 40 large units in South 24-Parganas and East Midnapore, catering to the livelihood of around one lakh fishermen and traders. People involved in the trade said tonnes of fish kept to dry had gone bad in the rain between December 5 and Thursday afternoon.

“We usually dry fish from November as the chance of rain recedes by then. We did not expect such heavy rain in December, the peak time for our business. We had to throw away rotten fish. I will incur losses of no less than Rs 10 lakh,” said Rabiul Islam Shah, a trader of Baliara, South 24-Parganas. An official in the state fisheries department said the process to assess the losses began although rain continued to lash coastal districts on Thursday. He said the estimated loss to the dry fish trade would be no less than Rs 200 crore. Amin Sohel, president of a dry fish traders’ association in Contai, East Midnapore, said they desperately needed government help as the losses were “too heavy”.

Officials in the fisheries department said the annual volume of the dry fish business in Bengal was Rs 800 crore. South 24-Parganas has 15 official dry fish units at Sagar, Kakdwip and

Namkhana, and at least 20 more without official permits. East Midnapore has 25 dry fish units in Shankarpur, Contai, Khejuri and Mandarmani. Fishermen dry the produce under the open sky on sea beaches for up to 12 days at a stretch before they are packed for export to Bangladesh, Nepal and Bhutan. Traders in South 24-Parganas also sell their produce to Assam, Mizoram and Manipur. “December rain has hit the dry fish business hard. We plan to set up a permanent storehouse in Sagar and Kakdwip and will take up the issue with higher-ups,” said Jayanta Pradhan, additional director of fisheries (marine), South 24-Parganas.

### **Odisha and West Bengal: Weak dyke floods Mousuni despite Cyclone Jawad fizzling out, 5000 affected**

<https://www.downtoearth.org.in/news/climate-change/weak-dyke-floods-mousuni-despite-cyclone-jawad-fizzling-out-5000-affected-80570>

"Some 5,000 people had to be shifted to relief camps after the remote Mousuni Island in the Sundarbans region flooded due to the collapse of an embankment. This despite the Cyclone Jawad weakening and fizzling out December 5, 2021 without landfall. A poorly built sluice gate on the Chinai River, near its confluence with the Bay of Bengal, gave away on the morning of December 5 on Mousuni Island, locals said.

The sluice gate collapse happened just as the high tide of nearly 18 feet came in even as heavy rain due to Jawad battered the area. “The river and land has become one and will remain so till the embankment is restored,” a local said. Mousuni is located on the western fringe of the Indian portion of the Sundarbans in West Bengal. Most of the affected residents have been shifted to the island’s flood shelter and a high school. This, even as saline water continues to make ingress every time a high tide strikes. What happened? Jawad, which was expected to hit Puri district in Odisha on the afternoon of December 5, turned into a deep depression and did not cause the damage it was predicted to.

The depression was predicted to move north-eastwards towards West Bengal, which it did. It reached the Indian Sundarbans on the morning of December 6, with a wind speed of around 40 kilometres per hour. But its impact had been largely minimised by noon, GK Das, head of the India Meteorological Department (IMD) Kolkata told this reporter December 6 afternoon. “We do not expect any more damage and are trying to repair the damage already incurred,” an official from local administration said.

However the damage in Mousuni was mainly caused December 5, when the heavy rain due to Jawad and high tide caused part of a newly built embankment to give way. “About 50 metres of the embankment near the confluence of the Chinai river with Bay of Bengal has been damaged in the Baliara mouza due to combination of Jawad’s impact as well as high tide,” Santanu Sinha Roy, the block development officer of Namkhana block, where Mousuni is located, said. A mouza is a type of administrative district, corresponding to a specific land area within which

there may be one or more settlements. Locals said a smaller embankment was also breached in the Koylagheri area of the Mousuni mouza, which triggered inundation. The residents attributed the embankment breach to poor construction design.

“There must have been a fault in the construction. It needs to be investigated. If the embankment were strong, the suffering of the people could have been minimised,” Sahadeb Maity, a local, said. Sinha Roy admitted that “there is an issue with the sluice gate” but assured that the irrigation department had already started repair work. “The embankment that has given way, was already weak,” he said. An official from the irrigation department said the breach would be fixed within two weeks.

Another official claimed that “damage could be minimised as tourists have not been allowed in Mousuni as a precaution to Jawad”. Innumerable hotels have come up in the Baliara mouza near the Mousuni beach, flouting environmental norms, in recent years. This is close to the area where the embankment has been breached. On the frontline Mousuni, sandwiched between Gangasagar and Bakkhali, is one of the most vulnerable islands in the Sundarbans. It is often showcased as a benchmark of increasing climate impact in the Sundarbans area.

The Sundarbans are also topographically positioned below sea level and need embankments to prevent high tides from making ingress into settlements. This reporter spoke to a range of people across the Sundarbans and found that smaller breaches or overtopping of embankments had occurred in various places on Sagar Island, Kakdwip, Kumirmari island of Gosaba block and also on the embankment of the Goureshwar river in Hingalgunge.

“We have shifted about 25,000 people to safer places,” P Ulganathan, district magistrate of South 24 Parganas, said. Mousuni, consisting of four mouzas, has been severely affected in the last two years by repeated cyclones — from Bulbul to Amphan and then Yaas. Jawad has affected two of the four mouzas. Mousuni has lost about a sixth of its 28 square kilometre area to the rising sea in the past 50 years, according to studies done by the oceanography department of Jadavpur University, Kolkata. This, even as the population has increased two-and-a-half times. “The rate of relative sea level rise is about 8-12 millimetres per year, as measured at Sagar island adjacent to Mousuni. This is three to four times more than the global average,” Sugata Hazra of the oceanography department, said.

“Disaster-prone areas like Mousuni are almost like punch bags,” Sanjay Vashist, director of Climate Action Network, South Asia, said. “They keep taking punches and often don’t get the chance to recover,” he added. Cyclones Amphan, Bulbul and Aila, all made landfall within 25 km of Mousuni, according to IMD. “It’s an extremely rare event and underlines the acute vulnerability of the area,” Anurag Danda, environment expert from WWF India, said. Mousuni’s Panchayat has found that 93 per cent of the 6,500-odd families on the island and 80 per cent of houses were affected multiple times in the last two years. Displacement has become routine in Mousuni, even for the dead. “This is my fourth house during the last one decade. Even the land

used to bury the dead has not been spared,” Muslima Bibi of Baliara, said. “Over 1,500 families have been displaced from vulnerable pockets of Baliara, Kusumtala and Bagdanga in the past 15 years, many of them, multiple times,” an elderly resident said. Many parts of the island are still without embankments despite residents having appealed for them.

“The embankment has still not been built. The Baliara mauza is flooded with rising seawater every year. The Kusumtala and Bagdanga mauzas are sinking, as well as part of the Mousuni mauza,” a group of residents wrote to Mamata Banerjee, chief minister of West Bengal, sometime back. About 17 km of the 29 kilometres of embankment around Mousuni were either non-existent or highly vulnerable, locals said. “Though the state government is doing what it can, we need national and international support to at least partially make repair the damages the Sundarbans have suffered as a result of changing climate,

” Javed Ahmed Khan, West Bengal’s minister-in-charge of disaster management, said. “Despite facing severe and repeated climate impacts over the last many years, the vulnerability of people living in Mousuni and elsewhere in the Sundarbans has not yet been recognised. We need to push for more support for the affected people through the international mechanism,” Harjeet Singh, senior advisor of Climate Action Network International, said.

### **West Bengal: 527 fishing boats back to shores before Cyclone Jawad**

<https://www.deccanchronicle.com/nation/in-other-news/061221/527-fishing-boats-back-to-shores-before-cyclone-jawad.html>

"The Indian Coast Guard (ICG) has shepherded 527 fishing boats to sheltered locations in two states during its elaborate measures to tackle Cyclone Jawad which lost its strength in the Bay of Bengal on Sunday before moving towards the eastern coastline of the country. A senior officer of the ICG (North East regional headquarters) informed that all the fishing boats in West Bengal and Odisha have been accounted for and reported to be safe in harbour, ""due to unstinted and preemptive efforts of ICG in coordination with respective state governments.

"" Additionally, he said, ""Around 120 fishing boats from Andhra Pradesh were directed to enter Gopalpur and Paradip in Odisha for shelter. 12 ICG response teams are at standby with contingency gears and equipment for immediate response. Continuous broadcast of weather warning by ICG ROS requesting mariners at sea to take shelter. Close coordination is being maintained with all stakeholders."".

### **West Bengal: No home for Ghoramara island’s climate refugees**

<https://twocircles.net/2021dec03/444291.html>

"The migration, poor living conditions, and relentless washing off of houses have made climate refugees out of the islanders of Ghoramara in Sunderbans delta of Bay of Bengal. While the

issue has received international traction, no serious program has been put in place for them. Without proper rehabilitation and improved living conditions, the future of the coastal community looks bleak.

A lot has been written about the Ghoramara island located in the South 24 Parganas of the eastern Indian state of West Bengal – however, the lives of its residents hasn't changed for better. The island, located in the Sunderbans delta where the saltwater of the Bay of Bengal combines with freshwater from three Indian rivers – Ganga, Brahmaputra, and Meghna, is known to be an early example of the consequences of climate change. Located just 30 kilometres north of the Bay of Bengal, the rising sea levels have caused erosion of land, thereby shrinking the size of the island year after year. The island has shrunk to less than half its size and is currently less than 5 square kilometres large. This is because the sea level rose from 2.26mm every year from 2002 to 12mm in 2014 and again 2.9mm in 2019, as opposed to the national average of 1.7mm increase in a year.

Other islands on the western side of the Ganga estuary such as Ganga Sagar and Mousumi are experiencing a similar fate, although not as rapidly as in Ghoramara. The Lohachara, Suparibhanga, and Bedford- other islands in the delta region, have vanished into the sea in recent years. The shrinking island has caused a decrease in its population of 5,000 in 2001 (Government of India census) to less than 3000 in recent years. The 2001 data marks a huge dip from an estimated 40,000 population in the 1960s. Folklore suggests that Ghoramara was given its name after a tiger in the region killed an Englishman's horse. The colonial authorities settled the native population on the island and gave them the job of watching over enemy ships arriving near the coast.

Post-independence, the primary occupation of the islanders has been rice and betel cultivation; and fishing, and prawn seed collection. However, in recent years, forced to migrate and leave behind their land and livelihood, the ex-residents of the island find themselves in acute socioeconomic distress. Residents from Ghoramara are moving out to the nearby islands, especially Ganga Sagar, the largest island in the archipelago that saw a decadal population increase of 20.38% between 2001-2011. Anjani Kapoor, a researcher at the City University of New York carried out a capstone project on the Ghoramara Island, the outcome of which is a documentary film *Inching Closer*. The paper describing the purpose of the project brings up the question of the disproportionate burden of rising sea levels faced by Ghoramara island as compared to other nearby islands like Nayachar or Jambudwip. The paper suggests that while the role of natural force in reshaping the island cannot be disputed, it has been pointed out that port activities and improper dredging have resulted in rising sea levels.

The paper further quoted the work of author and journalist Anuradha Sengupta who has written that, “the problem started in the early 1980s when the Kolkata Port Trust started building several

underwater walls to divert the river and widen the Kolkata-bound shipping route. The project was abandoned halfway. These underwater walls have led to higher tides and stronger currents.”

“To complicate the presence of already existing stresses on the habited islands in this fragile ecosystem, climate change is increasingly acting as a stress multiplier,” the researchers pointed out. While researchers point to natural as well as anthropogenic causes for the steady disappearance of the island, the authorities seem to be dealing with immediate concerns rather than the bigger reality of the island and its residents. Several reports suggest that most of the young adult male islanders have shifted to other states in search of work. The pradhan of Ghoramara, Sanjib Sagar talked about the lack of work on the island with TwoCircles.net. He said, “There is no work here as such. Sometimes you get 100 days of work a year under MNREGA but not everybody gets it.

The water has receded after the last cyclone and houses have been built again, but we still cannot start farming”. According to Sagar, the houses that were destroyed due to the cyclone have been built again. “The government gave some 18,000 rupees for building houses. A lot of NGOs came to do relief work. With their help, we have been successfully built back everyone’s house,” he said. “We have made a 5-kilometre long embankment that has helped in preventing the water of the river from coming to the land,” he added. Talking about the bigger problem of erosion, Sanjib said,

“This is Sunderbans. Erosion is a fact and it will happen. Till now there has been no proper solution to it. We can put boulders but that can only stop the erosion for some time”. West Bengal saw heavy floods in September 2021 caused by rains and worsened by the overflowing of Gauldin Barrage Dam on the Subarnarekha River in Uda in the neighbouring state of Jharkhand. While the Purba Medinipur and Paschim Medinipur districts were the worst hit, Hooghly, North 24 Parganas, and South 24 Parganas (where Ghoramara is located) districts have also been affected. Bankim Hazra, the MLA of Ganga Sagar and Minister-in-Charge of the Department of Sunderbans Affairs, told TwoCircles.net,

“We made a report of all the people who lost their houses to the flood. There were some 30 people. The Housing Department has built back their houses. They were given 20 decimal of land after they lost their land to the flood.” Hazra said that “Ghoramara is already washing out.” “It is an international challenge. The state government is doing its best to develop the place. One primary school drowned in the flooding. So, we are trying to open new schools,” he said. However, as the immediate issues are waded off, the migration, poor living conditions, and relentless washing off of houses have made climate refugees out of the islanders. While the issue has received international traction, no serious program has been put in place for them. Without proper rehabilitation and improved living conditions, the future of the coastal community looks bleak.

### **Odisha and West Bengal: Coast Guard puts assets to tackle Cyclone Jawaad**

<https://www.asianage.com/india/all-india/031221/coast-guard-puts-assets-to-tackle-cyclone-jawaad.html>

"The Indian Coast Guard (ICG) has deployed three ships along with a hovercraft and also pressed a Dornier aircraft to sound alerts of Cyclone Jawad to the fishermen in the Bay of Bengal along Odisha and West Bengal. A senior officer at the ICG (North East regional headquarters) told this newspaper on Thursday that the three ships and a hovercraft have been operating on rotation to direct the fishermen to return to the harbour for safety. One of them, ICGS Varad, which is an offshore patrol vessel, is at the International Maritime Boundary Line, engaged in shepherding the fishing boats towards the coast.

Besides, a Dornier aircraft is carrying out sorties twice a day. The ICG stated that it has initiated preemptive and preventive actions for safety of life and property at sea. It said, "ICG ships and aircraft have been tasked specifically for relaying weather warnings to mariners and urging fishing boats at sea to return to harbour. Till now approximately 55 fishing boats have been directed by ICG units to return to harbour. Additionally, a weather warning is also being broadcast through Coast Guard ROS at Paradip and Haldia in vernacular language to alert fisherfolks at sea. Close liaison is being maintained by ICG with local fisheries authorities for accounting of fishing boats at sea.

"The National Disaster Response Force has also stationed 16 teams in the state to alert the residents of coastal villages about the cyclone. Chief minister Mamata Banerjee, who returned to Kolkata in the afternoon from a three-day Mumbai visit, held a meeting at the state secretariat, Nabanna, to review her government's preparedness to tackle the cyclone and the evacuation of people from the coastal areas. 27 Up and 22 Down long distance trains have been cancelled by the South Eastern Railway while eight trains were suspended by the East Coast Railway.

**Andhra Pradesh, Odisha and West Bengal: Cyclone Jawad: IMD issues red alert; 'very heavy' rainfall likely in 3 states tomorrow**

<https://www.livemint.com/news/india/cyclone-jawad-imd-issues-red-alert-very-heavy-rainfall-likely-in-3-states-tomorrow-10-points-11638495996137.html>

"Issuing extensive warning in the view of Cyclone Jawad, India Meteorological Department (IMD), it is likely to touch the coast near Puri in Odisha around noon on 5 December. Earlier in the morning, the weather office said, depression over Bay of Bengal intensified into deep depression and likely to intensify into a cyclonic storm during next 12 hours. Meanwhile, heavy to very heavy rainfall is expected in Odisha, parts of Andhra Pradesh and West Bengal in the next few days. IMD has been issuing regular bulletins with the latest forecast to all the concerned States.

What we know so far:

- 1) IMD said Cyclone Jawad is likely to hit the coast of North Andhra Pradesh-Odisha around the morning of December 4. Very heavy rainfall is likely to start in north coastal Andhra Pradesh and south coastal Odisha by Friday evening. The intensity of rainfall is likely to increase on Saturday.
- 2) Odisha: Red alert has been issued for 4 Odisha districts, Orange alert for 7 and Yellow alert for 4 districts predicting 'heavy' to 'very heavy' rainfall. Fishing activities will remain prohibited till 5 December. Odisha is likely to be the worst-affected state.
- 3) In Odisha, as many as 266 rescue teams including National Disaster Response Force (NDRF), State Fire Services and Odisha Disaster Rapid Action Force will be deployed in coastal districts.
- 4) Umashankar Das, a scientist at the IMD, as quoted by ANI, said advised people to remain indoors. Das also said that the wind speed in coastal areas would be around 60-80 kmph from the afternoon of December 4. There is a possibility of landslides in hilly areas.
- 5) East Coast Railway has decided to cancel as many as 95 trains. It further said in a tweet, as per forecast of Met Dept., Cyclone 'Jawad' may hit Odisha on 3rd - 4th Dec. For the safety of passengers 95 Trains originating from different destination and passing over ECoR and originating from ECoR have been cancelled.
- 6) West Bengal: Heavy to very heavy rainfall is expected in parts of West Bengal from 3 to 6 December, the weather office said. The NDRF has deployed eight teams in state - 2 teams have been deployed in Kolkata and one each in South 24 Parganas, North 24 Parganas, East Midnapore, West Midnapore, Hooghly, and Nadia.
- 7) Andhra Pradesh: In view of the cyclone, all schools across the Visakhapatnam and Srikakulam districts will be closed today and tomorrow. Around 65 ongoing trains were cancelled from the Visakhapatnam district for Dec 3 & 4, a senior official said.
- 8) Jharkhand: Cyclone Jawad is likely to have moderate impact in Jharkhand. IMD officials said that no warning had been issued for Jharkhand in view of the cyclone. Light rainfall is expected in some districts between 3 to 6 December.
- 9) On Thursday, Prime Minister Narendra Modi held a review meeting with senior officials on Jawad. As per his office, the PM Modi directed officials to take every possible measure to ensure that people are safely evacuated and to ensure maintenance of all essential services such as Power, Telecommunications, health, drinking water etc. and that they are restored immediately in the event of any disruption.

**West Bengal: Rise in CO2 levels in air is wounding Sundarbans' marine life**

<https://thelogicalindian.com/environment/rise-in-co2-levels-in-air-is-wounding-sundarbans-marine-life-scientists-32217>

"A continuous increase in the carbon dioxide (CO<sub>2</sub>) levels in the air is harming the marine life of the Sunderbans estuary in West Bengal by turning it acidic. Animals, especially with shells such as oysters, clams, crabs, and lobsters, are prone to danger. This has been analysed by a team of marine scientists working in the Sunderbans, who said ocean acidification is a part of global warming and climate change, Hindustan Times reported. The experts found the pH level of water dropping from around 8.3 in the early 1980s to approximately 7.9 in 2019. Speaking to the media, Abhijit Mitra, former head of the marine science department (Calcutta University), informed that the western part of Sunderban, close to the urban area, had observed a massive drop in its pH level, while the central part is declining slowly. Mitra said the decline affects the population of shelled organisms and their shell size as well, which has become thinner and smaller.

Fishermen said that several fish and other animals have gotten smaller, and they hardly get big ones. Their population has also fallen by 35-40 per cent in the western area. "The size of *Saccostrea cucullata*, a species of edible oyster around Kakdwip and Namkhana fishing harbour, has dropped by over 40 per cent. In the central Sunderbans, the size of the species has dropped by around 20 percent," the media quoted him as saying. Asst. Professor of Indian Institute of Science Education and Research, Punyasloke Bhadury, explained that water contains calcium and carbonate ions, which the shelled animals need to develop and corals to build the reef. But the acidity reduces these components in the water, affecting the shell size and slowing down the growth of reefs. Experts said the decline in the pH level is alarming. Just as the slightest drop in the pH level of a human body (pH 7.35 to 7.45) can make them sick, the same takes a heavy toll on marine animals. The scientists said the decline is not just in Sunderbans but other estuaries as well.

### **West Bengal: Women plant mangroves to bolster India's cyclone defences**

<https://gulfnews.com/world/asia/india/women-plant-mangroves-to-bolster-indias-cyclone-defences-1.83565194>

"With India facing ever more powerful cyclones, women in the world's largest mangrove forest are planting thousands of saplings to help protect their coastal communities from climate change. The Sunderbans straddle the coastline into neighbouring Bangladesh and are home to some of the world's rarest creatures, including the Bengal tiger and the Irrawaddy dolphin. The forest has been designated a World Heritage site but has in the past suffered from illegal logging and is regularly battered by intense monsoon storms. Walking ankle-deep along a muddy shore, and balancing young plants on their heads, a group of local women last week began the long process of reforesting a bare stretch of coastline.

"This is an area prone to storms and cyclones," said Shivani Adhikari, one of the women involved in the initiative. "So to protect the embankments, all of us women are planting." Mangroves protect coastlines from erosion and extreme weather events, improve water quality

by filtering pollutants, and serve as nurseries for many marine creatures, according to the UN Environment Programme. They can help fight climate change by sequestering millions of tons of carbon each year in their leaves, trunks, roots and the soil. And they also help buffer coastal communities from the cyclones that have coursed through the area. “If these embankments are protected, our village will survive,” said Goutam Nashkar, who lives near the project site. “If our village survives, we will survive,” he added.

“This is our hope, our wish.” The project, backed by a local non-profit and the West Bengal government, aims to plant around 10,000 mangrove saplings. India’s eastern states and the coast of Bangladesh are regularly battered by cyclones that have claimed the lives of hundreds of thousands of people in recent decades. While the frequency and intensity in storms have increased - with climate change to blame - deaths have fallen thanks to faster evacuations, better forecasting and more shelters.

### **West Bengal: Crab hunter attacked by tiger, injured**

<https://www.telegraphindia.com/west-bengal/crab-hunter-attacked-by-tiger-injured/cid/1838209>

"A crab hunter suffered multiple injuries when a royal Bengal tiger pounced on him while he and two others were inside a creek in Belifeli jungle on Monday evening. The trio said they had permission for fishing but a senior forester said that the spot where the attack happened was a tiger habitat, off bounds for people. Laxminder Sanfui, 51, a resident of Deulbari area of Kultali's Debipur gram panchayat, received serious head injuries. The others on the boat, his brother Soumitra and neighbour Ibrahim Sheikh, managed to rescue him by “fighting hard” with the tiger.

Laxminder was rushed to Joynagar rural hospital in the Kultali block late on Monday night. Owing to continuous bleeding, he was shifted to Chittaranjan National Medical College Hospital on Tuesday. Local sources in Kultali said Laxminder, Soumitra and Ibrahim who, left Deulbari on Monday morning to trap crabs, were in the evening taking rest after anchoring the boat in the middle of the creek when the tiger swam up to them and attacked the trio. “The tiger leaped onto our boat and attacked Laxminder, and mauled him with his paws. It seemed desperate to drag him away. We fought hard with it and succeeded in driving it away,” said Soumitra. T

he trio claimed they had “valid permission” for fishing and hunting from the Kultali beat office. They claimed that the attack was unexpected as tigers are normally not seen in that stretch. However, this claim was rejected by the DFO (south) Milankanti Mandal. “The team had a permit for fishing only in the jurisdiction of South 24Parganas. But they sneaked inside areas of Sunderbans Tiger Reserve. It was an illegal infiltration,” the DFO said. “All recent incidents of attacks on people by tigers have occurred inside the Sunderbans Tiger Reserve. Tigers do not enter human habitation. Tigers always defend their territory and attack anyone who sneaks into

their area of dominance. People should realise it,” Mandal added. An official of the reserve said that attacks on human beings by tigers tended to spike during the winter.

“During winters, tigers come out of the mangrove and roam close to creeks unlike in the summer. During this time, we check our nylon netting and fencing so that they do not come out into villages. It appears that the tiger noticed his prey, the unprotected crab hunters, and attacked them,” the official said.

### **West Bengal: Sunderban bears climate change brunt as world leaders negotiate at COP**

<https://www.hindustantimes.com/india-news/sunderban-bears-climate-change-brunt-as-world-leaders-negotiate-at-cop-101636309189321.html>

"Sheikh Abdul Rauf, now 50, has watched the sea invade his land. His hut is ramshackle, a combination of years of poverty and devastation from repeated cyclones. But until three years ago, he had land. The walk to sea, past his agricultural land, was about 25 minutes. Now, he watches the water 15 metres away from his hut, and contemplates the inevitable. His land has gone, his home may, too. His father once told him that they had several hectares of land on the island. "But gradually almost all our land disappeared due to rising water levels.

Now, I have a few bighas left, but there is no telling how long those will remain," Rauf said. Rauf is one of about 3,000 residents of Ghoramara, a remote island in the Sunderbans, the world's largest delta known for its Royal Bengal Tigers and mangroves. And yet, Ghoramara now has another narrative. Of rising sea levels, and untimely cyclones, all the effects of the climate crisis. And even as nations make pledges at COP26, and leaders of the world converge in Glasgow to thrash out the way forward, in the Sunderbans, on India's east coast, the climate crisis is in the here and now.

In its latest state of the climate report, the World Meteorological Organisation (WMO) said that sea levels between 2013 and 2021 had risen by a factor of two, meaning sea level rises have doubled in this period. The WMO report said the mean global sea level rise was 2.1mm per year between 1993 and 2002 and 4.4mm per year between 2013 and 2021. In the coming years, WMO predicted that sea levels will rise further if the climate crisis-causing carbon emissions are not checked quickly. In India, the ministry of earth sciences told the Lok Sabha this July that the sea level in the northern parts of the Indian Ocean had risen by 6.1mm per year between 2003 and 2013.

The sea level rise is higher on the eastern coast, the ministry said. Chairman of the West Bengal Pollution Control Board, Kalyan Rudra, said the rate of land disappearing in the Sunderbans was even higher. "In the Sunderbans, the rise is much more because of the subsidence of land. While the IPCC report 2019 says the sea level is rising by 3.6mm every year, the delta is subsiding by 2.9 mm every year. These two put together show that water is gobbling up land at the rate of

6.5mm per year,” said Rudra, a noted river expert. For Rauf, these terms and numbers are unfamiliar, but the evidence is before his eyes. “I don’t know what is causing the abrupt rise in the sea currents. Maybe, it is God’s wrath against us,”he said.

Livelihood impact for those on India’s coast, particularly in areas such as the Sunderbans, the climate crisis has brought two dangerous changes. The first is the danger of losing land through submergence and the second, untimely and frequent cyclones. West Bengal and Odisha have faced very severe cyclones — Amphan in 2020 and Yaas in 2021 — which wreaked havoc, especially in West Bengal, where 102 people died in the two cyclones.

In 2019, close to nine million people were evacuated due to cyclones, according to a home ministry report tabled in Parliament in 2020. Globally, cyclones and hurricanes had displaced close to 30 million people in 2020, according to an estimate by advocacy group Climate Centre, adding that three of the four people displaced in the world were because of extreme weather events. On the ground in Ghoramara, this has meant that Rauf has had to build his home twice in two years. Weather experts such as KJ Ramesh, former director general of India Meteorological Department (IMD), said that intensity and frequency of extreme weather phenomena such as cyclones and spells of heavy erratic rain have increased in the last two decades.

“We have seen an increase in cyclone activity in both eastern and western coast. Eastern coast in 2020 saw back to back cyclones, which is rare. Science shows climate change has a role to play in the changing pattern of cyclones,” Ramesh said. Data available with the Union ministry of earth sciences shows that in 2016, at least four cyclones hit the Indian coast, out of which only one was a severe cyclone. In 2020, the country was battered by five cyclones, all categorized as severe cyclones. 48-year-old Abani Mondal describes another real-world implication of these events.

A resident of coastal Sandeshkhali in North 24 Paraganas district, Mondal says that the cyclones push saline water into the islands, rendering all agricultural land infertile, and killing sweet water fish in the ponds on land. “With government help, a section of the farmers started to grow salt tolerant paddy. But then the extremely heavy and erratic spells of rainfall this monsoon in July and September killed all the crop which we were banking on,” Mondal said. Experts say that it usually takes at least two to three monsoon seasons to wash away the layer of salt. Conservationist Debal Deb, founder of the rice seed banks Vrihi and Basudhab, said:

“The high yielding varieties which are usually grown in our villages cannot withstand saline water at all. So, it takes at least two to three years of good monsoon rain to wash away the salt from the upper levels of the soil and make the farmlands fit for agriculture. But if there are breaches in the embankments, saline water gushes in during high tide.” Joy Krishna Halder secretary, West Bengal United Fisherman Association, who lives at Kultali in the Sunderbans, said: “Fishing and agriculture are the backbones of the delta. Now because of climate change we are being deprived even of that. As a result many people migrate to far off cities and towns in

search of work.” Ecology loss the impact doesn’t only affect humans. Studies have shown that the climate crisis has been taking a heavy toll on mangrove and local marine ecology in the Sunderbans, as it is in small island nations in the Pacific and the Indian Ocean.

Punyasloke Bhadury, a professor from IISER who will speak at COP26 on how the climate crisis is affecting the delta, said: “The Sunderi tree (from which Sunderban derives its name) is getting wiped out because there is not enough fresh water available and rising sea level is increasing salinity, especially in the delta.” 35-year-old Ratna Guin, for instance, once caught the seeds of tiger prawns in the mangroves with great ease. “Fifteen years ago, we used to wade through the water in the winter for three to four hours and get healthy amounts.

Now even after six to seven hours, you get nothing. Many women have stopped relying on this and have instead migrated to cities as far of as in Kerala, Gujarat and Andaman to work as labourers along with their husbands and sons,” said Guin, a resident of Kumirmari Island. Bhadury points out that while the unbridled collection of tiger prawn seeds has depleted stocks, the rise in sea surface temperature is also a factor. “The rising sea surface temperature is having an effect on the population of planktons.

Many plankton populations are depleting while others have become more dominant. This change in plankton population is affecting the population of fishes and other aquatic animals such as prawns and crabs,” he said. That is not all. Sunderbans is also witnessing ground water depletion because of the rising salinity. According to locals, Kharif crops depend mainly on the monsoon rains, while Rabi crop is primarily dependent on surface water. But as the rivers turn saline, and the ponds, too, after a cyclone, the residents turn to incommensurate use of ground water.

“Earlier on some islands we used to get water digging just around 40 – 50 feet. Now we have to dig a few hundred feet to find water,” said Rabin Mondol, the project coordinator of Tagore Society for Rural Development in Gosaba. Climate refugees Located at the southern tip of West Bengal at the confluence of River Ganga and the Bay of Bengal, Ghoramara is one of the 102 islands in the Sunderbans, spread across 10,000 square kilometers in state of West Bengal and Bangladesh. More than 4.5 million people live in the Sunderbans. This has always been home, but many, including Rauf, now migrate to find work.

“There is nothing left in Ghoramara. Many have left permanently and only come back on festivals or for social functions,” Rauf said. Two of his sons work in Kerala, and another works with him in Kolkata. All five came home when the Covid-19 pandemic hit and the national lockdown was imposed. “The two cyclones (Amphan and Yaas) have again evicted us. Where are we supposed to go now?” asked Rauf. The World Bank, in 2018, estimated that three regions — Latin America, sub-Saharan Africa and South East Asia — would generate 143 million climate refugees by 2050, almost six times of the estimated 22.5 million climate migrants in 2017 due to sudden onset of weather events such as flooding, forest fires after drought and intensified storms.

“We are seeing short-term climate refugees in Western Ghats and Himalayas. We would see more of them across India because of climate change,” said noted ecologist Madhav Gadgil in a recent interview to Hindustan Times. “There is no denying that lakhs of people migrate to other parts India from the Sunderbans in search of work.

This became evident when the people, who were working as migrant labourers in other cities, returned to the delta during Covid. Many went back after the lockdown was relaxed. More than 500,000 people have migrated from the Sunderbans over the years,” said Bankim Chandra Hazra, Sunderbans affairs minister. In the Sunderbans, if areas such as Sagar, Henry’s Island, Chaimari, Baghmara, Dalhousie Island, Baliara and Mechua are showing heavy erosion, others have disappeared already. “Some islands such as Lohachura, Bedford and Suparidanga have already been gobbled up by the sea,” said Sanjib Sagar, panchayat pradhan of Ghoramara. From a total of around 7000 people, a decade ago in Ghoramara Island, the population has reduced to around 3,000 on Ghoramara Island. “Most people have moved to safer areas such as Kakdwip and Sagar. The young have migrated to other states,” he said.

Adaptation Hazra said the government was aware about the climate crisis-induced problems and was doing its bit. “Mangroves are being planted to protect the villages from cyclones. Through MGNREGA jobs, which include digging ponds for rain water harvesting, planting mangrove and strengthening the embankments, villagers are being employed. Salt tolerant paddy seeds were distributed after the cyclones and villagers are being helped to start poultry and duckery,” he said.

Other government officials, however, added that a lack of resources was a cause for concern and that there was a lack of a clear climate change adaptation plan. A United Nations Environment Programme (UNEP) report on Thursday said that finance for climate adaptation was inadequate and needed to be scaled up five to 10 times the present levels. “As the world looks to step up efforts to cut greenhouse gas emissions – efforts that are still not anywhere strong enough – it must also dramatically up its game to adapt to climate change,” said Inger Andersen, UNEP’s Executive Director.

“From my experience, I can only say, we need a lot of money to make vulnerable areas adaptable to climate change. We need international collaboration for sharing best technologies and innovations,” said M Rajeevan, former secretary department of science and technology, Government of India.

### **West Bengal: Tiger mauls crab hunter to death in Sunderbans**

<https://www.telegraphindia.com/west-bengal/tiger-mauls-crab-hunter-to-death-in-sunderbans/cid/1837187>

"A 52-year-old crab hunter was killed by a Royal Bengal tiger in the Bulufeli area of the Sunderbans in South 24-Parganas when he was sleeping on a boat along with two fishermen on Tuesday afternoon. Police and forest officials said the tiger swam around 100 meters in pursuit of the small fishing vessel, leaped over it, and attacked Srinibas Mondal, a resident of Kishorimohanpur in Maipith coastal area under Kultali block. The man-eater killed Mondal on the spot and tried to drag him towards the jungle. His fellow fishermen thwarted the tiger's attempt by beating it with a bamboo stick and returned with the body to Kishorimohanpur ghat. Police took the body and sent it for autopsy.

"They went deep inside the creeks, which are the turfs of tigers. The big cat attacked the team when they were sleeping on the vessel after having lunch, anchoring it on an unprotected stretch near the bank of a canal," a forest department official said. The incident brings the toll from tiger attacks in the Sunderbans to 29 in the past 17 months, an official of the state wildlife department said. Foresters blamed fishermen for "inviting danger" by entering the deep jungle despite strong prohibition.

"There is a strong prohibition on jungle entry. We have been trying hard to create awareness among the fishermen and crab hunters urging them not to risk their lives and have also proposed alternative sources of income like apiculture. But they never listen," a senior official of the state wildlife department said. The forest department has decided to undertake a renewed attempt to discuss and explore alternative sources of income by organising a meeting on Friday with local MLAs, gram panchayat authorities and district administrative officials.

### **West Bengal: Fisherman killed in Sundarbans tiger attack**

<https://indianexpress.com/article/cities/kolkata/bengal-fisherman-killed-in-sundarbans-tiger-attack-7592595/>

"A 42-year-old fisherman was killed by a tiger near Kalash Island in the Sundarbans on Tuesday. The victim was identified as Shankar Bhakta, a resident of G-plot in the Sundarbans. Forest officials said Bhakta had gone out to fish with six others. In the afternoon, he was having his lunch on the boat when a tiger sneaked up on him and tried to drag him into the forest.

After Bhakta's companions started hitting the tiger with sticks to save him, the animal left the badly mauled fisherman and returned to the forest. Bhakta was taken to a primary health centre where doctors declared him dead. This is the second tiger attack in the Sundarbans this month. On October 4, 31-year-old Samad Mollah was killed at Chilamari Khal in the Pirkhali forest area while he was catching crabs.

### **West Bengal: Padma Hilsa from Bangladesh to reach Kolkata on Wednesday**

<https://www.telegraphindia.com/my-kolkata/news/padma-hilsa-from-bangladesh-to-reach-kolkata-on-wednesday/cid/1836098>

"A consignment of over 3,000 tonnes of Hilsa from Bangladesh will start reaching Kolkata on Wednesday, a day after the ban on the catching, sale and transportation of the Padma Hilsa ends in the neighbouring country, a state government official said. This consignment will be part of over 4,000 tonnes of Hilsa that the Sheikh Hasina government had allowed to be exported to Bengal as "Puja gift".

While a small part of the entire consignment had reached Bengal by October 4, the day the ban came into effect in Bangladesh. The ban ended on October 25. "Around 1,100 tonnes of the total consignment of over 4,000 tonnes had reached us before the ban had come into effect in Bangladesh," said Syed Anwar Maqsood, secretary of the West Bengal Fish Importers' Association. "We are told that the export will resume on Wednesday."

A notification by Bangladesh's ministry of commerce on Tuesday said the export of the remaining quantity of Hilsa to Bengal would be allowed till November 5. In September, the Bangladesh government had permitted 115 fish exporters to send 40 tonnes of Hilsa each to Bengal. This was the largest volume of export allowed by Dhaka since 2012, the year the seasonal ban on the catching, sale and transportation of the Padma Hilsa was introduced.

### **West Bengal: Urbanisation plans should incorporate conservation of wetlands, and treat those as natural infrastructures that have a direct bearing on the living conditions of people**

[www.millenniumpost.in/opinion/an-indispensable-ecosystem-456644](http://www.millenniumpost.in/opinion/an-indispensable-ecosystem-456644)

"Wetlands play a crucial role in making the cities and towns livable by helping in groundwater recharge, buffering floods, filtering wastewater, regulating microclimate, enhancing landscapes etc. A rapid assessment by our team indicates that nearly eight per cent of the total wetland area is situated within the urban sprawls. Wetlands have played an important role in shaping the settlement patterns across India.

The water storage in Yamuna floodplains has been estimated to be equivalent to three-fourths of Delhi's water supply. In the waste recycling system of East Kolkata, Wetlands treat nearly 65 per cent of the city's wastewater, saving nearly Rs 4,600 million annually. Wetlands act as major flood defence systems for cities such as Srinagar and Guwahati. In the Deccan plains and arid regions of the country, there has been an age-old tradition of constructing tanks to store rainwater for irrigation and domestic use. Urban wetlands are also significant cultural and recreational avenues.

The backwaters of Kerala are visited by over 0.3 million tourists annually, generating an annual economy of Rs 600 crore. Urban wetlands also harbour diverse plant and animal life. While built-up spaces within urban areas have increased, the wetland areas have undergone a drastic decline. Our analysis of data from 76 cities and towns has indicated that during 1980-2015, while the built-up area increased by 285 per cent, wetlands declined by 21 per cent; the most rapid loss was in the metros. Increasing vulnerability with wetlands being lost in urban areas, and extreme climate events being the new normal, pluvial floods are on the rise. As floodwater tends to accumulate in low lying areas, infrastructure built on wetland areas and feeder channels become exposed to flooding risks. This has been evidenced in several cases, such as the Kashmir deluge of September 2014, Chennai floods of November-December 2015, the Kerala floods of August 2018, and floods in Gurgaon and Hyderabad in 2020.

The lack of wetland buffer was identified as a significant causative factor for the extensive damage during the floods of November-December 2015. In August 2018, when Kerala faced unprecedented floods, the lowland areas suffered maximum damage. Unfortunately, reconstruction efforts post the floods have not considered restoration of wetlands and its feeder channels as a recovery measure.

Limited public policy response MoEF&CC is the nodal organization in the country for issues related to wetlands. With India becoming a party to the Ramsar Convention in 1982, and MoEF&CC being established in 1985, a national programming framework for wetlands was put in place as early as in 1986. Presently, the network of wetlands supported by the Ministry under various schemes includes 250 sites. India has also designated 46 wetlands as Ramsar sites, of which as many as eight are located within urban and peri-urban spaces. The Wetlands (Conservation and Management) Rules, 2017, constitutes wetlands authorities within states and union territories as a nodal institution for policy, programming and regulation of wetlands.

However, with human-made wetlands excluded from the category of wetlands that can be notified under these rules, most of the wetlands of the urban areas in the Deccan region are excluded. Continued degradation of wetlands underline ineffectiveness of existing measures and highlight the need to ramp up efforts across multiple sectors. Wetlands are often managed with singular sectoral approaches – such as for recreation and amenity values, fisheries, and water storage. This prevents the incorporation of their full range of ecosystem services and biodiversity values and connectivity within the landscape within management interventions. The complex drivers of wetlands degradation cannot be addressed by piecemeal sectoral approaches. The dominant urban planning approaches in India thus far have been infrastructure dominated, enabling tapping upstream sources for meeting water needs and sending waste and run-off to downstream reaches in the shortest possible time.

The limitations of such approaches are evident in cities being increasingly parched, exposed to floods and droughts, and increasingly water insecure. Management of wetlands located within

the boundary of urban areas is often missed out within these approaches. Lessons from other cities The Sponge Cities model, adopted in several Chinese cities have replaced cemented pavements with wetlands, as an eco-friendly alternative to traditional flood defences and drainage systems.

The V?c?re?ti Nature Park, a 183-hectare urban wetland of Bucharest, Romania's largest and most densely populated city, provides a green lung to the built-up city surrounding the site. Located on the edge of Vientiane, the That Luang Marsh, spanning across 2,000 hectares, is being preserved and managed as a buffer against flooding and a provider of livelihoods. In the Banten Bay area of Jakarta, a consortium of environmental organisations, including Wetlands International, are using wetlands as natural infrastructure solutions to prevent coastal erosion.

The Room for the River Programme of the Netherlands and Germany is an ambitious river restoration programme, which includes rejuvenating floodplains and the creation of additional wetland habitats to buffer the urban areas from flooding and risk of a dyke collapse. Several other cases from around the globe indicate how wetlands conservation could be weaved into urban planning, contributing to twin objectives of conservation as well as sustainable urbanization.

Ways ahead the future of urban wetlands is closely linked to the extent to which these ecosystems are integrated within the urban development scenario. Firstly, the national wetlands inventory needs to be updated at least once every decade so that the trends in these ecosystems are known. Secondly, recording wetlands as a separate land-use class can be instrumental in thwarting the threats of wetlands encroachment and conversion.

Thirdly, urban wetlands need to be delineated and managed in an integrated manner, with due consideration of their ecological, hydrological and socioeconomic features and factors governing these features. Periodic capacity development programmes may be conducted for central and state government officials entrusted with the integrated management of wetlands. Fourthly, urban wetlands need to be properly delineated and notified under extant regulations. The State Wetlands Authorities need to prioritize conservation of urban wetlands, using a catchment approach and securing the full range of their ecosystem services and biodiversity values within sectoral planning. Fifthly, urban local bodies, resident welfare committees and civil societies should be meaningfully engaged in the management and restoration of urban wetlands. This could be done through sensitization, behavioural change communication, education and awareness campaigns, and the use of citizen science for monitoring and involvement in management planning processes.

### **West Bengal: Bid to stop tiger attacks jeopardises livelihood in Sunderbans**

<https://www.telegraphindia.com/my-kolkata/places/bid-to-stop-tiger-attacks-jeopardises-livelihood-in-sunderbans/cid/1835616>

"At least 30 villagers have been killed by tigers in the Sunderbans in the past 15 months, according to the state forest department. Most of the victims were attacked while trying to catch crab or fish in the creeks inside the Jhila forest area in the Sunderban Tiger Reserve (STR). The last casualty, on October 4, prompted the forest department to impose an indefinite ban on fishing inside the Jhila forest area. The ban is all-encompassing — even in buffer areas and even for boat licence certificate (BLC) holders.

No loss of life in tiger attacks has been reported since the ban, said forest officials. "Around four deaths were reported in the Jhila area in barely 10 days in the run-up to the Pujas. People without BLC ventured into the forest in many cases. But since the area saw an increase in tiger activity, we imposed an overall ban," said Tapas Das, field director, STR. Jhila forest area, is around 50km from Canning and 125km from Kolkata and comprises multiple compartments. It is surrounded by islands like Kumirmari, Kalidaspur and Hetalbari and crisscrossed Harinbhanga and Raimangal rivers, bordering Bangladesh.

The forest officials, with the help of local joint forest management committees, carried out public announcements across the villages in the fringe areas of STR, to make people aware of the ban. Three floating forest camps on boats have been deployed for patrolling the waters to deter any boat that flouts the ban. But residents and activists working to mitigate man-animal conflict in the mangrove delta said the ban cannot be a long-term solution. The ban, while trying to save lives, jeopardised livelihood, they said. More and more people in the Sunderbans have turned to the forests for livelihood because the Covid pandemic robbed them of their income. The Covid curbs following a fresh spike in cases only aggravated their crisis. Two cyclones in two successive years, Amphan and Yaas, have led to large-scale inundation of farmlands and waterbodies with saline water, creating further problems for the local population.

"Making a choice between life and livelihood is a near impossible choice. Tens of thousands of migrant labourers had returned to the mangrove delta during the lockdown. The pandemic-induced challenges are acute but it is also unfair to keep straining the forest resources," said a wildlife activist who requested anonymity. Mrityunjoy Mondal, member of a joint forest management committee in Kalidaspur, one of the villages on the fringes of Jhila forest, said the ban was being adhered to for now but he was unsure of the future. "Around 1,200 families live in this village. Three-fourth of them are dependent on the forest. But there are only a dozen BLC holders," he said. For now, Mondal and other joint forest management committee members guard the village borders at dawn to prevent people from venturing out into the rivers. "But we don't know how long they can be held back, if there are no livelihood options," he said.

**West Bengal: Nine fishermen spend nights on trees in Sunderbans**

<https://www.telegraphindia.com/west-bengal/nine-fishermen-spend-nights-on-trees-in-sunderbans/cid/1835051>

"Nine fishermen from Raidighi in South 24-Parganas spent two sleepless nights on trees inside the tiger reserve of the Sunderbans to protect themselves from tigers after their boat toppled in Bidyadhari river during Saturday evening's downpour. The fishermen were rescued on Monday afternoon after a six-hour search by villagers who found the "missing" men on trees.

"We had to search extensively along the coast of the island to trace the missing fishermen who had left their homes in a boat early on Saturday," said Yasin Gazi, a social worker in Raidighi who led the rescue operation on Monday. Gazi said the operation to look for missing fishermen began on Monday morning after one among the nine men managed to make a call from his mobile phone to inform villagers about their plight.

"The phone network was very poor. He barely managed to give a faint indication of the place where they had taken shelter on trees," said Gazi. "We launched the search after informing police. We also informed the cops after the rescue," the social worker added. Sanatan Mistri, one of the nine rescued fishermen, said they had left their homes to catch fish in the Bidyadhari river early on Saturday. But after dusk, the weather changed with heavy rain and gusty winds. "We tried to take our motor boat to a safe location.

However, a sudden gust of wind toppled our boat near the coast of Shakhadowani forest." Shakhadowani forest of the island of the same name in the Sunderbans is a restricted forest under the tiger reserve. "We did not have any option apart from climbing trees. We could not retrieve food and drinking water from the boat and the strong wind made us shiver in cold. We took shelter on top of three trees and every passing hour was a nightmare," said Mistri. Hasan Molla, another fisherman, added they saw pugmarks of tigers on the soft soil.

"We knew tigers were around. We could not sleep for the fear of falling off trees. We are lucky to have been rescued." "It is unusual for boats to overturn in a river, such things happen in the sea. The accident was triggered by wind and heavy rain," said an official in South 24-Parganas. While the fishermen are happy to be back home in Raidighi, inclement weather has left the administration in coastal districts worried. Following the formation of a low-pressure in the Bay of Bengal, coastal districts — mainly North and South 24-Parganas — are experiencing continuous rain and winds of 30-40kmph since Saturday evening.

The Indian Meteorological Department on Monday said it would continue till Wednesday. The IMD had earlier issued a warning for two days from Sunday, but its special bulletin on Monday mentions orange and yellow alerts for south Bengal districts including North and South 24-Parganas, Calcutta, Howrah, Birbhum, East and West Midnapore. These places are likely to see heavy rain till Wednesday. "There is a forecast of heavy rain in most south Bengal districts till

Wednesday. Later, low-pressure area is likely to move towards north Bengal,” said a weatherman in Calcutta.

### **West Bengal: Rain, fuel price turn protein staples dearer**

<https://timesofindia.indiatimes.com/city/kolkata/rain-fuel-price-turn-protein-staples-dearer/articleshow/86819236.cms>

"There has been a sharp rise in retail prices of egg, fish and chicken across city markets owing to back-to-back downpours and subsequent release of barrage water, washing out fisheries, ponds and poultry farms in south Bengal. A steady rise in fuel prices has also contributed to the price rise. Worse, prices of these protein staples are unlikely to drop during the festive time. "In fact, prices of fish may rise further if the current situations persist," said Tarun Bera, a fishery operator in East Midnapore. On an average, prices of fish rose by Rs 100-Rs 200 a kg. A poultry egg is now costlier by Re 1, dressed poultry chicken is now Rs 220, costlier by Rs 20-Rs 30 and may run up to Rs 250 during the festive days.

"The kitchen budget has certainly gone haywire. Fish and eggs are daily essentials in any average Bengali household. The spike is going to burn bigger holes in our pockets," said Swarup Nandi, an employee with a pharmaceutical company. "Record rainfall, followed by release of pent-up barrage water, washed away fisheries, ponds and rivers. Therefore, supply has dipped significantly. The gap is not easy to be met with imports from neighbouring states," said Nuruddin Shah, a wholesale trader at Baruipur.

The annual requirement of fish in Bengal 18.2 lakh tonnes. The annual production is now 18 lakh tonnes. "The daily demand for fish is around 5,192 tonnes. The supply is generally is 5,158 tonnes. But now the supply is much less. We are trying our best to take the supply to 5,041 tonnes during the festive days," said Bengal fisheries minister Akhil Giri. If fish farms have incurred losses, so did the poultry farms in Hooghly, Howrah and two Midnapore — four key districts that supply bulk of the city's egg and chicken requirement. "The losses are so huge this year because of natural calamities that many of the smaller players just cannot withstand the hardship and would exit the trade forever," said Madan Maity, secretary of Bengal Poultry Federation. Egg price was hovering around Rs 5 a piece even a week ago. But rising fuel price is increasing the transportation cost almost on a daily basis. As a result, the wholesale price per box was raised by Rs 60. It may rise further during the festive days," Narayan Chandra Pradhan, an egg retailer at Gariahat.

### **West Bengal: Fields and fisheries flooded in south Bengal, prices rise ahead of Durga puja**

<https://www.telegraphindia.com/west-bengal/fields-and-fisheries-flooded-in-south-bengal-prices-rise-ahead-of-durga-puja/cid/1833724>

"Inundation of vast swathes of south Bengal has led to a shortage in the supply of vegetables and fish in the market and the resultant price rise ahead of Durga puja. Sources said more than 1 lakh hectares, where seasonal vegetables were cultivated, got submerged because of the record rain last week and subsequently, the release of water from the Damodar Valley Corporation's dams in Jharkhand worsened the situation. Fish were also swept away from overflowing ponds and fisheries in East Midnapore and North and South 24-Parganas.

"Rohu fish, which is a common item on the Bengali platter, is now sold at around Rs 350-Rs 400 per kilo, almost double the regular price," said Gopal Das, a fish trader in Durgapur. One kilogram of brinjal, which was sold at Rs 40 before the flood, costs Rs 80 per kilo now in the state. Similarly, okra, which was earlier Rs 20 per kilo, is now sold at Rs 60. Many people are already struggling over the loss of income and jobs because of the Covid-19 pandemic, and now the price pinch of the daily need has made the situation worse. In West Burdwan, which is known as an industrial hub, a major portion of vegetables like pumpkin, cabbage, brinjal, and ridge gourd is supplied from neighbouring Bankura and West Midnapore districts.

Low-lying areas along the Damodar and Gandheswari rivers in Bankura's Mejia, Borjora, Sonakukhi, Onda, Indus and Patrashayar blocks are known for vegetable growers. West Midnapore's Ghatal and a large part of Hooghly – also a major producer of vegetables – feed many south Bengal districts as well as Calcutta and have been severely affected by the flood. "Most of the fields where we grew vegetables were submerged. All our crops were destroyed in the water," said a farmer in Bankura's Onda. The area was inundated because of the overflowing of the Damodar, Gandheswari and Dwarakeswar rivers.

"I have cultivated bitter gourd and pumpkin on my one bigha plot but the inundation has ruined everything," said Bholanath Gorai, a farmer at Patrashayar. A stockist of cabbage and pumpkin in Durgapur said he had not been receiving vegetables for the past three days. "I supply cabbage and pumpkin on four trucks to Durgapur, Asansol and Burdwan retail markets, but I have not been able to send a single truck for the past two days. The supply of vegetables from Bankura has stopped because of the flood," said the stockist.

### **West Bengal: Tiger mauls fisherman in Sunderban**

<https://www.telegraphindia.com/my-kolkata/news/tiger-mauls-fisherman-in-sunderbans/cid/1833464>

"A fisherman was killed by a tiger in the Pirkhali forest area of the Sunderbans when he was catching crabs early on Monday. Police and local sources said the victim, Samad Mollah, 31, died in the tiger attack when he was catching crabs in Chilamari Khal, a creek in the delta. His two companions, Subhas Mistry and Gopal Sarkar, told the police that the tiger had jumped on the boat from the bank. "We tried hard to resist the animal but it mauled Samad on the neck and

the shoulder. The tiger did eventually flee but by then Samad had bled to death,” Mistry said. On Monday afternoon, the duo returned to Gosaba with the body of Samad. At least 30 villagers have been killed by tigers in the Sunderbans in the past 15 months, an official of the state wildlife department said. Forest officials, however, blamed the villagers and fishermen for inviting their deaths by entering deep inside jungles, the natural habitat of the tiger, despite strict prohibition on entry. Villagers, however, said they had no other option but to risk their lives by entering jungles to catch crabs and fish because of lack of viable sources of income following the pandemic.

### **West Bengal: 28 ‘defiant’ trawlers rounded up from sea in Digha**

<https://www.telegraphindia.com/west-bengal/twenty-eight-defiant-trawlers-rounded-up-from-sea-in-digha/cid/1832803>

"Police in East Midnapore’s Digha, acting jointly with the district administration, on Wednesday morning rounded up at least 20 vessels from deep waters and sent them to the shore for allegedly breaching the weather-related red alert that banned fishermen from entering the sea. A coast guard hovercraft dispatched near Mohona later reportedly rounded up eight more vessels. In all, 28 trawlers were rounded up. Police speedboats, acting on reports from Mohona coastline that fishing trawlers had been spotted, began rounding up violators and ensured they were docked for the day.

An indefinite red alert was clamped from Monday evening in coastal East Midnapore in view of the weather forecast of heavy rain and squall. Sources on Wednesday said as the weather had improved on Tuesday night, fishermen possibly decided to try their luck on Wednesday. Representatives of the fishermen’s association, however, said the rounded-up vessels had been out at sea since before the red alert. Police on Wednesday rounded up trawlers from as far as 35km into the sea. Ramnagar-I BDO Bishnupada Ray and officer-in-charge of Digha (coastal), Satyajit Chanakya were on shore where public-announcement systems warned others from setting sail.

“The red alert stands until further notification. We had told the association and they should have ensured all fishermen knew the rules,” said assistant director of fisheries (marine) Surajit Bag. “If any vessel is seen, an FIR will be filed.” District officials said the fishermen's association would get a notice in connection with errant trawlers on Wednesday. Fishermen insisted these trawlers were returning to the shore from a previous journey. “More than 200 are out at sea. A few were seen in Digha because of better weather, others are docked at Kakdwip,” said fishermen’s association secretary Shyamsundar Das. Vessel leak In South 24-Parganas, Raj Rajeswari, a reportedly unregistered fishing vessel, sprang a leak in turbulent waters near Jambudwip Island. Sources said the vessel sailed last weekend. Sources said Fraserganj police

took six hours to save its five occupants from drowning with the vessel.

## **28 ‘defiant’ trawlers rounded up from sea in Digha, West Bengal, India**

<https://www.telegraphindia.com/west-bengal/twenty-eight-defiant-trawlers-rounded-up-from-sea-in-digha/cid/1832803>

"Police in East Midnapore’s Digha, acting jointly with the district administration, on Wednesday morning rounded up at least 20 vessels from deep waters and sent them to the shore for allegedly breaching the weather-related red alert that banned fishermen from entering the sea. A coast guard hovercraft dispatched near Mohona later reportedly rounded up eight more vessels. In all, 28 trawlers were rounded up. **West Bengal: Export pains may upset 4,640 tonnes Hilsa bounty from Bangladesh to India**

<https://www.itln.in/index.php/export-pains-may-upset-4640-tonnes-hilsa-bounty-from-bangladesh-to-india-logistics>

"This September a rare and special cargo is busy making its way on the backs of scores of trucks through the roads of the Petrapole border -located between India and Bangladesh. The cargo in question is none other than the King of fish ‘Hilsa’ which is a much sought-after variety in the Indian subcontinent, thanks to its scarcity on the Indian waters and the success of Bangladesh’s fishing bans and conservation plan that centres around increasing the Hilsa production. The cargo is also ‘special’ after the Bangladesh government as a goodwill gesture announced a temporary lift on its ban on Hilsa exports and allowed a ‘special permission’ to 116 Bangladeshi exporters to export a total of 4,640 tonnes of Hilsa in two phases from September 22.

This is the largest export volume being allowed as part of a friendly Hilsa diplomacy being practised between these two nations, after declining Hilsa numbers led Bangladesh to ban its Hilsa exports from 2012. It later put in place a sustainable conservation plan that has swung back the Hilsa production fortunes and achieved self-sufficiency. Kazi Belayat Hossein, president of the Bangladesh Frozen Foods Exporters Association (BFFEA) told Indian Transport and Logistics News (ITLN),

“While Hilsa fish is currently a banned export item, this is a gift from our prime minister Sheikh Hasina who has given special permission in lieu of upcoming Durga Puja festival in West Bengal when the fish is widely consumed. Initially, our government allowed 53 exporters with special permission to export 40 tonnes of raw Hilsa fish each up to October 5, 2021. The Hilsa will be sent on trucks along with ice by exporters, wherein each truck can carry anywhere between 5-8 tonnes of raw Hilsa fish that are packed inside insulated boxes.

These goods will also go through all regular commercial customs clearances and procedures while being cleared at the Petrapole border.” Catching the much-touted and loved Hilsa is no

simple affair! After an intense 12-14 hours of ‘day fishing’ beginning in the wee hours of early morning, Bangladeshi fishermen bring the prized Hilsa catch to local markets in the evening, where they are auctioned to local exporters. The exporters then pack it in ice, inside insulated boxes and send the shipments to Kolkata by trucks. These trucks undertake anywhere from 200 to 600 km journey across a day or two days to deliver the Hilsa in time to satiate the Bengali palates on this side of the border.

While Hilsa fishing was earlier limited to 3-4 villages, conservation efforts have yielded good results, what with Hilsa fishing encompassing several parts of towns and districts of Bangladesh including Chittagong, Barisal, Monpura, Samraj, Bhola, Patuakhali, Cox’s Bazaar, Khulna, Bagerhat, Dhalchar among others.

The ban on Hilsa fishing and exports was introduced in 2012 by the Bangladeshi government to protect fragile Hilsa fishing. There are two official fishing ban periods enforced by the Bangladesh Government and the upcoming 22-day ban begins from October 4, 2021. Shyamal Das, MD of M.U Sea Foods in Jashore, Bangladesh will be exporting close to 80 tonnes of Hilsa to India. Das told ITLN, “In the first phase government permitted 53 companies or exporters to process 40 tonnes of fish each, then again on Thursday afternoon government has published a revised one further allowing 63 more exporters to export Hilsa to India, thereby allowing for a total of 4,640 tonnes of Hilsa exports during this period that is a substantial haul.”

While the fish is consumed across many parts of India, it has cultural significance for the people of West Bengal, who also use it in religious rituals like the Saraswati and Ranna Puja. The Durga Puja festivities are slated to begin on October 11 and continue till October 17. The Bangladeshi Hilsa began to be imported into India after the decline in Hilsa production on the Indian side (West Bengal) of the Bay of Bengal, thanks to overfishing and declining Hilsa stock. Last year despite the Covid-19 pandemic, around 1850 metric tonnes (MT) of Hilsa made its way to India compared to 500 MT in 2019.

The craze for the fish had hit a peak last year when the Border Security Force (BSF) had seized close to 2,800 kg of smuggled Bangladeshi Hilsa at the Kalyani border outpost. Such is the success of Bangladesh’s fishing bans and conservation plan that Bangladeshi exporters are now rallying for their government to lift the export ban altogether. Abdul Matlub Ahmad, president of India Bangladesh Chamber of Commerce and Industry (IBCCI), said, “Since the production of Hilsa has increased in the past 5-8 years, we are, in fact, advocating via various levels of the government to remove the ban on Hilsa exports as Bangladesh is now self-sufficient in Hilsa production. It should now be made a regular export item as the sustained increase in production has led to the local Hilsa prices going down in Bangladesh, thereby making it an opportune time to restart Hilsa exports.”

Roadblocks ahead however, the current Hilsa consignment seems to be in troubled waters after importers and exporters, and trade bodies on both sides of the border sounded an alarm at the

huge mismatch between the amount of cargo promised and the short transit time frames being allowed. Many importers believe that the 'Durga Pujo special Hilsa export' announcement from Bangladesh was delayed this year by a fortnight. Further many claim that customs clearances at the Petrapole border sometimes easily last up to 12-14 hours, which further ends up slowing the process. In Kolkata, Syed Anwar Maqsood, secretary of the West Bengal Fish Importer's Association has warned that the delivery of these Hilsa export volumes was next to impossible. He said,

"This year the Hilsa exports began from September 22, 2021, onwards, which was a delayed start. Even if landing time improves, we cannot exceed exports of more than 1,000 tonnes of Hilsa in this timeframe. Before the ban in 2012, we would import 5,000-6,000 tonnes in one season which stretched from 4-6 months. Now we are expected to import the same commodity for which we would take 5-6 months in 10 days' time. How is it possible?" Maqsood told ITLN that he has written to the Bangladesh PMO, commerce minister, their foreign affairs ministry and even made presentations to Bangladesh high commissioner regarding the oversight and asked for a 2-month extension, but to no avail.

"Every day, not more than 50-60 tonnes can be exported at most meaning the current Hilsa consignment may not touch even 1,000 tonnes. While the goodwill gesture of friendship is great, we have written and requested the Bangladeshi side to lift the ban for a month or two so that we can bring in the entire consignment. In fact, even if we get two months of time, we will be able to fulfil only about 2,000 tonnes of Hilsa imports which is still a great outcome." he added. The Hilsa is currently sold at \$10 per kg in Bangladesh, while it is sold for Rs.900 for a kg and Rs.1400 for 1.5 kg in the wholesale market of Howrah, while retail prices maybe 20 percent higher. Interestingly the Indian government had dropped the 30 percent import duties on Hilsa exports from Bangladesh back in the '90s, while importers currently pay 5 percent on Hilsa exports from Myanmar, Maqsood added.

**West Bengal: An Expert Explains: How rare species of Sundarbans are threatened by human activities**

<https://indianexpress.com/article/explained/expert-explains-rare-species-sundarbans-threatened-by-human-activities-7527840/>

"Our world recently completed the 'United Nations Decade on Biodiversity (2011-2020)' and we have started to realise that biological diversity plays a key role in ecosystem functioning and is essential for human well-being and local livelihoods. Despite every effort made nationally to motivate actions in support of biodiversity conservation in all ecosystems, continuous loss of biodiversity is observed across the shorelines of settlement zones in Indian Sundarbans. This region harbours many rare and threatened flora and fauna which maintain the mangrove ecosystem's integrity and complexity. Small patches of mangroves are being lost gradually and quietly due to their indiscriminate destruction for either coastal development or short-term gains.

The loss of relatively small patches of mangroves may seem less perilous than large-scale deforestation.

However, these patches are observed to be enriched habitats of several rare and threatened flora and fauna. The continued loss of shoreline mangrove ecosystems has created fragmented and fragile mangrove habitats for rare taxa and framed barriers to their movement and dispersal. This irreversible loss of biodiversity is often neglected, which could never be compensated with any 'cut the established and plant the new' theory.

**Hub of coastal fisheries** Coastal mangrove habitats across the world are the preferred hub of coastal fisheries, aquaculture, pisciculture, shrimp farming, crab farming, all providing livelihoods to local people. In Indian Sundarbans, conversion of shoreline mangroves to shrimp farms and other pisciculture farms is very popular and it is the main source of income for the local people. However, these livelihoods come at the cost of frequent clearing of the shorelines once occupied by native mangrove species.

Thus, the habitats of many species continue to be reclaimed for shrimp culture, in spite of knowing that mangrove destruction could also be counter-productive, as the shrimp industry depends on various ecological services provided by the mangrove ecosystem in order to maintain its continued productivity. The building of dykes for the protection of coastal villages from tidal aggression/storm surges is another major cause that makes mangrove communities across the estuarine shorelines in the settlement regions of the Sundarbans, the most vulnerable targets of destruction.

Extensive surveys for the last few years (2014-2021) by our group observed that loss of these mangrove habitats also leads to loss of species that belong to IUCN's near-threatened or endangered category. These settlement mangroves used to be safe havens of diverse molluscs and crustaceans, but these are also disappearing due to the polluted discharges from shrimp ponds, harming the native habitat and breeding activities of these species. One such crustacean is a sesarimid mangrove tree-climbing crab called *Episesarma mederi*, rarely reported from Sundarban settlement mangroves.

Instead of popularising shrimp farming, if more indigenous fishing activities were encouraged, we could protect both our coastal threatened biodiversity and at the same time provide livelihood options to the coastal dwellers. The accreting mudflat is a favoured habitat for mangrove-dependent fish species, which enter the mudflat with the tidal flow but are trapped in these nets during the ebb current of the tides. In Vietnam, 100 km of concrete sea-dyke buffered with 9,000 hectares of reforested mangroves in front, proved worthwhile. The co-benefits of these nature-based strategies without perturbing the coastal development and local livelihood options will result in protecting biodiversity in the long run and would keep pace in developing eco-resilience of the Sundarban mangrove ecosystem to confront future climate change scenarios.

**West Bengal: Extreme weather events in India made women, children more vulnerable to modern slavery, flags report**

<https://www.downtoearth.org.in/news/climate-change/extreme-weather-events-in-india-made-women-children-more-vulnerable-to-modern-slavery-flags-report-79128>

"Climate change-induced extreme weather events put women, children and minorities at risk of modern slavery and human trafficking. The phenomenon is on the rise in India, among other countries, warned the International Institute for Environment and Development (IIED) and Anti-Slavery International in a recent report. Modern slavery — including debt bondage, bonded labour, early / forced marriage and human trafficking — converge with climate change, particularly climate shocks and climate-related forced displacement and migration, the report said. The report observed what happened in Sundarbans, for instance. The delta region is characterised by intense, recurrent and sudden onset disasters, as well as slow onset ecological degradation making large areas uninhabitable. Rising sea levels, erratic rainfall, increased frequency of cyclones, tidal surges and floods, mean that millions of people across the Sundarbans are unable to work for most of the year.

In 2009, Cyclone Aila caused widespread damage to lives and livelihoods. In 2020, during Cyclone Amphan, 400 kilometres of embankment was breached and seawater entered the flood plains resulting in widespread displacement from homes and loss of livelihoods for more than two million people. Such events made locals vulnerable to traffickers and drove them into forced labour, it said. Human trafficking had increased following the tsunami in Indonesia in 2004 as well. Severe cyclone and flooding in Sundarbans delta had also reduced the land for agriculture, which is the major source of livelihood.

While restrictions were imposed by bordering countries, smugglers and traffickers operating in the affected region targeted widows and men desperate to cross the border to India to find employment. Women were trafficked and often forced into hard labour and prostitution, with some working in sweatshops along the border. People displaced and migrating from rural to urban areas with no resources, skills or social networks at their destination are targeted by agents and / or traffickers in Dhaka or Kolkata.

A case study from Accra in Ghana showed that after drought, the young men and women in northern Ghana were forced to migrate to major cities. The women worked as porters and are at risk of trafficking, sexual exploitation and debt bondage. At the same time, climate change has made children more vulnerable, flagged the IIED report. The report established the close relationship between lack of resources, alternative livelihoods, safety nets and the protection against loss and damage as well as debt and exploitation. Scale of displacement The report has been released a month ahead of the Conference of Parties (CoP26) United Nations climate summit in Glasgow, the United Kingdom.

Over 216 million people could be internally displaced by 2050 across six regions due to climate change, according to World Bank estimates. Of these, over 81 per cent will be in Sub-Saharan Africa (86 million), East Asia and the Pacific (49 million) and the South Asian region (40 million). As many as 55 million people were internally displaced within their countries due to extreme weather events in 2020. This is the highest in the last one decade. This would be in addition to the existing 40.3 million people living under slavery in the world.

NICEF has repeatedly warned that climate change increases the risk of girls being pushed into unsafe migration / displacement, which can expose them to the risk of modern slavery. Global climate frameworks including the Paris Agreement in 2015 and Cancun Adaptation Framework (CAF) in 2010 have acknowledged climate-induced migration and displacement. “This research too identifies climate change as a risk multiplier that makes people who are already vulnerable due to conflict or inequality more likely to become victims of modern slavery,” said Adéla Mackie, fellow, Anti-Slavery International.

Way ahead Climate and development policy-makers urgently need to recognise that millions of people displaced by climate change are being, and will be, exposed to slavery in the coming decades, the IIED report flagged. Policymakers should therefore develop targeted actions, at national and international levels, to address the issue. The global and regional discourse on development and climate policy must consider trafficking and slavery risks due to climate shocks. Several ongoing initiatives — including the Warsaw International Mechanism Task Force on Displacement (WIM TFD), the Sendai Framework, etc — should be coordinated to increase understanding of, and response to, growing risks of climate-induced migration / displacement and exposure to modern slavery.

### **West Bengal: Three more depression waiting! Heavy rain warning issued again**

<https://www.thestatesman.com/bengal/three-depression-waiting-heavy-rain-warning-issued-wb-1503009778.html>

"The heavy rains that have been caused by the low pressure are showing no signs of abating As a result of heavy rains, several districts besides Kolkata were also inundated. Meanwhile, the situation is becoming increasingly unfavorable The Alipore Meteorological Department said three more depressions were developing. Due to which the rain may continue till next week. So the disaster is not diminishing right now. According to the weather office, heavy rains are expected in several districts of the state till Wednesday. Heavy rains are expected in several districts of South Bengal from Sunday night.

On Monday, the situation became more complicated It has been reported that the intensity of rain may decrease on Tuesday. Meanwhile, a cyclone is looming over the Gangetic West Bengal. In addition, there is a seasonal axis extending over Kolkata to the Bay of Bengal. Due to these two,

a cloud of disaster is hovering in the sky of Bengal. Fishermen have been advised not to go to sea. The river water level is forecast to rise due to heavy rains in the next few days. The administration has already opened a 24-hour control room. However, the meteorological department's warning is raising concerns.

Which has reached the administrative building of the state Navanne. The districts have been warned. Emergency funds have been sent to every district magistrate to deal with the disaster. 56 relief camps are running. Where there are more than 60 thousand people. The administration has already evacuated 141,000 people from the danger zone. Meanwhile, the temperature has dropped at a record rate due to continuous rains. Today's maximum temperature will be 26.2 degrees Celsius which is 6 degrees below normal. The minimum temperature will be 24.6 degrees Celsius. The relative humidity in the air is a maximum of 96 percent and a minimum of 69 percent. The rainfall in the last 24 hours is 160.2 mm.

### **West Bengal: Bangladesh allows export of over 2K tonne of Hilsa to Bengal**

<http://www.millenniumpost.in/kolkata/bdesh-allows-export-of-over-2k-tonne-of-hilsa-to-bengal-453668>

"The fish-loving Bengalis have something to cheer about ahead of Durga Puja with the Bangladesh government allowing traders to export 2080 metric tonnes of Hilsa to Bengal. The first consignment is expected to reach by Wednesday-Thursday. Bengalis have been craving for quality Hilsa fish as the available stock has not been able to tickle the taste buds. The domestic yield has been very poor this year and the stock of the Myanmar variety is also getting exhausted fast.

""The consignment is a goodwill gesture on part of the Bangladesh government. From our experience last year, we believe that the quality will be good. The sizes will vary between 500 gm and 1.5 kg, and so, it will be affordable for the middle class as well as the upper class. The news is like music to the ears of fish lovers as well as traders associated with import and export ahead of the Durga Puja,"" Bijan Maity, general secretary of Kakdwip Fishermens' Association said. A fish trader in Howrah rued that the amount that will be exported will be negligible with the total consumption in the state being over 30,000 to 40,000 metric tonne on an average.

""There has been no communication regarding the export of Hilsa as yet to our department. However, I have received information from a section of traders and wholesalers that the

Bangladesh government has given the license for sending 2080 metric tonne of Hilsa to Bengal," Akhil Giri, the state Fisheries minister said. The production of Hilsa — the most iconic fish of the Bengali culinary pantheon — has dwindled from around 80,000 tonne in 2001 to around 10,000 tonne in 2017, largely because of excess fishing in the Bay of Bengal. About 8,000 tonne of Hilsa has been netted this year against 37,000 tonne three years back. At least 52 fish trading companies have been given the nod by the Commerce ministry in Bangladesh and each of them can export 40 metric tonne of Hilsa. The export will be allowed till October 10.

### **West Bengal: Twin festivals, floods send fish prices through the roof**

<https://timesofindia.indiatimes.com/city/kolkata/twin-festivals-floods-send-fish-prices-through-the-roof/articleshow/86271771.cms>

"Fish prices have soared in city markets following a spurt in demand due to twin festivals this week and hiccups in supply owing to flood situation in coastal regions. Demand for fish has increased due to Vishwakarma Puja and Arandhan festival, commonly known as Ranna Puja, when fish, particularly hilsa, is in high demand. Prices of most of fish varieties have increased by Rs 100 a kg, while in case of hilsa it has gone up by Rs 200-300 a kg in the last two days.

"The rise in fish prices is due to a yawning gap between supply and sudden spike in demand. The supply line is badly hit by the flood in the coastal areas. There is more than 3 days delay in supply," said Amar Das, a fish trader at Lake Market. The hilsa of the size of 800-900 gm which was selling at Rs 1,700 a kg a week ago is now selling at Rs 1,900-2,000 a kg. The price of parshu has also risen by Rs 150 a kg. But the prices are only because of the Arandhan festival and Vishwakarma puja. Hopefully, the prices will be sobered within the next three or four days. "We had a tough time buying hilsa.

The prices suddenly soared to an unaffordable height. But having hilsa in the Arandhan festival is a long tradition. So, we bought a medium size one burning a big hole in the pocket," said Sheli Dasgupta, a housewife. One of the big reasons behind the demand-supply gap is the absence of the supply line from Basirhat, Canning, Sandeshkhali and Basanti where fisheries were washed away during Yaas. Supply from these fisheries will take another six to nine months to resume, said an official of fisheries department. The steady supply of smuggled hilsa from Bangladesh had sobered prices of majority of the varieties.

But, torrential rain caused flooding and poorer roads started causing delays in supply from Odisha and Andhra, two states on which fish-loving Bengal is somewhat dependent. Meanwhile, because of the demand, the juvenile hilsa from Kakdwip has started flooding markets. "Despite repeated warnings, fishermen are committing Harakiri by catching juvenile hilsa with fine nets. This will have a detrimental effect on the lives of the fishing community," said Bijon Maity of Kakdwip Fishermen's Association.

### **West Bengal: Illegal fishing: 16 fishermen held in Sundarbans**

<https://thefinancialexpress.com.bd/national/country/illegal-fishing-16-fishermen-held-in-sundarbans-1631538792>

"The Forest Department in a drive on Sunday night detained 16 fishermen along with a trawler for unauthorized entry into the Sundarbans under Satkhira range and fishing there. Mohammad Sultan Ahmed, in-charge of Nildumur Station of Satkhira Forest Department, said during a regular drive a surveillance team detained 16 fishermen while they were engaged in catching fish at Mandarbaria canal in Sundarbans without valid documents and passes. They also seized a trawler and fishing net from their possession. All the detainees hailed from Rayenda Bazar of Bagerhat's Sharankhola upazila. A case was filed with the local police station in this connection, reports UNB.

### **West Bengal: Poor yield in Bengal, hilsa hope on import from Bangladesh**

<https://www.telegraphindia.com/my-kolkata/news/poor-yield-in-bengal-hilsa-hope-on-import-from-bangladesh/cid/1830757>

"Fish traders in the city are keenly waiting for clearance from Bangladesh's ministry of commerce to receive their supply of ilish ahead of Puja. The domestic yield has been very poor this year and the stock of the Myanmar variety of the fish is almost over. Last September, the Bangladesh government had allowed fish traders to export hilsa to Kolkata. With little supply from Bengal's own waters, fish traders from the wholesale markets of Kolkata and Howrah are now banking on a Bangladeshi 'goodwill gesture' like last year.

"We are desperate for some supply from Bangladesh. The domestic supply of hilsa is negligible. The variety of hilsa from Myanmar was the only hope but the stock of that is almost over now," said Syed Anwar Maqsood, secretary, West Bengal Fish Importers' Association. "We have been talking to our counterparts in Dhaka to figure out the situation there."

The production of hilsa in Bengal has dwindled from around 80,000 tonnes in 2001 to around 10,000 tonnes in 2017, largely because of excess fishing in the Bay of Bengal. "From around 37,000 tonnes of hilsa around three years ago, the catch has been going down steadily. This year it won't be more than 1,000 tonnes," said Bijan Maity, secretary, Kakdwip Fishermen Welfare Association. The Bengal government has banned fishing of hilsa between April 15 and June 14, the breeding season of the fish. Bangladesh has been able to check the declining hilsa population by banning fishing during the breeding period and establishing sanctuaries. "We had a good

catch even this year and till a few weeks back, hilsa was affordable. The price has slowly started rising now,” said Kazi Abdul Manna, director of Seven Star Fish Processing Limited, from Pabna in Bangladesh. Manna said around 100 traders from Bangladesh had applied to the ministry of commerce in Dhaka for permission to export hilsa to Kolkata this year.

### **West Bengal: Indian Coast Guard saves lives of 11 fishermen near Sagar Island**

<https://www.thestatesman.com/bengal/indian-coast-guard-saves-lives-11-fishermen-near-sagar-island-1503006456.html>

"The Indian Coast Guard (ICG) today informed it has saved the lives of 11 fishermen whose boat underwent an engine failure and was stuck in the Bay of Bengal near Sagar Island. The ICG Kolkata headquarters has informed that due to sudden weather changes causing a swell in the seas, it began warning fishermen against venturing out to the seas. During this, the ICG ships at sea received information from the assistant director of the state fisheries department in Contai, at 08:45 am today, about a stranded fishing boat named 'FB MAA SHITALA' stuck at 35 nautical miles south of Sagar Island with 11 crew onboard.

The boat was reported to have an engine failure and was adrift in the area. Realising the emergency, the ICG crew dropped anchor and were calling for help. The Indian Coast Guard immediately launched a multifarious swift rescue operation. The Coast Guard Dornier aircraft undertaking surveillance in the area was immediately diverted to locate the boat. Meanwhile, ICG Ship Anmol on routine deployment was diverted for assistance. The Coast Guard aircraft located the fishing boat and vectored the ICG ship to the location. In a sea-air coordinated operation, braving the rough seas and prevailing cyclonic conditions, the ICG ship Anmol rescued all 11 crew safely from the stranded fishing boat.

The crew was supplied with basic necessities and their condition was observed to be stable. They were brought to Haldia by ICG ship at 5:30 pm and were handed over to local police. All precautions towards the Covid-19 pandemic were undertaken during the operation. The ICG, in its statement, said "Such successful Search and Rescue (SAR) missions despite challenging weather reinforces the trust and confidence of fishermen in distress on the Indian Coast Guard as a leading SAR agency. The recent weather forecast by Indian Meteorological Department (IMD) indicates a low-pressure area over Northwest Bay of Bengal and adjoining areas. Presently, the system has intensified into a well-marked low-pressure Area with associated cyclonic circulation moving west-northwesterly and is likely to concentrate into a depression over Northwest Bay of Bengal and adjoining areas of north Odisha and West Bengal coast during the next 12 hours.

**West Bengal: The Government recently raised the compensation for tiger widows to Tk300, 000 in case of death, and Tk100, and 000 in case of serious injury**

<http://www.tbsnews.net/features/panorama/she-was-married-twice-sundarbans-tigers-killed-both-her-husbands-301687> "One day, in the early 1990s, her husband Charan Sardar, a fisherman, went into the waterways in Sundarbans with others from Jejepara. On that fateful day, a tiger suddenly attacked the group. As Sundarbans tigers are not water-shy, the man-eater jumped on Charan in the water, sunk its teeth into his neck and dragged him into the jungle. Charan's body was never found. After the news reached home, bereaved Sonamoni broke down at the loss of her beloved husband. Life of a widowed marginal woman has always been tough. But life turned upside down for Sonamoni when her mother-in-law blamed her for the loss of his son.

"She said I was a curse for her family; that I was an ill-omened husband killer," Sonamoni told us sitting in the narrow veranda of her tiny hut. With many such huts attached to each other in a small area, there is no way for fresh air to get in. Despite being adjacent to the world's largest mangrove forest, her place was extremely hot. We were bathing in sweat as Sonamoni went on. "My in-laws evicted me from my home. I was forced to go back to my parents' place," Sonamoni said. "Back at my parents' place, the wives of my brothers made the same accusations. They said I was a witch, an ill-omened husband killer. I would bring a curse to their families and kids."

Sonamoni was expelled from her parents' home too. She again returned to her in-laws. This time, Bharan Sardar, the younger brother of her deceased husband, who also was a fisherman, took pity on her. He married Sonamoni. By early 2000s, Sonamoni had four kids from two of her husbands. Life returned to its normal rhythm. However, 2002 was a tragic year for Jejepara as a whole. Sundarbans tigers killed several people from Jejepara that year. Bharan Sardar was one of them. The tiger jumped on Bharan just like it did on Charan, and dragged him deep into the forest. The body of Bharan, Sonamoni's second husband, was also never found. Sonamoni's mother-in-law was dead by now. So, she didn't have to take the blame for 'killing' another of her sons. She instead had other worries – four extra mouths to feed. Sonamoni did any manual labour work she got and raised all her children.

After two of her daughters were married off, Sonamoni started to live alone because the wives of her sons do not accept her into their families. Sonamoni has become a burden to the sons she raised through blood and sweat. Sonamoni is one of the more than 350 other tiger widows in Satkhira Shyamnagar, whose life has been shaped by the human-tiger conflicts. Most of these women live in social stigma, abject poverty, and some in absolute dirt. "Human-tiger conflicts in this region are responsible for the misery of these people," said Ranajit Kumar Mandal, a monitoring officer at LEDARS, a local NGO in Satkhira Shyamnagar that, Ranajit said, worked with more than 500 tiger widows of Satkhira Shyamnagar and Khulna's Koyra region for several years. What causes human-tiger conflicts? "Sometimes, in a certain area, a tiger becomes ferocious.

Traditionally, people call them man eaters. In these instances, the same tiger keeps killing people for weeks,"" Munirul H Khan, a professor of Zoology at Jahangirnagar University told The Business Standard. German biologist Hubert Hendrichs conducted research in the Sundarbans in the 1970s. Hendrichs found Sundarbans tigers drinking saline water is a contributing factor to their man killing tendency.

According to Hendrichs, when the Sundarban tigers drink saline water, it may cause damage to their livers and trigger the unusual man eating behaviour. He categorised four types of tigers in the Sundarbans. Some are shy of human presence, some are circumstantial killers, some are opportunist man killers but mostly depend on natural game, and some tigers are compulsive man killers. He said 70% of the tigers are human shy, but the remaining 30% are responsible for human casualties in Sundarbans. However, ecologist Khasru Chowdhury claimed in an article that,

"It is not the rate of salinity in water but forest quality, especially vegetation quantity, that is responsible for making a game killing tiger into a human-killer." He mentioned various other reasons for tigers turning into man-eaters including, scarcity of substantial natural prey, the tiger being gum-infected, limb-injured, one-eyed, or scabies- infected, etc. A BBC report in 2011 mentioned that "it is thought that around 80 people are killed every year by the tigers on the Bangladeshi side of the Sundarbans forests." In recent years, however, the government data shows that human-tiger conflicts have reduced in Bangladesh except, in 2020-21. The year witnessed a slight increase in human-tiger conflicts.

According to Bangladesh Forest Department (BFO) Tathya Konika 2020, the last large scale human casualty from tiger attacks was in 2011-12 (22 dead, 8 wounded), 2012-13 (16 dead, 1 wounded) and 2013-14 (5 dead, 1 injured). In the following three years, only one wounded victim was recorded. In 2019-20, there were no recorded cases of injury or killing by tigers. Khulna region BFO Forest Conservator Mihir Kumar Doe told The Business Standard that the casualties reduced because of "the government's efforts through various initiatives like the formation of nearly 50 Village Response Team who preach awareness about tiger conservation and push back tiger if it intrudes into a village." Munirul H Khan said one of the reasons tiger attacks have decreased in recent years is the decrease in tiger population.

"Once hundreds of people were killed in tiger attacks but back then, there were hundreds of tigers too." According to a tiger census in 2018, about 114 tigers remain in the Bangladeshi side of the Sundarbans. In the 2020-21 financial year, however, 3 people were killed and 1 injured in tiger attacks, Mihir Kumar Doe told TBS. What does it say about a sustainable solution to end the human-tiger conflicts? In his response, LEDER's Ranajit Kumar Mandal didn't sound very hopeful. "As more people are losing their livelihoods, many are increasingly dependent on the forests for living.

The indiscriminate shrimp and crab cultivation in the area has reduced the scope of work for the local people. Since shrimp and crab cultivation require very few people to look after them, more local people are getting unemployed,"" Ranajit said. ""An agricultural land that would require 15 people to work in before requires two people after they are turned into shrimp and crab enclosures,"" he added. More people in the forests could mean more casualties in the future, again. Government aid doesn't benefit the majority of tiger widows. Why?

The government pledged to assist the family of tiger victims with Tk100,000, if a loved one was killed, and Tk50,000, if a loved one was wounded, starting from the 2010-11. According to DFO, from 2011-12 to 2019-20, 46 people died and 16 were wounded in tiger attacks. In Jelepara, we talked to half a dozen such widows who lost their husbands to Sundarbans' tigers. No one received any aid from the government as most of their husbands died in 2002. So, aid is not reaching hundreds who lost their loved ones during the tiger killing spree in the previous years.

Recently the aid amount was increased to Tk300, 000 for death and Tk100, 000 for the wounded, said DFO's Mihir Kumar Doe. The news is useful for future casualties. But it doesn't help the widows of Jelepara. The far reaching detrimental effects of tiger-human conflicts Tiger widow Buli Dashi fights a totally different war. After her husband, Arup Mandal, died in a tiger attack in 2002, she raised three of her kids by sustaining on income from fishing and getting wood from the Sundarbans, like her husband. But a few years ago, local goons raped and murdered her elder daughter. She was only in class eight. Mother Buli Dashi, despite being helpless herself, has been fighting in the court for justice against the goons who are politically influential. The conflict with the tiger is ripping apart the lives of wounded men as well.

Shuvash Shana, locally known as Takum, survived a tiger attack around five years ago. A tiger damaged his eyesight and its mighty bite on his shoulder made him partially paralyzed. He cannot work. Following the attack, Takum's wife left with the kids. Takum now begs for food here and there. His mother Dino Dashi also lost her husband in the tiger attacks in 2002. Dino Dashi lives at the mercy of her daughters' husbands. Jelepara residents, fully dependent on Sundarbans resources for livelihood, know they risk encounters with man-eaters in their part of Sundarbans. But when it comes to the question of securing the next meal, the risk becomes acceptable.

### **West Bengal: As local supply runs low, Kolkata spends a fortune on smuggled hilsa**

<https://timesofindia.indiatimes.com/city/kolkata/as-local-supply-runs-low-kolkata-spends-a-fortune-on-smuggled-hilsa/articleshow/86082567.cms>

"The dearth of hilsa in Indian waters has spawned the smuggling of this much sought-after delicacy from neighbouring Bangladesh. With most aficionados unable to satiate their

hunger for the hilsa this year due to poor availability, the smuggled fish is fetching over Rs 3,000 a kg in the city. A freshly netted smuggled hilsa weighing around 2kg is a gastronomic delight on which even an average Kolkatan is ready to splurge even if that means cutting down on the month's food bill. "We are often puzzled to see unlikely customers picking up hilsa weighing more than 2 kg, paying over Rs 6,000 for it.

Of course, the taste is guaranteed," said a fish vendor at Lake Market. Sunirmal Adhikari, a teacher residing in Kalighat, is one such hilsa-lover. He couldn't resist the temptation of taking home a 1.5-kg fish, spending a mini fortune knowing fully well that he would have to survive on eggs and vegetarian meals for the rest of the month. "I just couldn't resist it. Just the sight of the silvery hilsa is making me salivate. I am sure it will be heavenly," Adhikari told TOI at a city market. According to vendors, the hilsa is mostly smuggled through the riverine border of Angrai and Hakimpur. Some quantities come in through the Hili border of north Bengal. Since its export is banned by Bangladesh, the fish is hidden under other varieties in boats to elude the enforcement authorities on either side. Recently, the BSF seized a huge cache of hilsa at a border check point.

Hilsa is such a craze on either side of the border that it has become a handy tool of diplomacy between the two nations. Bangladesh premier Sheikh Hasina banned hilsa export to India after the Bengal government opposed the Teesta wate-sharing pact in 2012 on the apprehension that it would dry up the river in north Bengal. Ever since the ban, the availability of hilsa in city markets has declined sharply and the supply of the smuggled Bangladeshi variety is erratic. "This year, smuggled fish has hit the city markets at the fag-end of the hilsa season.

The supply has been quite steady for the past six-seven days and the fish is flying off the baskets," said Bablu Naskar, a fish vendor at Lake Market. Bengal's fisheries minister Akhil Giri admitted that some hilsa from Bangladesh "is coming to the city markets" though it is much less than what the demand is. According to those in the fish trade, it is their own greed that has led to the drying up of hilsa catch in the Ganga over a period of time.

"We have ourselves to blame for this predicament. Our fishermen did not abide by the government's ban and recklessly netted juvenile hilsa. Now the fish has deserted this stream and is swimming to a safer haven in Bangladesh waters to lay eggs. Our 5,000-odd trawlers venture into the waters and bring back juvenile hilsa to recover the fuel costs. But this is suicidal," said Bijon Maity, secretary of the Kakdwip Fishermen's Association. Bangladesh on the contrary puts enormous impetus on the conservation of the fish and catching juvenile hilsa or fishing during its breeding period is meted out with stringent punishment.

**Uttarakhand, Uttar Pradesh, Bihar and West Bengal: Nearly 30 per cent reduction in fish species in Ganga in four years, says study by Centre**

<https://www.newindianexpress.com/nation/2021/sep/08/nearly-30-per-cent-reduction-in-fish-species-in-ganga-in-four-years-says-study-by-centre-2356097.html>

"In a worrying trend, there has been a reduction of nearly 30 per cent in the total fish species in the Ganga river between 2016-2020, owing to changes in the hydrological structure due to dam construction, land modification, pollution, industrial effluents and illegal fishing activities, according to a central government assessment. The Central Inland Fisheries Research Institute (CIFRI), Kolkata, under the Ministry of Agriculture carried out quarterly field sampling from April 2016 to March 2020 to understand the distribution and current status of fish species on the IUCN (International Union for Conservation of Nature) Red List along the entire stretch of the Ganga. The assessment shows that the status of fish being threatened is a major concern nationwide, particularly in the Ganga.

From the present study, a total of 104 freshwater fish species were recorded in the river. Earlier, 143 freshwater fish species were reported from the Ganga, among which 29 -- 10 endangered and 19 vulnerable -- were under the Red List. It further said that changes in hydrological structure due to dam construction, land modification, pollution, industrial effluents and illegal fishing activities are the major causes for alteration of fish diversity in the Ganga basin, which affects conservation and management strategies.

"Proper study of the ecosystem should be done prior to implementing any hydro-related projects in the Ganga. Restoration of riverine connectivity with associated water bodies like wetlands which allow fish species migration for feeding, breeding as well as rearing should be managed because the linkage is an opportunity for improvement of species community structure," noted an expert from the CIFRI. The Ganga is divided into three stretches based on its characteristics, viz. upper (Uttarakhand), middle (Uttar Pradesh and Bihar) and lower (West Bengal) stretches. Quarterly field sampling was done along the whole stretch of the river to collect data on fish diversity and their abundance over a period of four years.

"Several fish species have been recorded under the IUCN Red List category during a survey. As these are economically prized fish, effective conservation and sustainable management plans should be implemented to restore the germplasm of fish species," the expert added.

### **West Bengal: Sundarbans struggles under wave cyclones, storm surges**

<https://magazine.outlookindia.com/story/india-news-sundarbans-struggle-under-waves-of-cyclones-storm-surges/304960>

"Goranbose Gram Bikash Kendra, an NGO working at the grassroots in Sundarbans region of West Bengal to prevent, rescue and rehabilitate of human trafficking, has a separate wing working on climate change unusual for NGOs engaged in anti-human trafficking activities

to focus issues related to environment. But the two coalesce in the Sundarban ecologically sensitive and densely populated region, prompting the N cause with effect—the impact of climate change has started affecting livelihood, resulting in migration and human trafficking. “Climate change has had a direct impact on displacement, local agriculture and fish produce, affecting livelihood, prompting work-related migration...

### **West Bengal: Fisheries dept to cancel license of trawlers carrying small Hilsa**

<https://www.thestatesman.com/bengal/fisheries-dept-cancel-license-trawlers-carrying-small-hilsa-1503003447.html>

"In a desperate bid to stop the catching of small Hilsa fish, the state fisheries department plans to cancel licenses of trawlers used by fishermen to net most Bengalis' favourite fish. This year, city markets are running out of large-size Hilsa that come from Bangladesh and from local areas along the Bay of Bengal in Digha, Diamond Harbour and Roopnayan river in Kolaghat of East Midnapore. Sources in the fisheries department said that fishermen using trawlers venture out to catch small Hilsa weighing between 250 gm and 500 gm in the Bay of Bengal and other rivers connecting to the sea, bringing down the number of fish that grow to large size. And this trend has caused a huge crisis in the supply of large local Hilsas in markets across the state. “We are planning to cancel licenses of trawlers if these vehicles are found carrying small Hilsa.

The move will help ensure adequate supply of local Hilsa fish of large size weighing 800-900 grams and above each in the market ahead of the departure of the monsoon by the Durga puja festival,” the sources said. On the other hand, the most coveted Bangladeshi Hilsa may also hit neighbouring West Bengal ahead of the festival. Anwar Muqsood, secretary of both the Fish Importers' Association and Howrah Wholesale Fish Market has given a ray of hope to the fish-loving Bengalis, saying, “We are expecting a considerable consignment of Bangladeshi Hilsa fish by the end of September.

We are also in constant touch with the Bangladesh government through different administrative levels in Delhi for the past one month in this regard,” he said. “This year, city markets are virtually running out of even the local silverfish in our state. The non-availability of the local Hilsa has made it highly expensive. It costs around Rs 2,000 per kg in city markets,” he added. “In some markets, Hilsa weighing around 200 to 500 gms are being sold at around Rs 600 to Rs 800 per kg,” a retail seller at Dum Dum bazaar said.

In September 2020, as much as 1,450 metric tonnes of Bangladeshi Hilsa were imported to India after Bangladesh lifted the ban on exporting the fish. With the lifting of ban Kolkata markets had an adequate supply of Bangladeshi Hilsa during the Puja last year. For the first time since 2012, when Bangladesh had banned the export of Hilsa fish to India, the government of the neighbouring country has given special permission for the export of the much-loved delicacy to

India.

**West Bengal: Twin benefits of mangrove plantation in Sundarbans: building resilience to climate change and supporting rural livelihood**

<https://en.gaonconnection.com/sundarbans-west-bengal-mangroves-environment-trees-plantation-women-empowerment-livelihood-climate-change-cyclones-amphan-yaas-42523/>

"It's been over a year but the residents of Gopal Nagar gram panchayat in the Sundarbans are yet to get over the frightful and ferocious Amphan cyclone that hit them last May during the COVID19 lockdown as it tore through their village uprooting coconut trees and inundating their farmlands and freshwater ponds with sea water. "We lost joumeen (land), jaijaat (property), pukur (pond), graha (house), dhan (crop) in the cyclone," 35-year-old Rintu Das, who lost her goats, cows, and kachha house in the Cyclone Amphan, told Gaon Connection. "Saline water entered our fields and ponds. It damaged our soil and killed our fishes. Now everywhere there is salinity. Amra ki korbo? (What will we do?)" Asked an exasperated Das in her local language Bengali.

The villagers in Sundarbans delta of West Bengal are no strangers to cyclones. But in a warming world and the changing climate, as tropical cyclones get more intense and their frequency increases too, inhabitants of the delta islands are finding it hard to sustain their lives and livelihoods. As the sea level rises, several of these islands are slowly sinking. A unique initiative led by a group of rural women in the Sundarbans and supported by a non-profit is trying to create 'green barriers' along the coast in order to build resilience to face extreme weather events and natural disasters such as cyclones.

Over 16 women associated with Banashree Mangrove Suraksha Committee in Gopal Nagar gram panchayat of South 24 Parganas district are working with Sustainable Environment and Ecological Development Society (SEEDS) India, a non-profit building the resilience of people exposed to disasters, to plant and guard thousands of mangroves in their Gopal Nagar village. As part of the joint initiative, over 6,500 mangroves, including indigenous species such as timber, are being planted in five-acre (two hectares) land along the bank of the local Gobadhia river, a tributary of Hooghly. The project was kicked off recently on August 15 on Independence Day when over 3,000 mangrove saplings were planted by the village women on a single day, who are now also guarding them daily. Thus, apart from responding to the climate change induced threats, such as sea level rise and salinity ingress, the mangrove plantation is providing

livelihood opportunities to the rural women, who have signed a contract with SEEDS India and are being paid to nurture and guard the mangroves.

The Sundarbans delta Over the past three decades, the ecologically fragile Sundarbans region in India and Bangladesh has lost 24.55 per cent of mangroves (136.77 square km) due to erosion. Most of the erosion is permanent. It is vital to understand the importance of mangroves at a time when frequency and intensity of extreme weather events such as cyclones are predicted to increase in the future. Mangroves are a group of plants that can survive in salty soil and tides. They act as an effective barrier against disasters such as cyclones by protecting the earthen banks as well as reducing the damage.

A 2005 study published in the Journal Science indicates that a density of 30 mangrove trees per 100 square metre can reduce the flow of a tsunami wave up to 90 per cent. “Land mass in West Bengal is very shallow. Because of high surface temperature, the intensity of cyclones and high tides has gone up. Mangroves break the speed of waves during a cyclone. They are line of defense,” Sanjay Vashisht, Director, Climate Action Network South Asia (CANSA), told Gaon Connection. CANSA is a coalition of more than 300 civil societies’ organisations working in eight South Asian countries to promote action to address impacts of climate change. “Mangrove is also a hotspot of biodiversity and plays an important role in building resilience for communities that live in the coastal areas.

Fisheries are one of the livelihood options for communities in Sundarbans. The mangroves provide habitat for fishes,” Vashisht added. Mangroves to rescue Gopal Nagar gram panchayat in South 24 Parganas district is considered one of the vulnerable villages in the Sundarbans. The village has faced several cyclones including Cyclone Yaas (2021), Cyclone Amphan (2020), and Cyclone Aila (2009). Local people have time and again lost their livelihood, livestock, mud houses.

A survey by SEEDS India showed that about 300 settlements in this village were destroyed by Amphan that left a trail of destruction and devastation in the state last year. By planting mangroves, the villagers hope to create a natural barrier to protect them from the impacts of cyclones. “As part of the mangrove plantation in our village, we first went to the forest early in the morning by boat to collect the saplings from the mangrove forest. Next day [August 15], some saplings were planted by the forest officials and then we women took over.

We dug small pits and planted all the saplings till evening,” Rintu Das, a member of the self help group, told Gaon Connection. According to her, their work is not limited to a day long drive alone. “Apart from planting these mangroves, we also guard these saplings. We have to protect them from cows and goats who eat their leaves. Besides, fishermen also uproot these saplings,” the 35-year-old added. As part of the contract with the non-profit, these rural women have to guard these saplings till they grow over five feet in height. This means an additional responsibility for at least one to one-and-a-half-year.

“It is precisely for this reason that we have signed a year-long contract with these women,” Kolkata-based Faiz Ahmed Khan, programme manager, SEEDS India, told Gaon Connection. When building resilience is a source of income as part of this joint initiative and the yearlong contract, Rs 90,000 are to be given in three installments to the 16 self-help group women. “We have released the first installment of thirty thousand... We are trying to cover the five acre land with mangroves. In the past two-three years, ten to fifteen acre (four to six hectares) mangrove cover in Gopal Nagar and nearby villages has been destroyed due to cyclones,” informed Khan, adding that the project is supported by donors.

Once the mangroves are planted, the only role of the women is to safeguard them for a year. “Because of the cyclones, the land mass near homes gets eroded. Several houses are damaged too. This is where mangroves help. We are eyeing local species of mangroves such as vine. Its capacity of stopping erosion is very high,” informed the programme manager. Climate experts point out that community ownership of mangroves is important so they can look after the saplings. Also they stress that such afforestation events should not remain limited to a day or two. “Unfortunately such initiatives are only a day-long drive. If these saplings are not maintained, mangrove mortality gets high,” Vashisht said. He stressed that the restoration of native mangrove species needs to be prioritised to save the communities from extreme weather events.

According to India State of Forest Report (2019), West Bengal has 42.45 per cent of India’s mangrove cover. It is followed by Gujarat (23.66 per cent) and Andaman and Nicobar islands (12.39 per cent). The mangroves in Bengal are spread over an area of 2,112 square km across South 24-Parganas (2,082 sq km), North 24-Parganas (25 sq km) and Purba (East) Midnapore (four sq km). But like other forests, the mangrove cover is also under threat, which is leading to coastal erosion. Das and 15 other women in her SHG are hopeful that the green barriers they are planting will help lessen the impact of cyclones and safeguard their village.

### **West Bengal: Records scanty Hilsa catch, eyes imports**

<https://www.hindustantimes.com/india-news/queen-of-fishes-remains-elusive-despite-good-rains-hilsa-imports-provide-glimmer-of-hope-101629744389136-amp.html>

"Fishermen, who venture into the sea and catch the fish from the estuaries, have complained of a meagre catch, but imports provide a glimmer of hope, with the expectation that the Bangladesh government may allow some consignments ahead of the festive Durga Puja season. “The catch has been very poor this year. Till now we have hardly been able to catch around 2000 tons. In a year, when the catch is normal, the catch may go up to 20,000 – 25,000 tons. Earlier when the catch used to be good it went up to 60,000 – 70,000 tons. The last time we got a good catch was around 2017-2018,” said Bijan Maity, president of the Kakdwip Fishermen Association in Bengal, talking about the catch during monsoon, from June to September.

Other fishermen's associations in the three coastal districts of West Bengal echoed the sentiment -- the catch, once again, is poor. During the monsoon, shoals of Hilsa swim several kilometres from the sea into estuaries and then upstream along the rivers to spawn, after which they return to the Bay of Bengal. The eggs hatch in freshwater and the sub-adult Hilsa swim downstream into the sea. There's another cycle in February and March.

“This migration depends on multiple factors from depth of water at the mouth of rivers, amount of rainfall, river flush and water-pollution. The Hilsa, being very sensitive, change their course and swim in the direction where the conditions are favourable. If they don't find suitable conditions in Hooghly in West Bengal they enter the Meghna-Padma estuary (in Bangladesh). Some may even go towards the Irrawaddy in Myanmar,” said Shyamsundar Das, joint secretary of West Bengal United Fishermen Association. And this year, conditions aren't good in Bengal (like they haven't been for the past two to three years). Experts said that siltation on the riverbeds near the mouth of the river is a major factor. If the Hilsa doesn't get a depth of 30 - 40 feet, it won't swim upstream. In the Hooghly this depth has come down to around 20 - 25 feet due to years of siltation.

There is another major factor behind the decline. Bengal's gastronomic greed to savour Hilsa has resulted in reckless fishing. Thousands of mechanized boats resort to bottom trawling, using small-holed fishing nets, and destroying the young fish. “In India there is a fishing ban from mid-April to mid-June. But we also need to increase the net size so that juveniles can be spared. Bangladesh has introduced tough laws and is getting results. The country is getting a bumper catch almost every year. This year they have already reported a few lakh tons,” said Utpal Bhowmik a Hilsa expert and the former head of the riverine fishery division at Central Inland Fishery Research Institute.

In June 2020, when the Covid-19 pandemic and lockdown restrictions were lifted, fishermen's associations expressed hope of a bumper Hilsa catch, as the Ganges and its tributaries were less polluted due to the lockdown coupled with a good monsoon. But last year too, the catch was poor. With poor supply, prices have soared. The fish sells for Rs.2000 – 2500 a kg in Kolkata. Worryingly, decent-sized Hilsa (at least 1.5 kg) are hard to find in the market what is mostly available are juvenile hilsa weighing around 500 – 700 grams. Experts such as Bhowmik, believe the catch is good only every five to 10 years.

Others say that if the monsoon is still active in September, and water levels rise, the chance of a good catch improves. Right now though, everyone is counting on imports. The Hilsa importers' association claims that the Bangladesh government may allow some consignments to be exported ahead of the festive season. “Till now no consignments have landed at the border. A few exporters in Bangladesh have already applied for permission. We hope that the Bangladesh government will allow some consignments before the Puja season,” said SA Maqsood, secretary of the Fish Importers' Association in West Bengal. This year, Bengal will celebrate Durga Puja

in in the second week of October.

### **West Bengal: Tiger drags away fisherman in the restricted zone of Sunderbans Tiger Reserve**

<https://www.telegraphindia.com/west-bengal/tiger-drags-away-fisherman-in-the-restricted-zone-of-sunderbans-tiger-reserve/cid/1827728>

"A 50-year-old fisherman, Niranjana Kayal, went missing after he was dragged off by a tiger while catching crabs in the restricted zone of the Sunderbans Tiger Reserve at Gosaba's Satjelia in South 24-Parganas early on Sunday. This comes on the heels of another incident where fisherman Anna Das, 50, was killed by a tiger at Jhila (1) area of the Sunderbans while returning home in his boat on Friday. Forest and local officials said four fishermen, including Niranjana, had got down from their small boats to collect crabs, violating the forest department's caution not to venture into the restricted zone.

A tiger pounced on Niranjana and took him inside the forest, eyewitnesses said. "We are yet to spot him (Niranjana) and going by our experiences we fear he may not be alive," a forester said. "However, search is on," added the forester at the Sunderbans Tiger Reserve. Niranjana's sister-in-law Anita Kayal, who lives in Satjelia, said the fisherman was the second person in their extended family to be a victim of tiger attack. Anita's husband Anathbandhu was also killed by a tiger in 2015 while he was collecting crabs.

"The tiger was probably waiting inside a bush for hours to catch its prey. The four fishermen, along with my brother-in-law Niranjana, were collecting crabs at two different locations. Suddenly a tiger pounced on him and took him away inside the jungle," said Anita. Foresters in the Sunderbans said that since a large number of migrant workers had lost their jobs during the pandemic since last year and have had to come back home and remain jobless, the number of people venturing into the tiger reserve to catch crabs for a livelihood had increased manifold. After Sunday's incident forest officials have started an extensive campaign in the vicinity of the tiger reserve, asking people not to move enter the restricted zones to catch fish or crabs. In 2020, five persons were killed in tiger attacks whereas this year the count is two so far.

"We have started an extensive campaign requesting local residents not to enter the restricted zones illegally to catch fish or crabs. The fisherman, who has gone missing, had ventured into the restricted zones illegally. We are also intensifying our vigil to prevent such human intrusion into tiger reserve areas," said Jones Justin, the deputy field director of the Sunderbans Tiger Reserve.

## **West Bengal: A third of India's coastline underwent erosion in 28 years, Bengal worst affected**

<https://www.downtoearth.org.in/news/environment/a-third-of-india-s-coastline-underwent-erosion-in-28-years-bengal-worst-affected-78514>

"As much as 32 per cent of India's coastline underwent sea erosion and 27 per cent of it expanded between 1990 and 2018, according to a recent technical report by the National Centre for Coastal Research (NCCR) under the Union Ministry of Earth Sciences. The West Bengal coastline has been particularly vulnerable: 60 per cent of the coastline underwent erosion during the period, followed by Puducherry (56 per cent); Kerala (41 per cent); Tamil Nadu (41 per cent); Andhra Pradesh (28 per cent); Gujarat including Daman and Diu (26 per cent); Odisha (26 per cent); Karnataka (24 per cent); Maharashtra (22 per cent); and Goa (19 per cent). Odisha coast expanded by 51 per cent, the report said. This was followed by the coast of Andhra Pradesh, which expanded 48 per cent; Karnataka (26 per cent); West Bengal (25 per cent); Tamil Nadu (22 per cent); Kerala (21 per cent); Gujarat including Daman and Diu (20 per cent); Goa (14 per cent); Maharashtra (10 per cent) and Puducherry (8 per cent). The country's coastline is 6,631.53 kilometres long; 2,135.65 kilometres was subject to varying degrees of erosion and 1,760.06 km expanded during this period.

Nearly 2,700 km of the coastline is stable. The information was tabled by Parshottam Rupala, Union Minister of Fisheries, Animal, Husbandry and Dairying in response to a question in the Lok Sabha August 10, 2021. As many as 98 coastal pockets of the country have been facing sea erosion. Tamil Nadu has 26 coastal areas vulnerable to sea erosion, followed by West Bengal (16); Kerala (12); Maharashtra (8); Gujarat including Daman and Diu (8); Karnataka (7); Andhra Pradesh (6); Odisha (5); Goa (3) and Puducherry (3), the minister said. Some stretches of India's shoreline are subject to varying degrees of erosion due to natural causes or anthropogenic activities. The coastal erosion does impact coastal communities residing in the erosion prone areas, including fishermen communities.

The NCCR, an attached office of the Ministry of Earth Sciences, monitors shoreline changes along the Indian coast. It has carried out a national shoreline change assessment mapping for Indian coast using 28 years of satellite data from 1990 to 2018 along nine coastal states and two Union territories (UT) to provide information for coastal management strategy, the minister added. The National Centre for Sustainable Coastal Management under the Union Ministry of Environment, Forests and Climate Change and the Central Water Commission under the Union Ministry of Jal Shakti also undertake studies on shoreline changes / coastal erosion and their impact. Planning and execution of anti-sea erosion measures are undertaken by the maritime states and UTs as per their own priority and from their own resources. The role of the Union government is technical, advisory and catalytic in nature, the minister said.

### **West Bengal: Water level rises in Ganga after heavy rainfall**

<https://www.aninews.in/news/national/general-news/west-bengal-water-level-rises-in-ganga-after-heavy-rainfall20210811084349/>

"Rising water of Ganga River due to continuous heavy rainfall caused river banks in Murshidabad to break on Tuesday. The low-lying areas near the river are also flooded due to the rise in the water level. India Meteorological Department (IMD) on Monday predicted fairly widespread to widespread rainfall activity with isolated heavy to very heavy falls are very likely over the northeast and sub-Himalayan West Bengal and Sikkim during the next 5 days. Earlier on Tuesday, West Bengal Chief Minister Mamata Banerjee conducted an aerial survey of flood-hit areas on her way to Ghatal. Taking to Facebook, West Bengal Chief Minister slammed Central Government for not taking cognizance of the situation.

### **West Bengal: Trial by water: After Cyclone Yaas, residents of Sunderbans rue lost livelihoods, lack of clean drinking water, govt apathy**

<https://www.firstpost.com/india/trial-by-water-after-cyclone-yaas-residents-of-sunderbans-rue-lost-livelihoods-lack-of-clean-drinking-water-govt-apathy-9872321.html>

"On the afternoon of 26 May, 2021, when cyclone Yaas hit the eastern coast of India, the combined impact of the cyclone and a full moon tidal surge breached embankments built along the coast. As a result, the Sundarbans delta region of West Bengal faced massive flooding, ruining agriculture and property of the local residents. "Coronavirus, cyclone, lockdowns and another cyclone - we have nothing left that could possibly be destroyed," said Fatima, a resident of Petkulchand village in Kultali constituency of Sundarbans. "Where do we go? How do we survive? The fields where we worked are flooded. The lockdowns have made it impossible for us to go to the cities to look for jobs," she added. Similar conversations with locals from Sundarbans' Kultali constituency illustrate their loss, suffering, and anxieties not only because of climatic disasters but also due to an increasing uncertainty around livelihoods following the pandemic and deep recession.

The government estimates damage of nearly 2.21 lakh hectares of crops and 71,560 hectares of horticulture in West Bengal alone. Salinity ingress — a process by which saline water enters areas with freshwater — caused insurmountable damage to the fields, rendering them uncultivable for the coming seasons. Under normal circumstances, when income from farming shrinks, locals turn to aquaculture for sustenance.

However, cyclone Yaas also created massive losses in the aquaculture industry by arriving during harvest season. Reportedly, 12,000 tonnes of shrimps were lost during the cyclone, leading to monetary losses of approximately Rs 1,000 crore. In addition, a West Bengal's state fisheries department survey reported nearly 30 percent of all boats would not sail this year due to

flooding and consequent destruction caused by Yaas. In the aftermath of the cyclone, dead fish and saline ingress turned the water in the local ponds unsuitable for drinking and domestic use. The villagers lamented that the hand pumps have also been pumping out brackish water. Repeated seawater intrusion into the aquifers due to flooding as well as massive withdrawal of groundwater resources over time have resulted in salinisation of the region's water table. The process of desalinating groundwater is long and expensive, leaving the locals with very few options at hand.

Since Yaas disrupted the lives of the locals, women walk kilometres to gather clean drinking water for their families. Not only has the cyclone intensified their work but also made them more vulnerable to instances of sexual violence and human trafficking activities that are highly prevalent in the region. In an interview, Anurag Danda, a senior fellow at Observer's Research Foundation, noted, "Economic hardships also have an ecological angle. As land turns saline or there are breaches of embankments, people lose land and economic hardships ensue. Also, with every generation, landholdings turn smaller as they get divided among scions. All this leads to a higher incidence of poverty and subsequently child marriages and trafficking."

Having lost their primary sources of livelihood, locals have complained that the government's relief measures have been inadequate, saying that they are now entirely dependent on aid provided by civil society organisations. They expressed frustrations with the inadequacy of the government's relief measures. Their frustration draws attention towards the state's repeated botched responses to climate calamities, the lack of proper policies, and inefficient legal and institutional frameworks, which have continually added to the misery of the locals. From the Bengal Embankment Act (1882), which was last amended in 1981, to the Forest Rights Act, 2006, which continues to remain unimplemented in the Sundarban region, the government's limited interest in the region's development presents a grim reality. Such factors mandate the need for stronger embankment systems, installing appropriate methods to combat salinisation, and directing resources towards livelihood development. However, the state and central governments have consistently mismanaged planning for the coastline's present and fast-approaching future.

A recent investigation showing that the government rejected 90 percent of all public objections made against the Coastal Regulation Zone [CRZ] notification brought to light its disregard towards public concern. Threats to livelihood and economy because of water, such as rising sea levels, salinisation, flooding and so forth, have made the Sundarbans uninhabitable. Paradoxically, the all-pervasive presence of water in the delta makes it impossible for the locals to disengage from the presence and play of water. Caught in the web of lack of development, natural calamities, and governmental apathy, it remains to be seen how the locals will bounce back. To quote Amitav Ghosh from *The Hungry Tide* on the locals of Sunderbans, "In the tide country our fault, our crime, was that we were just human beings, trying to live as human beings always have, from the water and the soil. No human being could think this is a crime unless they

have forgotten that this is how humans have always lived—by fishing, by clearing land and by planting the soil.”

### **West Bengal: Residents of Sundarbans demand help from the State Government**

<https://www.newsclick.in/residents-sundarbans-demand-help-state-government>

"The residents of Sundarbans are at the receiving end of the damage from natural catastrophes again and again, because of the region's low lying geo physical features. The islands in the area get flooded during high tide and during cyclones. The river embankments break down frequently, resulting in loss of homes for a large number of locals. Cyclone Aila had ravaged the area in 2009. Since then, several cyclones, Bulbul in 2019, Amphan in 2020, which was said to be West Bengal's fiercest cyclone in decades, and Yaas in 2021, have disrupted the lives of the locals.

Now, the people of Sundarban are demanding a permanent solution to this disruption and destruction of their lives and livelihoods. Recently, three conventions, in three parts of Sundarbans—Canning, Raidighi, and Kakdwip—were held, where the local residents and activists highlighted their demands, which include construction of permanent river embankments, construction of pucca houses for all residents of Sundarbans, planting of mangrove forests in the low lying areas of Sundarbans, and construction of roads in the Sundarbans. The conventions were attended by a large number of people.

Along with this, demands were raised for regular help to the livelihood of the people of the islands. In these conventions, it was decided that these demands will be taken up on block and mohalla levels, and more conventions and meetings will be organised at the grassroot level. The conventions saw participation from Left Front leadership of the district. CPI(M) leaders Dr Sujan Chakraborty, Shamik Lahiri, Kanti Ganguly, Rahul Ghosh, RSP leaders Subhash Naskar and Tushar Ghosh attended the meetings. The apathetic attitude of the Mamata Banerjee-led state government was also spoken about in the conventions. After the cyclone Aila, which had affected the region in 2009, Centre had released a sum of 5,032 crores.

Following a report by a survey team, it was decided at that time that 778 km of river embankment will be concretised by utilising this sum. The aid had come in after the Left Front government had demanded money for river embankment repair and reconstruction. At that time the Left Front government was in power in the state. After a change of power in the state in the year 2011, the TMC government constructed only 78 km of river embankment, and the remaining 700 km of embankment was never completed. The leftover amount of more than 5,000 crore was returned to the Central government for lack of utilization of the fund. The upcoming dangers that the Sundarbans might face were also discussed in detail at the conventions. Due to greenhouse effect, the sea level is increasing by 3 centimetres per year,

hence construction of permanent river embankment is a necessity and the heights of the embankments should be more than the erstwhile years. The fight to save Sunderbans is also connected with the fight for the environment, the leadership opined in the conventions.

### **West Bengal: Cyclone-ravaged Sunderbans is now drowning in plastic**

<https://www.thehindu.com/news/national/cyclone-ravaged-sunderbans-is-now-drowning-in-plastic/article35788659.ece>

"Unregulated inflow of relief to the Sunderbans has resulted in a new crisis in the cyclone-battered region: plastic waste. Several NGOs, experts, and even officials of the District Police and the Forest Department, have pointed out that the plastic accumulating in the isolated islands of the fragile ecosystem are cause for great concern. Ecologist Diya Banerjee has been pointing out the issue from as early as June, days after cyclone Yaas inundated large parts of the Sunderbans in the last week of May 2021. "What we are seeing is tonnes of plastic in the remote areas of the Sundarban, like Gosaba, Mousuni, Bali, Patharpratima and Kultali.

People residing in these areas are not responsible in any way for the huge plastic waste; it is outsiders who are introducing and bringing a large number of plastics, completely oblivious and ignorant to its long-term impact on the region," Ms. Banerjee said. She added that a local NGO Mahajibon had recovered about 300 kg of plastic waste from the Gosaba block days after cyclone Yaas. While it is difficult to estimate the total amount of plastic waste that's arriving in about 50 inhabited islands of the Sunderbans spread across thousands of square kilometres, Sourav Mukherjee of the Kolkata Society for Cultural Heritage has estimated about 56 tonnes of plastic in Gosaba block alone.

"We have calculated the amount on the basis of how much packaged relief material were received by families, how many times, in the past few weeks," Mr. Mukherjee said. Not only conservationists, even police officers have raised concerns over the huge dumping of plastic waste. Arijit Basu, Additional Superintendent of Police, Baruipur Police District of South 24 Parganas, had put up a post on social media a few weeks ago, pointing out that relief workers brought plastic water bottles, which were being disposed everywhere.

The police officer urged locals and NGOs to organise cleanliness drives to remove plastic from the Sunderbans. Tuhin Ghosh, director of the School of Oceanographic Studies, Jadavpur University, said that plastics would have a long-term ecological impact on the Sunderbans ecosystem. "The presence of plastic in saline water will increase the toxicity of water gradually and also there will be eutrophication of water. Because of the presence of plastics in the water, there will be an increase in microplastics, which will slowly enter the food system," Professor Ghosh said. He said that the Sunderbans were connected to the sea and the increase of plastic in the region could lead to plastic water entering the ocean.

Experts also point out that the Sunderbans, which is home to a population of 5 million, is largely dependent on fisheries and aquaculture, and any change in the delicate ecosystem can spell doom not only for the ecology but also to livelihoods. Moreover, the Indian Sunderbans, a UNESCO World Heritage site, is home to about 2,626 fauna, including Royal Bengal Tigers, Gangetic Dolphins, saltwater crocodiles, and threatened species of freshwater turtles. It is also home to 428 bird species. The increase in plastic waste may pose a threat to the unique biodiversity of the region. Ms. Banerjee said there is an urgent need to stop the influx of plastic in the region by maintaining a tight vigil on the entrances to the Sundarbans Biosphere Reserve and the Sundarbans Tiger Reserve. She added that NGOs and locals should be encouraged to collect plastic waste, which should be recycled.

“We, along with NGOs like Mahajibon, have been encouraging people to exchange plastic for relief materials. The process of collecting plastic waste does not end our responsibility. It should be properly recycled so that the plastic collected here is not dumped somewhere else in the Sundarbans,” she cautioned. The threat posed by plastic is so great for the Sundarbans because the region is witnessing frequent tropical storms, which lead to devastation, followed by the necessity for relief and rehabilitation of inhabitants.

In May 2020, the region braved cyclone Amphan with the highest windspeed in the Sundarbans (100-150 kmph) in recent history. Prior to this, the region had witnessed cyclones Fani (May 2019) and Bulbul (November 2019). Questions are also being raised over the unregulated inflow of relief coming in from individuals and voluntary organisations. It has been pointed out by experts that certain areas and populations are receiving huge amounts of relief while others are left out. The administration, including some Gram Panchayats, has emphasised that all relief should be distributed through official channels.

### **West Bengal: Lens on trawler design after spate of capsizes**

<https://timesofindia.indiatimes.com/city/kolkata/lens-on-trawler-design-after-spate-of-capsizes/articleshow/85050845.cms>

"A series of trawler accidents in the Bay of Bengal not very far from the coastline involving mostly vessels from South 24 Parganas has prompted the state fisheries department to look into a possible design flaw in trawlers used in this region that has led to these mishaps. The fisheries department has approached the Central Institute of Fisheries Technology (CIFT) in Kochi to detect a possible vulnerability in trawlers used in Kakdwip, Frazergunj, Namkhana, Raidighi and other fishing harbours and landing centres in South 24 Parganas and suggest ways to prevent such incidents. While trawlers are used by fishermen in South 24 Parganas as well as East Midnapore, their designs are different.

Those used in South 24 Parganas are similar to vessels that ply the waters of Bangladesh and have a V-shaped hull and a narrow bottom. In contrast, the trawlers used in East Midnapore are similar to those used in Odisha and Andhra Pradesh with a U-shaped hull and a wider bottom. Also, these vessels have a wooden beam that runs along the entire length of the base. Bijon Maity of Kakdwip Fishermen's Association said the number of trawlers that had capsized in South 24 Parganas over the past five years was significantly more than in East Midnapore. While there had been five mishaps in East Midnapore that led to nine deaths, there have been 35 capsizes in South 24 Parganas, leading to 125 deaths.

Nearly all the incidents that have been recorded this year have happened between 4am and 6am and around 15-18km from the fishing harbour while the fishermen were returning with the catch. Last Wednesday, the issue was discussed in detail by fisheries minister Akhil Giri, Sunderban affairs minister Bankim Hazra, South 24 Parganas district magistrate P Ulganathan, fisheries additional director (marine) Jayanta Kumar Pradhan and members of fishermen associations. "In most of the incidents near the South 24 Parganas coast, vessels appear to have capsized after hitting a sand bank or silt deposit. We have therefore asked CIFT to look into the issue," said Pradhan.

The difference in shape, traditional vessel manufacturers like Anibas Das say, is more to do with the topography. While fishermen in South 24 Parganas have to negotiate shallow waters in creeks and rivers before hitting the Bay of Bengal, their counterparts in East Midnapore have good draft all the way. The fisheries minister said the government was aware of the enormity of the challenge. "If a design change is suggested, we will have to incorporate it when the permit renewal happens," Giri said. A trawler costs around Rs 80 lakh to Rs 1 crore. There are around 11,500 deep sea fishing boats in operation in South 24 Parganas.

### **West Bengal: Fish prices shoot up as local bheri supplies dry up after cyclone, flood**

<https://timesofindia.indiatimes.com/city/kolkata/fish-prices-shoot-up-as-local-bheri-supplies-dry-up-after-cyclone-flood/articleshow/84931630.cms>

"The city's retail fish markets have seen an unusual gap between demand and supply, with the flow of supplies from Bengal's numerous bheris and rivers drying up due to the cyclone in May and the flood. Fish sellers of Kolkata are now overwhelmingly dependent on supplies from Andhra Pradesh and Odisha. The demand-supply gap and costlier diesel have pushed up the prices of the regular varieties by Rs 150 to Rs 200.

"Most of the fisheries were washed out due to Yaas and the massive rainfall which followed the cyclone. Thus, the supply of fish from the fisheries and rivers has dwindled to a negligible amount, widening the demand-supply gap and pushing the prices up. Costlier diesel has kept pushing the prices further," said Maqbul Islam of Howrah wholesale fish market. This is the time

when supply of various varieties, including tangra, topse, pabda and hilsa, surges significantly, pulling prices down. But the vagaries of weather have hit fishermen hard.

“In most of the bheris, we have started from scratch, right from fish seedlings. It will take at least a year to restart supply to markets,” said Shankar Ghosh, a fishery operator in East Midnapore. “The demand-supply gap is here to stay for some time with our production suffering a jolt. But we are trying to nurture a few unaffected bheris to keep the supply line alive,” said Bengal’s fisheries minister Akhil Giri. The fishery department has helped suppliers optimise the supply from Andhra Pradesh and Odisha. “We are tired of eating the same rohu and katla, though their prices are shockingly high. But other varieties are scarce now. And even if they are available, the prices are beyond our affordability.

Mostly, we are eating egg and chicken,” said Anurag Guchhait, a banker who lives at Chetla. The supply line from Canning now plays a pivotal role in meeting the demand in the retail fish markets across the city. “We have managed to maintain the supply line despite constraints. But costlier diesel has pushed prices up,” said Chandan Maity, president, fishermen association of Gosaba and Basanti. The dearth of hilsa and other sea fish is also affecting the prices. The availability of hilsa around this time always cools off prices of other varieties. But the supply of hilsa remains extremely erratic and scanty compared to other seasons. “The bekti which should have been Rs 400 a kg is selling at Rs 650-Rs 700 a kg. Parshe, which should not exceed Rs 500, is selling at Rs 600-Rs 650,” said Amar Das, a fish trader at Lake Market.

### **West Bengal: Ethos of a sinking space: Fishers in Sundarbans surmount tiger attacks, bureaucracy to earn livelihoods**

<https://www.downtoearth.org.in/blog/environment/ethos-of-a-sinking-space-fishers-in-sundarbans-surmount-tiger-attacks-bureaucracy-to-earn-livelihoods-78175>

"Material and symbolic associations of humans with nature reveal deep social-ecological assemblages in volatile and vulnerable ecological landscapes. This mutualism has been effective and efficient as people have learned to generously combat or negotiate complexities with support of their situated ecological knowledge. A few months ago, I watched *Beasts of the Southern Wild*, a 2012 American drama directed by Benh Zeitlin and adapted from Lucy Alibar’s one-act-play *Juicy and Delicious*. It is based on a story of a father-daughter duo who live on the “other side” of a concrete levee over a large river.

The levee was constructed by the State to control the flow and protect northern lands from rising river waters. Cut off from the “mainland”, they call this low-lying bayou “Bathtub”, which accommodates a small community. Here, the dreadfully poor, yet self-reliant dwellers, who are majorly dependent on fishing, thrive in a seemingly apocalyptic industrial world. A six-years old kid named Hushpuppy lives with her father in a desolate wilderness of poverty in the Bathtub.

With a valiant and compassionate heart, Hushpuppy is on an intimate term with the natural world, where she feeds pigs, fish and crab that she has learned to grab bare-handedly. “Daddy says, on the other side of the levee, on the dry side, they are afraid of the water like a bunch of babies,”

Hushpuppy says about her father Wink, who is gradually ailing. As a fearsome hurricane is making its way towards Bathtub, Wink teaches his little child the art of survival without deserting their land. Eventually, some of their neighbours leave the place and head towards the city. “Me and my daddy, we stay right here,” Hushpuppy asserts. Post-hurricane, Bathtub was submerged under water stagnated within the walls of the levee. A handful of inhabitants including Wink and Hushpuppy, who have taken shelter in a floating house, aspire to rebuild the community. This made Wink hatch an immediate plan with a small group of friends. They drained the water by blowing a hole in the dam and helped restore the land. Meanwhile, administrative officials arrived with a compulsory evacuation order and dislodged the residents of Bathtub to an emergency shelter.

In due course, they managed to return to their homes at Bathtub. Upon returning, Hushpuppy bids goodbye to her father and stands ablaze for confronting other catastrophes of epic proportions. The contemplative eyes of Hushpuppy unravel a childhood perception of a resilient world until a vicious storm surge conveys the reality. This vulnerable “sealed world” is her endearing space which has tutored her to live unboundedly with natural entities such as the river, animals and fish. The story also draws in the ramifications of global warming with representations of collapsing icebergs. “The whole universe depends on everything fitting together just right,” says Hushpuppy. “If one piece bursts, even the smallest piece, the entire universe will get busted.” During my last visit to the Indian Sundarbans on January 29, 2021, I met Arati at Tipligheri on the island of Satjelia. I listened to her story of subsistence within the vulnerable delta, “the Bathtub”.

Accompanied by her husband, Arati used to fish in the forested river creeks of Sundabrns. People like Arati make a living out of forest fishing, often risking their lives to tigers. Their knowledge draws on cultural practices, transmitted orally through generations. The living space of the community in the Sundarbans is shaped by layers of sediments as old as their ancestors, who had once established deep links to the forest. “We do not go to the forest anymore because of the tigers,” said Sardar, who currently labours on other’s farmland during the monsoon for Rs 300 a day. In the Sundarbans, fishing is restricted within buffer zones, locally known as “khola bada”. With continuous risks of being attacked by the Bengal tiger as well as forest officials, fishers from the forest fringe villages venture into the ‘closed’ creeks (bondho bada) that hosts more fish stock.

Sitting next to Arati, Sulata mentioned that they had to skip fish catch during two consecutive high tides due to frequent tiger attacks. Nonetheless, they regularly sail off with a simple human-

pulled country boat and adequate foodstuffs, including rice (20 kilogram), potato (1 kg) and pulses (3 kg) for three persons to stay seven days in the forest. They also carry crab foods (Rs 400 per kg) and ample salt for preparing fish foods with initially caught fishes. Not all the fishers are privileged to have their own boats and rent a boat for Rs 6,000. They are allowed to go to the forest only if they have a BLC (Boat Licensing Certificate) permit, which is either issued by the forest department or rented from others. “Forest officials are more dangerous than tigers,” Sulata said.

Ambiguous management of BLCs and fishers’ identity permits have marginalised small-scale fishing. A total of 923 BLCs were issued after the establishment of Sundarban Tiger Reserve in 1973. Over 35 years later, only 706 BLCs are active for around 60,000 fishermen. Financially better-off people, who do not catch fish by themselves, often rent their BLCs to local “khotidars” or fish depot owners. The community was ebbed away from the “community forest resource” long before UNESCO announced a formal operation comprising “coordination and integration of diverse activities of conservation”.

The prerogative custody of the mangrove forests thus was removed from the commons to the powerful transnational conservationists and bureaucrats. Alongside these constraints, Sardar also mentioned the dwindling fish stocks and unknown fish diseases. “We do not get as many fish as we used to before,” she said. A large number of indigenous fish species had faced decline due to trawler-based commercial overfishing, siltation and climate change impacts. “Nobody cares for us. Politicians come before elections and makes false promises.”

In March, 2021, Kolkata high court passed a verdict further restricting community access. The verdict was premised on grounds of biodiversity conservation and raised questions about the subsistence of the fishers. As the looming global markets are captured by large-scale shrimp farms and commercial fisheries, small-scale fishers of Sundarbans are facing legal barriers from the forest bureaucracy to debar their established practices. Political disputes and dialogues are craftily obscuring the wider privatisation and marketisation propaganda. Small-scale fishers in the Sundarbans are seeking meaningful collaborative interventions from stakeholders and researchers across disciplines.

### **West Bengal: Distress alert device a must on boats: Bengal government**

<https://www.telegraphindia.com/west-bengal/distress-alert-device-a-must-on-boats-bengal-government/cid/1824347>

"The Bengal government has made it mandatory for boats and trawlers out for deep-sea fishing to install distress alert transmitters (DATs) so that the vessel operators can alert Chennai’s Maritime Rescue Coordination Centre (MRCC) in case of an emergency. The state government had issued a similar order in 2011 and provided the device to around 2,400 fishing boats. But the

increasing trend of fishing boat capsizing in the Bay of Bengal prompted the state government to make mandatory the installation of the device in boats at the earliest.

There are around 10,000 boats registered in South 24-Parganas district. Sources in the Indian Coast Guard said that the DAT was a satellite-based alert transmitter to be used in distress situations like capsizing, fire, medical emergency and drowning. In case of emergency, the fishing boat transmits a short message about its location and type of emergency to the MRCC, which in turn alerts the Coast Guard personnel. The decision for mandatory installation of all registered boats was adopted during a meeting between the fisheries department and members of the Fishermen Welfare Association at the South 24-Parganas district magistrate's office in Alipore on Wednesday.

State fisheries minister Akhil Giri and officials of the Coast Guard and the disaster management department attended the meeting, that was held on a day a boat capsized on the Bay of Bengal close to the Bangladesh border. Sources in the fisheries department said a boat named 'Tarama' from Kakdwip sank in the sea owing to a breach on its floor. All the 15 fishermen on the boat were rescued by boats sailing nearby. Earlier on July 14, in a similar boat capsizing around 25km away from the Frazerganj coastal line, 14 fishermen who were trapped inside the bottom cabin died. Speaking to The Telegraph, state fisheries minister Akhil Giri said: "We do not want such accidents any more.

The decision for mandatory installation of the DAT system is a step to prevent such accidents." At the meeting, it was decided that the state government would soon select a modern DAT device and advise boat owners to install it in their vessels at their own cost. "We will select the appropriate device and ask boat owners to install it. We are hopeful that a boat owner who spends over Rs 50 lakh on a fishing boat can afford to install a device that costs around Rs 15,000 for safety," minister Giri told The Telegraph. He added that he would soon hold a meeting with fisheries department official to frame a timeline to implement it. Bijan Maity, joint secretary of West Bengal United Fishermen's Association said: "It is a good initiative. This decision was earlier taken but a casual approach in its implementation left the situation unchanged. We have appealed to the minister to ensure that the decision does not remain only on paper."

### **West Bengal: People in Sunderbans turning to forests for livelihood**

<https://www.telegraphindia.com/west-bengal/calcutta/people-in-sunderbans-turning-to-forests-for-livelihood-because-covid-has-robbed-them-of-their-income/cid/1823535>

"More and more people in the Sunderbans are turning to the forests for livelihood because the Covid pandemic has robbed them of their income. The people are illegally entering forest creeks to catch crabs and fish, risking their lives. This has led to a spurt in human-wildlife conflict.

There have been four deaths because of tiger attacks in the past two months, most of them in the Jhila forest, said an official of the Sunderbans Tiger Reserve.

Over 25 people have died in tiger attacks since March 2020, according to the forest department. The prolonged bar on tourists in the Sunderbans because of the Covid curbs has destroyed the livelihood of many residents. The owners and employees of hotels, tour guides, boatmen and the others have lost their income. Tens of thousands of migrant labourers had returned to the mangrove delta during the lockdown last year. Many of them took to an alternate livelihood. Some started farming and fishing in local ponds on a small scale. But the Covid curbs following a fresh spike in cases this year has again robbed many people of their income. Saline water flooded acres of land during the landfall of Cyclone Yaas in May this year, turning many farmlands infertile.

“The mangrove delta is as much about its people as it is about its forests. The forests thrive because of the people living on the fringes. But the pandemic has posed unprecedented challenges to the local population,” said Tapas Das, the field director of the Sunderbans Tiger Reserve. Tapas Manna, a boatman, is living on free ration and relief materials from NGOs. Manna was in charge of a boat owned by the owner of a hotel named Apanjan, near Pakhiralay, a village in the Gosaba block of the Sunderbans, around 92km from Calcutta. He used to earn Rs 7,000-8,000, including tips from tourists.

“A party that spotted a tiger would give more than a party spotting a crocodile,” said Manna, who lives with his mother, wife, a son and a daughter. Manna owns a small plot of land but it has been rendered infertile by the incursion of saline water during Yaas. “For at least another year, it is impossible to till the land,” he said. Around two lakh tourists would visit the Sunderbans every year before the pandemic.

A section of the earnings from them would go to the joint forest management committees for community development. There are over 100 hotels and homestays on the fringes of the Sunderbans Tiger Reserve itself, according to the members of the Sundarban Hotel Owners’ Association. The number would be double if the hotels in the South 24 Parganas forest division are included. The hotels, according to its size, employ local youths as cooks and service staff and security guards. The number of licensed motor boats and launches would be close to 500, said an official of the local administration. Each launch would at least have a couple of people other than the helmsman. “The lives of close to 50,000 people depend on tourism.

The owners of hotels are defaulting on payment of the loan instalments. Boatmen are working as daily labourers when they can,” said Prabir Sinha Ray, the general secretary of the hotel owners’ association. The mangrove delta was shut for tourists from March 2020, following the imposition of the country-wide lockdown as a precaution against Covid. After reopening for a few days in June last year, a suspension in July followed a spurt in cases. The National Park was reopened in

September before shutting down again with the spike in cases this year.

### **West Bengal: Season's first good hilsa catch fails to bring down prices in Kolkata**

<https://timesofindia.indiatimes.com/city/kolkata/seasons-first-good-hilsa-catch-fails-to-bring-down-prices-in-city/articleshow/84623499.cms>

"The first good catch of hilsa after a gap of nearly two years brought cheer to fishermen, but not to customers. The absence of mid-sized hilsa weighing 800g-900g pushed the price of those weighing 1kg or more to Rs 1,800 a kg, forcing the fish practically beyond reach of average households. Amrita Roychowdhury had been delighted when she spotted the fish at Lake Market, but the price left her flabbergasted. "We have been waiting for hilsa for over a month now. So when I saw the fish on Wednesday, I could not help but get drawn to it. My grandson has been asking me when we would have hilsa this season. Unfortunately, I had to defer the purchase because the price was atrocious," she said.

The sky-high price, however, did not deter Abhaya Das Roy from buying a 1.2kg fish for Rs 1,900. "I just couldn't miss the opportunity. The wait has been long enough. By the shape and size of the fish, I can tell it will be great to taste," he said. Vendors hoped more pocket-friendly, mid-sized fish will arrive from Diamond Harbour soon. "Connoisseurs will not mind paying for the fish on offer. Others will have to wait for the catch to increase so the prices cool off," said Vijay Singh, a trader at the Sealdah fish auction market. Amar Das, a fish vendor at Lake Market, said the hilsa that arrived were either 400g-500g or over 1.1kg.

While the former sold for Rs 900-Rs 1,100 per kg, the latter sold in excess of Rs 1,800 per kg. Fishermen caught the hilsa near the border with Bangladesh, said Kakdwip Fishermen's Association secretary Bijon Maity. "Though the catch was of 1.5 tonnes against 3 tonnes-4 tonnes we would net in a single trip five years ago, we are hopeful the tide will turn in our favour," he said. Hilsa shoals appear to have left the Indian section of Bay of Bengal due to rampant fishing of juvenile hilsa and moved towards Bangladesh where the ban on juvenile catch is stringently implemented. Debasish De, principal scientist and officer-in-charge, Central Institute of Brackishwater Aquaculture, Kakdwip, said reckless fishing is pushing hilsa into extinction in Indian waters of Bay of Bengal. "It won't be long before hilsa will only be viewed in photographs.

The taste of a hilsa matures when it swims back to sea after laying eggs. During its stay in sweet water for three months, it becomes rounded. But we often catch them with eggs. Hence, hilsa population is declining," he said.

### **West Bengal: Rise in fuel prices also taking a toll on hilsa**

<https://www.daijiworld.com/news/newsDisplay?newsID=854411>

"The spiralling prices of petrol and diesel in the last one year is not only taking the famous hilsa fish out of the reach of the middle-class Bengalis, but it is also having a far-reaching effect on the population of this 'silver queen of the river'. The steep hike in the fuel cost is inhibiting fishermen from going into the deep sea and they are forced to catch the smaller juvenile hilsa that stay in the shallow water near the coastline, endangering the species altogether.

According to the more experienced fishermen of the Sagar Kakdwip area from where most of the hilsa comes to Kolkata and the suburban markets, a year ago the fishermen used to go at least 475 km to 500 km into the sea but now due to the high fuel prices they don't go more than 225 km to 250 km into the sea. This is keeping the bigger fish out of reach. Hilsa, a sea fish, moves into rivers to lay eggs before returning to the sea. Shoals of young hilsa, too, make their way back to the sea. It is during this return journey that the younger ones are getting caught in fine nets laid close to the shoreline.

""The bigger fish that move deep into the sea stay out of reach and the fishermen have to depend on the younger ones that are below 500 gm,"" said Rabin Das, who owns a number of trawlers. Catching hilsa under 500 gm was banned in India, Bangladesh and Myanmar nearly three decades ago to protect the fish population that was depleting fast due to indiscriminate fishing. While Bangladesh has been extremely successful in enforcing the ban and reviving the hilsa population in its waters, India and Myanmar have also had some success. But with diesel prices increasing by over 30 per cent over the past 12 months, the fishermen are forced to stay along the coastline.

The situation is such that last week, the fisheries department raided and seized one tonne of juvenile hilsa from a trawler that had returned to Kakdwip. The fishermen admitted they had fished in shallow waters close to the shore.

A small estimate will help to understand the situation. A year ago, a round trip for deep-sea fishing by a trawler cost Rs 1.5 lakh, including the salaries and food for 15-16 fishermen on board. ""We would use 1,200 litres of fuel for a 15-day trip and the expense came to around Rs 84,000. Now just 800 litres of fuel costs us Rs 75,000 and since other expenses have also increased, we are fishing along the coastline,"" said Rabin Das.

""The fishermen are forced to indulge in illegal fishing, else they cannot match the cost. We are trying our best to prevent them from catching juvenile hilsa. We've distributed leaflets and carried out awareness drives to prevent fishing during the hilsa breeding period. But they are using fine bottom nets instead of grill nets that make it difficult for the juvenile fish to wriggle out,"" a senior official of the fisheries department said.

""We have tried to educate fellow fishermen to desist from fishing in troubled waters but persuading them has become more difficult following the massive rise in fuel prices. Whatever might be the situation, this illegal practice needs to be curbed irrespective of the pulls and pressures the fishing industry may face,"" Secretary of Kakdwip Fishermen's Association Bijon Maity said. ""The fishermen are destroying their own future. We have to recognise this as an ecological crime and act tough like Bangladesh does. Otherwise, hilsa will soon become extinct,"" he added.

### **West Bengal: Once top in output, State Fishing Coops face twin onslaught from weather, 'Influential Individuals'**

<https://www.newslick.in/West-Bengal-Once-Top-Output-State-Fishing-Coops-Face-Twin-Onslaught-Weather-Influential-Individuals>

"In the wee hours of July 14, a fishing trawler called MV Haimabati was returning to Frasergunj port after catching fish in the Bay of Bengal area. However, rough weather near the Jambudweep island led to the capsizing of the trawler. Only two out of the 12 fishermen on board could survive, rescued by people from other trawlers. Nine fishermen who were sleeping in the lower deck died, while one is still missing. Sukumar Dan, a fisherman, told NewsClick that such trips to the bay area are dangerous but lucrative considering the restrictions on inland fishing due to the lockdown. After a fishing trip, the owner of a trawler typically gets 40% of the money earned, while 60% is divided among the staff of 10-12 people on the trawler. Aftermath of Cyclone Yaas The livelihood of the fishing community of the region has suffered in the aftermath of cyclone Yaas, which hit the coast in May 2021.

According to Debasish Barman, general secretary of West Bengal Fishermen's Association, due to the cyclone and the consequent high tide in four districts (East Medinipur, South 24 Parganas, North 24 Parganas, and Howrah), a total of 31 blocks have been affected and pisciculture practised across more than lakhs of bighas of water bodies has been hampered. Barman said fish worth an estimated Rs 300- 400 crore was swept away by the cyclone. The intrusion of saline water into water bodies spanning over 50,000 bighas has worsened the plight of the fishing community.

About 3,500 small fishing boats have been destroyed and more than 400 big fishing nets were swept away, along with five trawlers in the havoc wreaked by the cyclone. Over the past one year, at least six incidents of trawlers capsizing have been reported in which 32 fishermen have lost their lives. Twelve fishermen lost their lives in other incidents, including getting mauled to death by tigers in the area. The Fishing Sector In the past 10 years, fishermen from the lower castes in West Bengal have been ousted from the fishing bodies, say several experts. Under the 34-year -rule of the Left Front, the state was known to among the topmost in inland fishing.

However, with the ousting of traditional fishing communities in Bengal, states like Maharashtra seem to be taking a lead in fish production. In West Bengal, over 27 lakh 67 thousand fishermen are now staring at livelihood threat as cooperative laws are being loosened, in violation of the West Bengal Fisheries Act, 1984, say experts. Fishermen allege that this is an attempt to open up the sector to the “inexperienced” persons affiliated to the ruling Trinamool Congress (TMC). There seems to be an attempt to open the sector to the corporates as well, they feel. Until 2010, there were 1,292 fishermen’s cooperatives in the state comprising traditional fisherman communities and 20 Central cooperatives of fishermen, which are now in dire straits. As far as the state-level cooperatives are concerned, there are allegations that contracts are being awarded to individuals posing as cooperatives instead of traditional cooperative societies.

According to Mangal Pramanik, an inland fisherman, a “fight” is going on in the state in which traditional fishing communities like Majhi, Malo, Bauri, and Parmanik are losing ground to influential outsiders, who are “all ruling party hooligans”. Experts blame neoliberal policies being followed by the TMC government as well as the Bharatiya Janata Party-led Central government for facilitating the ouster of the traditional fishing communities.

As a result, fisherfolk are being forced to work as agrarian or construction workers, and some have been even forced to move to other states, such as Kerala, in search of employment. Ram Das, president of the Fishermen’s Federation and All India Fishers and Fisheries Workers' Federation (AIFFWF), South 24 Parganas, alleged: “Trawlers are being looted regularly in connivance with the pirates and goons of the ruling party of the state. Most of these hooligans have created free zones for their operations in both North and South 24 Parganas districts and in the vast belt of Sundarbans.”

Das said the recently imposed regulations had also harmed the fishing community and that the submerging of agricultural land into coastal pisciculture , with former fisherman and owners of small boats now engaged as labourers of the pisciculture farms, had complicated matters. He claims most of these farms has been started by the TMC strongmen, especially in the coastal areas of Medinipore district and in South 24 Parganas Minakhan area.

The AIFFWF has coined the slogan ‘water bodies for fishnet owners’ to support the fishing community in their struggle. Speaking with NewsClick, AIFFWF state President Tushar Ghosh alleged that BJP and TMC governments at the Centre and state, respectively, were promoting “anti-fishermen” policies and are responsible for redistributing water bodies among their own party strongmen as well as disbanding the cooperatives. Many fishermen and fishery workers pointed out that production of fish in the state had been rapidly falling due to the policies of the government. They said whenever fishermen have tried to raise their voices against the unfair redistribution of the water bodies, the administration and the police have acted as one against fishermen and “false complaints” have been registered against them.

## **West Bengal: How spiralling fuel prices are stunting growth of hilsa**

<https://timesofindia.indiatimes.com/city/kolkata/spiralling-fuel-cost-spells-doom-for-hilsa-population/articleshow/84423860.cms>

"The steep hike in fuel prices is taking a toll on hilsa health in the Indian waters of the Bay of Bengal as fishermen cast their nets in shallow waters along the coastline instead of venturing deep into the sea for the catch. They are also using finer nets that trap the juvenile hilsa instead of the larger nets that allow the small ones to escape. Hilsa, a sea fish, moves into rivers to lay eggs before returning to the sea. Shoals of young hilsa, too, make their way back to the sea. It is during this return journey that the younger ones are getting caught in fine nets laid close to the shore line.

Catching hilsa under 500gm was banned in India, Bangladesh and Myanmar nearly three decades ago to protect the fish population that was depleting fast due to indiscriminate fishing. While Bangladesh has been extremely successful in enforcing the ban and reviving the hilsa population in its waters, India and Myanmar have also had some success. But with diesel prices increasing by over 30% in the past 12 months, enforcement of the ban is proving to be a challenge. Last week, a raid by the fisheries department netted one tonne of juvenile hilsa from a trawler that had returned to Kakdwip. The fishermen admitted they had fished in shallow waters close to the shore. A year ago, a round trip for deep-sea fishing by a trawler used to cost Rs 1.5 lakh, including the salaries and food of the 15-16 fishermen on board.

"We would spend 1,200 litres of fuel for a 15-day trip and the expense came to around Rs 84,000. Now just 800 litres of fuel costs us Rs 75,000 and since other expenses have also increased, we are fishing along the coastline," said Rabin Das, who owns multiple trawlers. What this essentially means is that while trawlers used to venture around 450km into the sea earlier. Now, they travel just around 270km.

South 24 Parganas fisheries assistant director (marine) Jayanta Pradhan said nearly all fishermen were now indulging in illegal fishing. "We are trying our best to prevent them from catching juvenile hilsa. We've distributed leaflets and carried out awareness drives to prevent fishing during the hilsa breeding period. But they are using fine bottom nets instead of grill nets that make it difficult for the juvenile fish to wriggle out," he said. Such rampant fishing of juveniles has already spelt doom for the hilsa population and catch of larger fish has reduced dramatically, said Debasish De, principal scientist and officer-in-charge of Kakdwip Research Centre of Central Institute of Brackish Water Aquaculture.

"There is already a serious drought of hilsa in the Bengal estuary that was once blessed with huge quantities of the fish. Arrival of full grown hilsa from the deep sea for breeding has reduced significantly because of indiscriminate fishing of juvenile hilsa. They are causing tremendous harm to the hilsa ecosystem," said De. While earlier it was greed that led to some

fishermen to flout the norms, hilsa experts admit that rise in diesel prices has forced many more to indulge in illegal fishing. Bijon Maity, secretary, Kakdwip Fishermen's Association, says they had tried to educate fellow fishermen to desist from fishing in troubled waters but persuading them has become more difficult following the massive rise in fuel prices.

He, however, admitted that the illegal practice needed to be curbed irrespective of the pulls and pressures that may face the fishing industry. "The fishermen are destroying their own future. We have to recognise this as an ecological crime and act tough like Bangladesh does. Otherwise, hilsa will soon become extinct," he said.

### **West Bengal: Trawler capsized in deep sea, 10 fishermen missing**

<http://www.uniindia.com/trawler-capsized-in-deep-sea-10-fishermen-missing/east/news/2448482.html>

"The trawler suddenly capsized in the deep sea at around 5 am on Wednesday. Although two people have been rescued so far in the incident, the remaining 10 are still missing. Arrangements have been made to drag the trawler to the coast. According to local sources, a trawler from Namkhana was struck by F.B. Haimbati went fishing in the deep sea. A total of 12 fishermen were in the trawler. The trawler was returning to shore on Wednesday after fishing. While returning to the coast, the trawler suddenly overturned near an ascent called Rakteshwari. Bijan Maiti, secretary of the Kakdwip Fishermen's Welfare Association, said the trawler overturned on a cliff called Rakteshwari about four hours from Frazerganj while returning to the coast. At that time, the boatman on the trawler and his side boatman floated in the river. The fishermen of the trawlers rescued the two fishermen. But the other 10 fishermen were sleeping in the cabin of the trawler at that time. The initial guess of the fishermen is that those 10 fishermen remained in the cabin of the trawler. The trawler is being towed to shore. The incident has already caused a stir in the Kakdwip subdivision.

### **West Bengal: Rising diesel price and dip in hilsa catch worry fishermen**

<https://www.telegraphindia.com/west-bengal/rising-diesel-price-and-dip-in-hilsa-catch-worry-fishermen/cid/1822113>

"Rising diesel price and a dip in the hilsa catch for the second year on the trot have left fishermen and the government worried because livelihoods of around 30,000 people are at stake. Because of the low yield, many fishermen are not taking their trawlers to the sea after one or two trips as diesel price has crossed Rs 90 a litre. "Affording fuel cost, the main investment to catch hilsa, is tough. Many trawler owners like me have stopped sailing our boats temporarily as the expense-and-profit ratio is not viable.

The cost towards fuel increased by 22 per cent compared to last year and production of hilsa reduced by 35 per cent. It is a survival challenge,” said Satinath Patra, secretary of the Sunderban Samudrik Matsyojibi Shramik Union, an association of sea-fishermen. Sources said a trawler carries around 2,400 litres of diesel in barrels to trawl the sea for five days. Diesel on Thursday sold for Rs 92.50 a litre in Calcutta. “One of my trawlers came back with hilsa worth Rs 1.5 lakh only. I could not recover my fuel cost. This isn’t only my story but of everyone in this trade,” said Patra, adding they would write to central and state governments seeking subsidised diesel for fishing.

“The situation is the worst this year with low hilsa catch and high diesel price,” said Shyamsundar Das, secretary of the Digha Fishermen’s Association. Jayanta Pradhan, assistant director of fisheries in South 24-Parganas, said hilsa production is down by more than half compared to last year. Since the hilsa fishing season is yet to be over, the fishermen are keeping their fingers crossed, expecting to recover the loss in their next trips to the sea. But, the rising riverbed level due to siltation, trapping of juvenile fish and excessive harvesting by some fishermen are possible reasons why the hilsa is elusive.

According to experts, the Hooghly river meets the Bay of Bengal close to the Sunderbans in South 24-Parganas, and the confluence is the favourite place for the hilsa, which move from the ocean to the river stream around this season. Till Tuesday around 2,000 boats that went to catch hilsa on June 15, after the expiry of the government-mandated gap from April 15 to June 14 to promote hilsa breeding, from Namkhana, Kakdwip, Raidighi in South 24-Parganas and from Digha, Shankarpur and Contai in East Midnapore have returned with their catch. But, the quantity of the fish was so meagre that the fishermen were reluctant to disclose the figure. According to the members of the fishermen’ welfare outfit in Namkhana, till Tuesday the total hilsa catch has not reached even 100 tonnes, less than a quarter of the projected catch during June-July every year. Hope the situation improves,” said Patra.

### **West Bengal: Fishermen request state fisheries department to conduct dredging at Sankarpur fishing port soon**

<https://www.telegraphindia.com/west-bengal/fishermen-request-state-fisheries-department-to-conduct-dredging-at-sankarpur-fishing-port-soon/cid/1821798>

"The Sankarpur Fishermen’s and Fish Traders’ Association has formally requested the state fisheries department to conduct dredging at East Midnapore’s Sankarpur fishing port on an emergency basis in the aftermath of Cyclone Yaas as they fear it will affect their business if the job is not undertaken immediately. The port, which facilitates employment for roughly 10,000 fishermen, mechanics, and where their trawlers are moored, has seen a disproportionate deposition of silt in the feeder canal following the cyclone, a development that is causing many inbound trawlers to divert to neighbouring Odisha or East Midnapore’s Contai.

“This is a year-old problem. But it has been aggravated by Cyclone Yaas. Now, we are demanding immediate action or else, the entire port may go underwater,” said former MLA and incumbent secretary of the fisheries association, Swadesh Nayak. “Except during high tide, we are rendered non-operational. And if vessels are caught on top of the silt during a receding tide, lives could be lost,” he added. The Champa canal, leading into the Sankarpur port, is flanked on one side by the Digha-Mohona auction centre and the Sankarpur fishing harbour on the other. Sources said it had last been dredged in 2013. Over the last month, fishermen in the area estimate that trawler activity has gone down to 60 per cent of the regular 500 that would be found docked. “Earlier, 500 trawlers used to dock at the harbour and now around 200 come here because of navigation troubles.

If the situation is not addressed, the economy of the area and that of the fishing community will be hit,” said a fish trader who operates trawlers from the harbour. “Sankarpur has the best connectivity to the sea, especially for hilsa fishing. But now, apprehending potential accidents, we are shifting half our fleet to Odisha,” said trawler owner Sadananda Jena. “In addition to dredging, authorities ought to provide some sort of sanitation and accommodation-based arrangements as well.

Most advanced ports have these facilities to accommodate fishermen who are out for weeks on end,” added fisherman Pratap Das. Fisheries minister and Ramnagar MLA Akhil Giri said he was aware of the problem and that authorities were waiting for monsoon tides to subside. “We will attempt to start the dredging in November,” he added. The fishermen’s association has also asked the state government to repair the harbour as it had suffered damage during Cyclone Yaas, said trawler owner Tapan Das. He added that the harbour generated a business of around Rs 200 crore annually.

The state government also earns Rs 10,000 in revenue from each trawler every year. Keeping in view the amount of business generated and the number of people who depend on the harbour, Das said: “The jetty has been damaged and the high tide during Cyclone Yaas has affected a few ice factories and a petrol pump had to be shut down. Getting ice has become a problem ever since Yaas struck the harbour. The government should take up repair at Sankarpur harbour immediately as they are doing elsewhere. This is the fishing season and delay in taking up repair is hitting us badly.”

### **West Bengal: Covid, two cyclones pushed trafficking survivors into debt traps, says study**

<https://timesofindia.indiatimes.com/city/kolkata/covid-2-cyclones-pushed-trafficking-survivors-into-debt-traps-says-study/articleshow/84126645.cms>

"Fifteen-year-old Laxmi Naskar (name changed), from Joynagar in South 24 Parganas, was trafficked in September 2019, just before Durga puja. She was rescued five months later

from a brothel in Maharashtra. Her family — all of them fishermen — was pushed into dire straits by the Covid-19 pandemic. Then two cyclones, Amphan and Yaas, struck deadly blows. The dams in her area broke and saline water overflowed into ponds, killing all the fish. To make ends meet, Laxmi had to borrow Rs 32,000, after already having borrowed Rs 20,000 last year. A year-long study by Taftesh — a coalition of anti-trafficking stakeholders including lawyers, researchers, psychologists, social workers and survivors — has found 47% of trafficking victims from Bengal had to resort to borrowing for survival since Covid-19 struck. The cyclones made matters worse. These women have borrowed amounts between Rs 10,000-Rs 1.3 lakh, 10% of them engaging in non-banking and high-risk borrowing.

The NGOs have now sought financial packages from the state government to help them. “It appears that people belonging to this vulnerable section have far more been hit economically during the second wave, believed to have started in India around March, than in the first wave when they have at least accessed free ration and cash support provided by the state and central governments. However, this time around, the government’s focus was mostly to strengthen the healthcare system, this section was left out “the report stated. Rukshana Khatun (name changed), 36, from Basanti area was trafficked in May 2018 to Maharashtra before being rescued six months later.

Covid snatched her regular income after the small shop she owned had to shut down. “Her house was broken after Amphan and Yaas destroyed the roof. Even her shop was damaged. She had taken a loan of Rs 60,000 last year and this year, she had to borrow Rs 45,000,” said Shaswati Mallick, one of the main surveyors of the project. “There are areas of serious concern. The loan rate is very high,” said Subhasree Raptan of Goranbose Gram Bikash Kendra, one of the partners of Taftesh.

“Out of 53 survivors we interviewed, 25 said they took a loan. The amount borrowed in South 24 Parganas varies between Rs 5,000 and Rs 1,30,000 and annual interest rate goes up to even above 200%. Out of these 25 survivors, 24 said ‘no work was going on’. Of these 24 women, 23 do not have any land. Of the 23, 18 have household income less than Rs 3,000. In fact, 16 of them have zero household income. Among these 16 survivors with no work, no land and no household income, the amount they have to repay per month goes up to Rs 10,530.” It was also found that a significant proportion of the survivors took new loans to repay existing ones. These debt traps again increased their risk of becoming indentured labourers and victims of trafficking, the study concluded.

**West Bengal: Never seen anything like this”: How Cyclone Yaas impacted farmers’ livelihoods in Bengal**

<https://caravanmagazine.in/environment/how-cyclone-yaas-impacted-farmers-livelihoods>

"There were warnings all around. Sirens wailing, microphones blaring. Like other residents of Sundarban's Bali Island, Paritosh Biswas too had no other option but to leave his house. He waited anxiously at a nearby cliff with his family. "We have never seen anything like this before," he said. "The water engulfed the village in an hour." Beginning on 26 May, Cyclone Yaas, classified as a "very severe cyclonic storm" wreaked havoc on the coastal areas of Odisha and West Bengal, for three days. Tidal waves lashed coastal villages and torrential rains battered neighbouring areas. As the seawater kept gushing into homes, farmlands and fishponds by surpassing or breaching embankments that came its way, thousands of people lost their belongings and livelihoods.

The cyclone hit 60 lakh people across 11,000 villages in Odisha. In West Bengal, three lakh houses were damaged and one crore people affected. The Sundarbans region, a tidal delta in Bengal, was severely impacted. More than one month on, farmers are struggling to cope with the loss to their livelihoods. By the time the high tide had receded at Biswas's village and he rushed to check on his house and farms, everything was gone. His house was submerged in knee-deep water. His family's belongings, food, and the twelve sacks of harvested paddy he had stored for later use, his school-going son's books—nothing remained intact. Biswas is a marginal farmer and a resident of Bali in Gosaba block in the South 24 Parganas district of West Bengal. His two-and-a-half bigha farmland that was aplenty with seasonal vegetables—cucumber, ladyfinger, and pointed gourd—became inundated. All the freshwater fish in his pond died due to salt-water intrusion.

"The stench from the rotting fish was growing unbearable. I collected all the dead fish and dumped them into the sea," he said. For the fish to breed again, Biswas will have to pump out the entire pond and refill it with freshwater or let rainwater fill it up. Costlier methods include bleaching and aeration. It would also take at least three years for the soil to be fit for growing freshwater paddy or other seasonal vegetables again. The cyclone cost him a loss of around fifty thousand rupees. Like Biswas, the thousands of residents in the Sundarbans who depend on the traditional occupations of the region—farming and fish breeding—see an uncertain future. Hit by frequent cyclones, it has become a tiresome game of loss and recovery for them. This time, many villages across West Bengal's coastline protested against the poor-quality levees that collapse or crack open every time a water hazard hits the region.

On the occasion of Environment Day on 5 June, people from several villages in Gosaba block, Ghoramara Island and Mousuni Island, organised marches and sit-down protests to demand concrete embankments instead of government aid. Cyclone Yaas breached 136 flood barriers in West Bengal. According to a report in *The Telegraph*, at administrative meetings, Chief Minister Mamata Banerjee "expressed dismay" over the ineffective reconstruction of embankments. She asked officials to come up with a permanent solution to recurring inundation and utilise reparation funds efficiently.

At a press meet following Yaas, Banerjee said that this cyclone has damaged around 2.21 lakh hectares of crop and 71,560 hectares of horticulture. She submitted a report to the Prime Minister Narendra Modi enlisting a total loss of Rs 20,000 crore. At Diamond Harbour, another badly affected area in South 24 Parganas, betel vine farmers have suffered huge losses. Niranjan Maity, a 45-year-old resident of Purba Gobindapur village in Diamond Harbour-I block, had lost a whole betel garden to Amphan. Following losses of around Rs 2 lakh, he had to pump in another Rs 1.5 lakh to rebuild his two remaining gardens. It had only been a year before Cyclone Yaas battered the place and gave him a fresh blow of Rs 1 lakh. A heavy storm during Yaas withered off the betel leaves and snapped the branches. “It will again take a lot of toil and money to mend the betel sheds,” he said.

“I am already struggling to make the bare minimum as the demand has drastically reduced since the 2020 lockdown. While I would have earned Rs 10,000 in a normal market, I could make only Rs 3,000 this April.” Over 1.5 million farmers in West Bengal are dependent on betel farming. To aid betel vine farmers hit by Yaas, the state government is paying Rs 5,000 to each of them under its relief drive Duare Tran. This one-time scheme allowed those affected by Yaas to visit booth camps set up at gram panchayats and submit applications within 3 June and 18 June. Other farmers will be given aid ranging between Rs 1,000 and Rs 2,500 depending on the amount of crop damage. Families whose houses have been fully or partially damaged too are also entitled to relief under Duare Tran.

The government has allotted Rs 20,000 compensation for those whose houses were fully damaged, and Rs 5,000 for partially damaged homes. At least 3.6 lakh people have claimed relief under Duare Tran. The relief disbursement is scheduled to begin on 1 July. According to the state government’s timeline, eligible applicants are meant to receive the aid directly in their bank accounts by 7 July. However, according to farmers I spoke to, various issues stand in their way—poor awareness and the lack of digital literacy; the need for repeated visits to government offices; delay in receiving aid; and then finally ending up with little reimbursement. I spoke to Ravindra S Gavali, a professor at the National Institute of Rural Development and Panchayati Raj, an institute under the rural-development ministry.

“Decentralisation of relief and community participation is necessary to reach the grassroot level,” he said. “State governments could start by forming youth committees at panchayat levels in disaster-prone villages. Such teams should be digitally competent and be able to aid fellow villagers to avail government benefits.” Banerjee’s relief compensation for Cyclone Yaas only caters to the worst-affected districts—Purba Medinipur, Paschim Medinipur, North 24 Parganas, South 24 Parganas, Howrah— and excludes affected farmers in other regions such as Malda district. Islam, a farmer and a 29-year-old resident of Malda, is one of them.

When the first wave of COVID-19 hit India and the centre imposed a nationwide lockdown, he quit his contractual job in Mumbai and returned to his family home in Chandipur village. Over a

year after his return, Islam is now debt-laden and struggling to meet the basic needs of those at his home—an ailing uncle, his wife, and a five-month-old son. Islam described how the cyclone had further impacted his livelihood. “The harvest was hardly due by a month,” Islam said. “But the heavy rain during Yaas submerged my entire paddy field.” Last year, Islam sold 12 quintals of rice from his two-bigha land in government-designated mandis, at Rs 1,800 per quintal. This year, he got hardly three quintals as most of the wet crop had to be discarded. “As the produce isn’t of good quality, I can’t take it to government mandis,” he said. “So I will sell it to middlemen who usually give Rs 1,000 for a quintal.”

In the second week of May 2020, a hailstorm hit several parts of Malda and ravaged hundreds of mango plantations, including Islam’s four-bigha orchard. “First the hailstorm, and then Yaas,” he said. “I lost mangoes worth Rs 1 lakh and paddy worth Rs 25,000.” This year, he took a farmer’s bank loan of Rs 20,000 for growing paddy and mangoes. He has not been able to pay anything back yet. If he fails to pay out the loan within July, the bank will start charging him a monthly interest of five percent. Malda’s mango farmers had already been reeling under huge losses from Cyclone Amphan, which hit West Bengal in May 2020, and poor sales due to the pandemic. Yaas has made it worse. Mohammed Shamim, another farmer and a resident of Harishchandrapur-I block in the state’s Malda district, also suffered losses due to both the hailstorm and cyclone Yaas. He grows jute and cultivates paddy. The hailstorm damaged all the jute crop that had grown in his 2.5 bigha land.

“The head of the jute plant that holds maximum yield had broken off,” he said. “I tried restoring a portion that was partially damaged. The crops had only started regrowing that Yaas hit the place, drenching the entire field in knee-deep water.” Further, the COVID-19 crisis had made it difficult for Shamim to fetch good market rates for his paddy crop. “To avoid wastage, I often had to sell my crops at a lower price to middlemen,” he said.

“While the government mandis here pay Rs 1,700 per quintal of paddy, the middlemen give us Rs 1,200 or less,” he said. Shamim said he lost Rs 1 lakh of jute and paddy to Cyclone Yaas. Shamim added that he is yet to receive the Rs 20,000 crop insurance compensation that he had claimed after heavy rains had flooded his paddy fields in 2019. However, farmers of excluded districts have got some relief with the government’s announcement in June to double the farmer allowance under Krishak Bandhu, a scheme to provide financial assistance to farmers. Farmers with one or more acres of land will now get Rs 10,000 per annum instead of Rs 5,000.

Those with lands smaller than an acre will get Rs 4,000. Like Islam and Shamim, several other farmers left out of the state’s Yaas relief are relying on yearly benefits from the Krishak Bandhu scheme. Dibyendu Hatui, a resident of Hooghly’s Jangipara block lost 1.5 bigha of sesame crop to heavy rains during Yaas. He too told me that he was not entitled to compensation under the government’s Cyclone Yaas relief programme and will be depending on the Krishak Bandhu

scheme. According to Shyamal Samanta, an agriculture extension officer in Jangipara, the block alone has lost 5,376 hectares of standing crop to Yaas.

A study released on 27 May, by the Council on Energy, Environment and Water, a non-profit policy research institution, showed that 15 districts in West Bengal, home to around 72 million people, are vulnerable to extreme climate events such as cyclones, floods, and droughts. According to the study, districts like Howrah, Kolkata, North 24 Parganas, Paschim Medinipur and South 24 Parganas are hotspots for cyclones, which have increased five-fold in the state between 1970 and 2019. Taking lessons from Yaas and previous cyclones, government field experts have already started training farmers in the Sundarban area. I spoke to Prasanta Chatterjee, a senior scientist and head at Krishi Vigyan Kendra at Nimpith in South 24 Parganas. Krishi Vigyan Kendras are agricultural knowledge centres under the Indian Council of Agricultural Research. “We have distributed salt-tolerant paddy seeds to farmers hit by brine water intrusion,” Chatterjee said.

“We have also recommended farmers and fishery owners to use the collected saline water for seafood farming.” He added that farmers of boro paddy—a type of freshwater paddy sown in winter and harvested in summer—have suffered massive losses and that it would take at least three years to restore the soil health. He suggested that switching to sunflower and cotton cultivation for the time being could be helpful for farmers. Gavali also said that adaptation is the only key to combat frequent losses due to natural disasters. “A right combination of indigenous knowledge with new technology can help coastal communities adapt to calamities without worrying for their livelihoods,” he said.

**Bihar, West Bengal, Sikkim, Assam and Meghalaya: Under rain and flood alerts as monsoon remains active**

<https://weather.com/en-IN/india/monsoon/news/2021-07-02-bihar-bengal-sikkim-assam-meghalaya-under-rain-and-flood-alert>

"Most parts of India welcome the monsoons with open arms, anticipating a good crop output and a much-needed relief from the blistering summer heat. However, for east and northeast India, the season brings jitters as the accompanying floods destroy livelihoods, spreads diseases, and displaces lakhs of people every year. Assam, for instance, has witnessed extreme monsoon floods in eight of the last ten years since 2012.

As the monsoon season of 2021 completes a month, the parts of east and northeast India have started to witness severe flood situations. Koshi and Brahmaputra are referred to as the sorrow of Bihar and Assam, respectively. Flood situations in these rivers and rivers like Narayani, Bagmati, Kamla, and Gandak are already severe this year. Further, heavy monsoon rains forecast for the next five days will likely worsen the situation across the region. Extremely heavy rains forecast a monsoon trough—an extended low-pressure area—persists from Uttar Pradesh to

Assam. As a result, strong moist southwesterly winds from the Bay of Bengal are expected will bring very heavy rains, with isolated extremely heavy falls across east and northeast India for the next few days. As per the TWC met team, rainfall will be especially intense at 150-200 mm range from Friday to Sunday.

Local rainfall accumulation could jump up to 300 mm in these three days, followed by several days of 50-80 mm daily rainfall. Total precipitation during this projection period can surpass 400 mm across portions of Assam, Sub-Himalayan West Bengal (SHWB) and adjoining areas, raising the threat of flooding and waterlogging. The India Meteorological Department (IMD) has forecast widespread rains with isolated heavy to very heavy falls over Bihar, North Bengal, Sikkim and Northeast India for the next five days. Isolated extremely heavy rainfall is forecast over Assam, Meghalaya, Sikkim and northern districts of West Bengal on July 2 and 3.

Accordingly, the national forecaster has kept SHWB, Sikkim, Assam and Meghalaya under a red warning for Friday and Saturday, while Bihar remains under an orange alert on Friday. A red warning urges residents and authorities to 'take action' to minimise the impacts of adverse weather conditions, while an orange alert recommends them to 'be prepared'. Severe flood alerts The water levels have risen sharply across rivers in eastern India mainly due to the incessant heavy rains over the catchment areas in Nepal, Bihar and northeast India. As per the Central Water Commission, severe flood situations have been observed in:

- 1) Bagmati river in Sitamarhi, Sheohar, Muzaffarpur districts of Bihar
- 2) Kamala and Adhwara river in Madhubani and Darbhanga districts of Bihar
- 3) Koshi river in Supaul and Saharsa districts of Bihar In addition, water levels are also expected to rise in East and West Champaran, Samastipur, Khagaria, Bhagalpur, Kushinagar, Gopalganj, Vaishali, Madhepura and Katihar districts of Bihar; Jalpaiguri, Coochbihar, and Alipurduar districts in West Bengal as well as Dhubri and Kokrajhar districts of Assam. As per the Assam Disaster Management Authority, 2,743 people from Dibrugarh and Dibrugarh districts are affected due to the flooding so far this week. Authorities have set up three relief camps so far to shelter the flood victims. No casualties have been reported yet, but 22 houses and 428 hectares of crop area have been damaged in the state. Last year, repeated bouts of monsoon floods and landslides killed nearly 150 and displaced over five lakh people in the state of Assam.

Flood do's and don'ts If a flood is likely to hit your area, you should:

- 1) Elevate the furnace, water heater, and electric panel
- 2) Listen to the radio or television to keep yourself updated
- 3) Be aware that flash flooding can occur. In this case, move immediately to higher ground. Do not wait for instructions.

4) Be aware of streams, drainage channels, canyons, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.

If you must prepare to evacuate, you should:

1) Secure your home. If you have time, bring in outdoor furniture. Move essential items to an upper floor.

2) Turn off utilities at the main switches or valves if instructed to do so. Disconnect electrical appliances.

3) Do not touch electrical equipment if you are wet or standing in water. If you have to leave your home, remember these evacuation tips:

1) Do not walk through moving water. Six inches of moving water can make you fall. 2) If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.

3) Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely.

### **West Bengal: Sunderbans islands evacuated ahead of high tide**

<https://timesofindia.indiatimes.com/city/kolkata/sunderbans-islands-evacuated-ahead-of-high-tide/articleshow/83856770.cms>

"The South 24 Parganas district administration began evacuating villagers from Mousuni, Ghoramara, Sagar, Patharpratima and Gosaba in the Sunderbans on Friday, a day before a high tide hits coastal Bengal, which is still grappling with the crisis caused by Cyclone Yaas and a spring tide last month. The high tide will hit the islands whose embankments had given away during the cyclone and where repairs are still underway. The water level is already increasing and district officials are apprehensive of villages being flooded once more. Nabanna has alerted several districts, directing DMs to keep flood shelters and relief materials ready. "We have evacuated 3,500-odd villagers from Mousuni and Ghoramara.

Adequate relief materials are in stock while DMG and civil defence teams are on standby," said Namkhana BDO Santanu Singha Thakur. Gosaba BDO Sourav Mitra conceded that embankment repairs were pending in some places. "Mud embankments cannot be built in a day. A layer has to dry before another is laid on top. Incessant rain last week hampered work. We are evacuating some 7,000 villagers who will take shelter at relief centres," he said. On Friday, the water level rose by a metre and, officials said, it might rise higher between 9am and noon on Saturday. "The

CM told us to evacuate villagers before the tide and we are working accordingly. We have stationed rescue vessels at Sagar and disaster management teams are ready to act in case of an emergency,” said state Sunderbans development minister Bankim Hazra who inspected embankments at Mousuni and Patharpratima on Friday.

In East Midnapore, fishermen in the coastal belt of Digha, Mandarmani, Shankarpur and Tajpur have been asked not to head to sea on Saturday and block officials have been instructed to shift villagers to flood relief centres the moment they realise the water level is rising. No one will be allowed on the beaches during the high tide. Nabanna is also keeping close tabs on the probability of heavy rainfall in Jharkhand and Bihar, which may impact Bengal. The state has asked DVC not to release water from its dams without informing the government.

### **West Bengal: Panic among fishermen, locals as thousands of dead fish surface on Bengal's Digha Beach**

<https://www.news18.com/news/india/panic-among-fishermen-locals-as-thousands-of-dead-fish-surface-on-bengals-digha-beach-3880832.html>

"There have surfaced rows and rows of dead fish on Digha beach in West Bengal, causing massive panic among the fishermen and the locals. Several fishermen told News18 that they have never witnessed an event of this magnitude before and the locals are equally shocked. Some claimed that the fish that have emerged on the beach are, in fact, 'sea frog' (puffer fish). Fish experts have now been told to find out the species. The locals said these puffer fish were caught in the fishermen's net around 11 am on Monday.

Now these dead fishes/sea frogs that have come to the beach can rot and spread pollution and diseases. So just as one should try to find out who killed them, these fishes should be buried quickly, the locals said. Initially, thousands of sea frogs/puffer fish are believed to have died after being caught in the nets of those fishermen. However, locals are claiming that the carcasses, which run into thousands, have never been seen lying on the beach like this before. The incident, at a time when country is struggling with coronavirus pandemic, has caused a stir across the Digha belt. Environmentalists fear that it could affect the ecosystem.

### **West Bengal: Four Bengal fishermen go missing in Arabian Sea**

<https://www.telegraphindia.com/west-bengal/bengal-fishermen-go-missing-in-arabian-sea/cid/1819743>

"Four fishermen, who had travelled from Kakdwip in South 24-Parganas to Beypore in Kerala for better income, remain untraced since May 5 after their trawler went missing in the Arabian Sea and their family members now hope the Bengal government will help them get information about their kin. A family member of one of the missing fishermen said among the

four were three brothers who had travelled 2,340km to work in Kerala for a better living. He added the last time the four had spoken to their family members was on May 5, the day they ventured into the Arabian Sea for fishing on board trawler Ajmer Shah. A source in Kakdwip said while the three brothers — Shukdeb Das, 45, Santiram Das, 35, and Sushanta Das, 28 — had gone to Beypore in Kerala's Kozhikode district from Ganesh Nagari, Rajib Das, 32, had his home in Kalinagar. The source added that all the four were sole breadwinners for their respective families. The trawler had 15 fishermen, 11 of whom were from Tamil Nadu.

On Monday, the family members of the missing fishermen approached the Kakdwip police station for help. They requested the police to help them get information about the four fishermen. "Since May 5, we have been repeatedly trying to communicate with the fishermen but failed to reach them. We thought they were fishing in deep sea and hence remained unreachable. A few days ago, another fisherman from the area, who is in Kerala, told us that the trawler our family members were onboard had gone missing. We don't know whether they are alive or if they have sailed into the territory of a neighbouring nation. We finally informed the local police to seek the help of the administration," said Mamoni Das, a relative of the Das brothers.

"All the three brothers are married and we don't know what awaits their families. We hope the state government will help them," said Mamoni. On learning about the missing fishermen, Trinamul MLA from Kakdwip and former Sunderbans affairs minister Manturam Pakhira called on their family members. "Accompanied by senior police officers, I called on the families of the four fishermen on Monday evening. We have assured them of help and requested the administration to get in touch with the Kerala government," Pakhira said. Sunderbans affairs minister Bankim Hazra also said he would communicate with state secretariat to get information about the missing fishermen.

"I am unaware of the incident and will immediately communicate with my office to get information about the migrant fishermen," said Hazra. The incident of the four fishermen going missing has revealed that the fisheries department did not have any record about those who leave for other states to earn a living. An official in the fisheries department said no less than 40,000 fishermen migrate to Kerala every year for better income. "It is true fishermen go to Kerala but we have no such record about their count as they do not inform anyone when they migrate," said Jayanta Pradhan, the assistant director of fisheries (marine) in South 24-Parganas. Fishermen associations in Bengal said the urge to travel to Kerala was for two reasons — first, they get better paid in the southern state and second, jobs have dried up here. In Bengal, fishermen usually earn Rs 2,000 per week and also get a small share of their catch. However, in Kerala the amount is around Rs 4,000 per week.

"While at the end of a fishing season, we earn around Rs 40,000-Rs 50,000 in Bengal, in Kerala, the income range between Rs 70,000 and Rs 1 lakh for the same period," said a fisherman in Digha. A member of a fishermen association admitted that job opportunities had become less in

Bengal after a large number of trawler owners were pushed out the trade because of the spike in price of diesel and low yield of fish. “The drop in the production of hilsa and rise in the price of diesel have hit our trade in the past two years. Small fish traders have suffered badly and they are not ready to burn their savings to venture into the sea. This has forced fishermen to head to southern states,” said Satinath Patra, a secretary of the Sunderban Samudrik Matsyojibi Shramik Union.

### **West Bengal: The Shudra queen Rashmoni and a sacred river**

<https://www.thehindu.com/society/the-shudra-queen-rashmoni-and-a-sacred-river/article34847554.ece>

"In the 1840s, fishing communities in the Bengal Presidency were facing a crisis of survival. The trading corporation, East India Company, had turned its profiteering gaze towards the placid waters of the Ganga. In the months between February and October, small fishing boats would dot her iridescent surface, netting in bounteous harvests of the silvery hilsa, a prime delicacy in Bengali cuisine. Arguing that the fishing impeded the movement of ferries, a tax was imposed on fishing boats, a clever sleight of hand that reduced river traffic while raking in extra revenue for the Company. Hundreds of anxious fisherfolk travelled to Calcutta to plead their case with their upper-caste Hindu landlords, hoping they would support their cause. Unwilling to sour relations with their patrons in the Company, the Hindu elites were quick to turn their backs on the Shudra fishing community. Disheartened, the fisherfolk, mostly from the Jele Kaibaryta and Malo communities, trudged to Janbazaar, in central Calcutta, to the house of the wealthy entrepreneur, the late Raj Chandra Das. His widow, Rashmoni Das, also a Shudra, was their last hope.

What followed was a remarkable event in India’s colonial history. Rashmoni offered Rs.10,000 to the East India Company to take an ijara, or lease, of a 10-km-long stretch of the Hooghly River (the famous tributary of the Ganga), on whose banks was nestled the bustling metropolis of Calcutta, the then capital of colonial India. After Rashmoni procured the lease-holding documents, she proceeded to place two massive iron chains across the Ganga — in Metiabruz and Ghusuri — where the river arched like a bow, and she invited the beleaguered fisherfolk to cast their nets in the barricaded zone. Ganga for all as dinghies flocked to the catch zone, all large commercial and passenger traffic on the Hooghly came to a grinding halt. Bewildered at the turn of events, Company officials sent out dispatches seeking an explanation. Rashmoni said that incessant riverine traffic made it difficult for fisherfolk to cast their nets inside her ijara, lowering its profitability.

As a leaseholder, she was entitled, under British law, to protect the income from her property. If the Company thought otherwise, she was happy to litigate, and till a judicial verdict was reached, she would not unshackle her stretch of the river. With skiffs, budgerows, and steamships piling

up on the riverfront, the Company officials had little recourse but to come to an agreement. The tax on fishing was repealed, allowing the fisherfolk unfettered access to the Ganga. A Bengali Shudra widow had outwitted the most cunning colonial corporation in history, and protected the Ganga as a commons for fishing rights, using Anglo-Saxon capitalism's potent weapon — private property.

**Subaltern folklore** Almost 120 years later, in 1960, Rashmoni's first biographer, Gauranga Prasad Ghosh, photographed one remaining iron peg — the size of a baby elephant's foot — that had been used to fasten the chain across the river. Uncelebrated and forgotten, the peg was a lonely remnant of that historical moment, now used sometimes by tea-sellers to break the charcoal for their chulas. Rashmoni's resistance, however, had become part of subaltern folklore. Acclaimed Bengali author Samaresh Basu, in his seminal river novel, *Ganga* (1974), wrote that for the fisherfolk, the river forever remained 'Rani Rashmonir Jal' — 'the waters of Rani Rashmoni'.

My childhood memories of Sunday mornings coalesce around Rani Rashmoni Bazaar in Beliaghata. Set up by Rashmoni in the 1850s, it was my weekend kaleidoscope of sounds, aromas and sights, a half-kilometre walk that ended on the Beliaghata Canal. Once a navigable creek, connected to the Ganga, which ferried cargo and people, the canal now carries away the city's sewage. It was in the waters of the Beliaghata Canal that the Das family of Jan Bazaar — Rashmoni's husband's family — first made their money, transporting bamboo downstream. Rashmoni's husband bought most of the land in Beliaghata on both sides of the canal to store export goods ranging from musk to muslin. Using canals — the highways of the 19th century — for commerce, the Das family soon acquired substantial land and property, transforming the family from banik (entrepreneurs) to zamindar (landlords). In the 19th century, Calcutta was witnessing a remaking of the local aristocracy.

Unlike in the previous century, when power was wielded by landed gentry from rural areas, the new elites were urban traders who made their fortunes as trading partners to the East India Company. With their newly accumulated wealth, many bought out the estates of landowning aristocrats whose fortunes were declining. This new aristocracy birthed Calcutta's abhijata bhadralok — high society — the exclusive domain of upper-caste families. In *Calcutta: Essays in Urban History* (1993), the late historian S.N. Mukherjee narrates how the Brahmin, Kayastha and Baidya castes were unwilling to accommodate Shudras, such as the Das family, into their echelons.

**Water and power** It is believed that it was Rashmoni's advice that made Raj Chandra Das look towards the Hooghly. The banks of the sacred river, central to the everyday lives of the people of Calcutta, were emerging as a site for upper-caste Hindu philanthropy. The ghats — landing stages for bathing, cremation, and commerce — were located at the intersection of water and power. It was the perfect site to establish the Dases' influence.

The result was the elegant Babu Rajchandra Das Ghat or Babughat, adorned with Doric columns, timber louvres, and an expansive set of steps leading to the river. Soon after, in 1831, the Das family went on to build the Ahiritola Ghat. Of the 42 historical ghats that still adorn the riverfront in Kolkata, these two remain among the oldest and busiest. The untimely death of Raj Chandra Das, six years after the completion of Babughat, left the young widow, Rashmoni, in charge of one of Bengal's wealthiest family estates. She wielded her power for the next 30 years, guided by her keen business acumen, solidarity with the underprivileged, a penchant for litigation, and a remarkable ability to take patriarchy to task.

Rashmoni persuaded Prince Dwarakanath Tagore, the grandfather of Rabindranath Tagore, to part with two of his profitable estates to repay the loans he took from her late husband: a daring feat at the time, given Tagore's prestige and power. Neither did she hesitate to take on armed conflicts with oppressive landlords and British indigo planters, who were at the receiving end of her lethels, trained private army. She repeatedly took on the East India Company — using their white men's laws against them — but also did not shy away from profiting from the Company.

Gauri Mitra, in her biography of Rashmoni, notes that during the Revolt of 1857 many Indian and European traders started selling off their shares in the East India Company. Rashmoni bought these at dirt cheap prices, accruing immense profits after the revolt. Through her lifetime, Rashmoni continued donating money for the construction of ghats on the Hooghly. Mitra suggests that Rashmoni constructed and renovated nine ghats after the passing of her husband, which added significantly to her popular appeal. For a widow from the Kaibartya caste to wield such power in a male-dominated orthodox Hindu society was unusual.

It was thus fated perhaps that her tryst with Brahminical orthodoxy would take place at the site of her last and greatest undertaking — the Dakshineswar Kali Temple on the banks of the holy river. At 100 feet, the ornate beige and vermilion temple with nine spires is considered one of the holiest sites for Hindu pilgrimage and prayer. It emerged out of a dream. Rashmoni was on a budgerow on her way to Benaras on a pilgrimage, when Kali appeared to her in a dream, asking for a temple dedicated to her to be built on the banks of the Hooghly. Rashmoni decided to give material shape to her theophany, and sought to buy land on the auspicious western bank of the river. As news spread of a Shudra widow wanting to build a temple on the banks of the sacred river, the upper-caste landlords on the west bank decided to remind Rashmoni of her place. They admonished anyone selling land to her, forcing her to turn to the eastern bank. Montage of religions The 33 acres of land that Rashmoni finally acquired for Dakshineswar Kali Temple on the eastern bank came from a montage of religions.

A major part of the land, including an abandoned factory office, was acquired from the family of a deceased Protestant English businessman, John Hesty. The rest was bought from Muslims, which included a large pond, a graveyard, and a mazhaar or shrine for Gazi baba, a local saint. The last plot belonged to Hindu villagers and included a mango orchard. Rashmoni did not erase

the history of the land she purchased. Instead, she repaired the factory office and the water tank. Today, the magnificent temple carries the syncretic history of its origins in its reflection on the waters of the Gazipur tank on one side and the sacred Ganga on the other. As the temple neared completion, the priests of Calcutta refused to endorse the Dakshineswar Kali Temple as a Hindu place of worship.

A Shudra woman offering prasad to the divine was forbidden by the shastras, they said. The rejection shook Rashmoni deeply. But a solution appeared in the shape of a poor Brahmin scholar, Ramkumar Chattopadhyay, who had recently moved to Calcutta. Hindu texts said that if temple land was donated to a Brahmin priest and he installed the deity, it would be deemed fit for worship. Rashmoni handed over all the temple land and property to Chattopadhyay. The priest installed the deities, and the temple was inaugurated in 1855. As Chattopadhyay moved into the temple complex as the resident priest, he brought his teenage brother, Gadadhar. Scholars Supriya Banik Pal and Rup Kumar Barman quote historical archives to show that young Gadadhar not only had initial reservations about working for a Shudra woman, he also refused to eat the prasad at her temple.

This obstinate and orthodox young Brahmin boy, later to share a spiritual bond with Rashmoni, would metamorphose into one of India's greatest Hindu philosophers and mystics, Ramakrishna Paramahansa. Today, the Dakshineswar temple ghat teems with people on weekends. The surface of the Ganga glitters with sunlight leaping into it from the edges of slate-grey clouds. Some pilgrims arrive for an immersion in the Ganga, their bodies emerging from the silt-laden waters, their hands folded in prayer.

Some fill up old plastic bottles to carry the sacred water home. In one corner, a middle-aged man carefully takes off his shoes and socks and dips his feet gently into the water, as his wife, in a black sari with a golden fish print, holds him firmly by his arm. The colossal Vivekananda Setu that bridges the distance between the city and its suburbs looms large above it all, juxtaposing the 20th century with a 19th-century centre of Hindu revivalism that owes its existence to a Shudra widow. Except for the Dakshineswar Temple, the rest of Rashmoni's legacy, strewn across Kolkata, is in different stages of dilapidation. According to biographer Sisutosh Samanta, this includes two houses, 30A and 30B, on Harish Chatterjee Street in Kalighat, purchased in 1837 by Rashmoni, and in which she breathed her last in 1861.

The resident of this ramshackle heritage building is the current Chief Minister of West Bengal, Mamata Banerjee. As upper-caste male protagonists — Raja Ram Mohan Roy, Ishwar Chandra Vidyasagar, Ramakrishna Paramahansa, Swami Vivekananda, and others — gained intellectual prominence, Rashmoni, one of the most influential icons of the 19th century, was relegated to the margins of history. But she stayed uneffaced in folklore, recent evidence being a chart-topping 1,300-episode Bengali biographical series on TV since 2017. Her mass appeal is unsurprising. The honorific of 'rani' was not, after all, bestowed on her by any official decree. The 'rani'

prefix for Rashmoni resonates with that of ‘Ma’ for Ganga — both emerge from the love of the people and meet at the point where the Ganga’s waters become Rani Rashmonir Jal, finally dissolving the caste barrier between the Shudra queen and the sacred river.

### **West Bengal: Unapproved fishing boat capsizes, crew rescued in South 24-Parganas**

<https://www.telegraphindia.com/west-bengal/unapproved-fishing-boat-flips-crew-rescued-in-south-24-parganas/cid/1819432>

"An unauthorised mechanised fishing boat capsized in the Bay of Bengal near Kalas Island, around 40km away from Bakkhali in South 24-Parganas, in turbulent weather early on Saturday. All 12 fishermen on board FB-Tarama engaged in marine fishing, however, were rescued by crew in boats nearby. Jayanta Kumar Pradhan, assistant director of fisheries (marine), South 24-Parganas, said: “We have issued a show cause notice against the owner of the boat, identified as Samiran Khatua, a resident of Braja-Ballabhpur of Patharpratima for unauthorised fishing and flouting the weather alert.

The boat was not registered for marine fishing.” The capsizing took place within a week of four persons drowning when a vessel with barrels of fuel lost balance and capsized in river Hooghly in East Midnapore’s Nandigram. Sources in South 24-Parganas district administration said the boat in Saturday’s incident was not authorised for marine fishing and had flouted the “weather warning” that categorically asked fishermen to return from sea. Marine fishing resumed from June 15, after three months of mandatory ban in the east coast to help fish breed. However, owing to an apprehended turbulence in the sea, the administration issued yellow alert for June 17-18 and red alert for June 19-20 asking fishermen who had gone for marine fishing to return immediately. FB Tarama left for marine fishing on June 17 from Patharpratima, violating the weather warning. Secretary of Kakdwip Fishermen Welfare Association Bijan Maity said the boat capsized after breach on its floor.

“If the boat is unauthorised, the government will take legal action with it. However, we are yet to verify whether it was unauthorised,” said Maity. In other parts of south Bengal, water level in most of the seasonal rivers sourced from different areas of Jharkhand are rising following heavy rain in the neighbouring state and most dams releasing water. Officials said despite the rise in water levels in rivers like Bhagirathi, Ajay and others; they remain under the danger level.

Sources in the irrigation department said, Durgapur barrage had released 50,525 cusec water till 3pm on Saturday and was likely to release more water subsequently. However, the amount of water released dropped on Saturday afternoon. Officials said the barrage had released 70,000 cusec water on Saturday morning but by afternoon the amount was reducing bringing some relief to the irrigation department. The water level in Bhagirathi in East Burdwan’s Katwa was 12 meters on Saturday afternoon, while the danger level stood at 13.17m. The water level in

Damodar was 27.69m and remained much below the danger level of 32.79m. The amount of rainfall in south Bengal districts decreased on Saturday compared to the past three days. As per the sources in the Met office, till 6am on Saturday, Canning in South 24-Parganas received 76.6mm rainfall, which is the highest in the state. Darjeeling and Bankura received 44.4mm and 33.6 mm rainfall during the same period.

### **West Bengal: Life in a pandemic: Bengal faces major shortage of hilsa fish ahead of auspicious**

<https://www.news18.com/news/india/life-in-a-pandemic-bengal-faces-major-shortage-of-hilsa-fish-ahead-of-auspicious-jamai-shashti-festival-3854438.html>

"Kolkata is facing a major shortage of the city's favorite fish- Hilsa while the demand continues to rise unabated ahead of the auspicious 'Jamai Shahsti' festival. Every year before the occasion the markets are filled with supplies of these fishes, but this year a massive shortage has been reported. The decreased supply has been attributed to low pressure and the ban which was imposed on fishing in the sea. However, Bengal's only hope is to get Hilsa from Odisha and some scattered supply from Myanmar. Hilsa fishing is stopped before the onset of the monsoon across the country. This rule is observed for 50 days for the breeding of this fish.

Fishermen were able to go to sea with trawlers from June 15 and that is why there has been a huge shortage of fish before Jamai Sasthi. Cyclone Yaas, which lashed the coastal districts of the State on May 26, has dealt a severe blow to fishermen in East Midnapore and South 24-Parganas as only 40 per cent of trawlers could venture out to catch the prized Hilsa on Tuesday, the first day of government-permitted fishing this season. Sources estimate at least 30 per cent of trawlers will not be able to set sail this year owing to the disruption of lives and livelihoods of fishermen after the recent cyclone amid the pandemic. The Hilsa that is being sold in the market now is not the famous Padma hilsa.

The availability of the fish is also hit due to the ban by the Bangladesh government on the export of hilsa to India. Keeping in mind the demand in West Bengal, the Bangladesh government had last year allowed the export of 500 metric tonnes of hilsa during this time. But now, some fish have come to the markets from Myanmar. The Secretary of the Howrah Wholesale Market Organisation said 150 metric tonnes of Hilsa had been imported from Myanmar so far. The fish came from the Irrawaddy River there. He said that there is no such difference between Padma Hilsa and Irrawaddy Hilsa. The only difference is that the fish had to be covered in ice from Myanmar by ship due to the long distance.

In comparison, Padma Hilsa is available fresh. As soon as the market opened on Tuesday, the price of Hilsa rose to Rs 1,100 per kg. Prices in the retail market are expected to rise from Rs 1,200 to Rs 1,500. It is learned that about 1,800 trawlers went to the deep sea from Digha in

search of fish on Monday night. But due to continuous lockdown and low pressure, many trawlers are not able to start their journey from Sundarbans. Celebration of Jamai Sashti Jamai Shashti is a day devoted to the 'son-in-law' of a family. This festival is predominantly celebrated in West Bengal and is regarded as an auspicious occasion, where a grand feast is also organised.

### **West Bengal: State govt makes negative Covid report mandatory for all fishermen**

<https://www.telegraphindia.com/west-bengal/state-government-makes-negative-covid-report-mandatory-for-all-fishermen/cid/1818937>

"The second wave of Covid-19 changed fishing rules this year. The state government on Tuesday ordered only 15 fishermen per trawler and made it mandatory for those going into the sea to have a negative Covid report or a full-vaccination certificate. Covid risk to fishermen cooped up on trawlers was a worry for the government before allowing marine fishing this year, a fisheries official said. Around 1,500 vessels from fishing harbours in Kakdwip, Namkhana, Raidighi, and Diamond Harbour in South 24-Parganas and over 1,000 vessels from Digha, Petuaghat (Contai), Sankarpur and a few other places in East Midnapore ventured into the sea at the end of the annual ban on Tuesday only after adhering to Covid protocols laid down by the state government.

"The three-month ban on fishing was a big relief as the Covid situation peaked during that period. Though the situation is better now, we are taking no chances and have put in place strict safety measures with the help of several fishermen's organisations," said Jayanta Pradhan, assistant director of fisheries (marine), South 24-Parganas district. State fisheries department minister Akhil Giri said: "I held a meeting last week with fishermen's associations where it was reiterated that no person will be allowed to go for marine fishing unless he is either vaccinated and or carries a negative report." Expressing the seriousness of the government's intent, Giri said from Wednesday the Digha fish auction centre would resume work with strict curbs. "Anybody spotted without a face mask will pay a fine of Rs 500," he said. Sources in both South 24-Parganas and East Midnapore said the administration was keeping a close watch on the fishermen community, particularly after the arrival of migrant labourers from adjacent districts and some southern states.

Fishermen's organisations had been told to get fishermen and allied workers tested for Covid at government centres and debar those with symptoms from going to the sea. Satinath Patra, secretary of the Sunderbans Samudrik Matsyajibi Shramik Union, told this paper they tried to ensure only physically fit people aged between 19 and 45 who were Covid negative or fully vaccinated were allowed. New shipping office Chairman of Calcutta Port, Vinit Kumar, on Tuesday inaugurated a new shipping and cargo-handling office near the Haldia dock complex's finger jetty. Kumar took the opportunity to address recent instances of alleged theft at the port, as well as the impact of the second wave of Covid-19 on shipping and handling operations. Kumar

said steps would be taken to prevent theft with optical character recognition (OCR) for number plate detection and mandatory fast tags for vehicles. He asked port officials to speed up Covid vaccination for personnel.

### **West Bengal: Yaas blow: Only 40 per cent trawlers venture out to catch hilsa**

<https://www.telegraphindia.com/west-bengal/yaas-blow-too-few-boats-for-hilsa-hunt/cid/1818925>

"Cyclone Yaas, which lashed the coastal districts of the state on May 26, has dealt a severe blow to fishermen in East Midnapore and South 24-Parganas as only 40 per cent of trawlers could venture out to catch the prized hilsa on Tuesday, the first day of government-permitted fishing this season. Sources estimate at least 30 per cent of trawlers will not be able to set sail this year owing to the disruption of lives and livelihoods of fishermen after the recent cyclone amid the pandemic. Sources in the fisheries department said in normal times 8,000 trawlers and boats would have sailed on June 15, the formal end of the yearly three-month ban (April 15 to June 14) on fishing in the east coast to allow unhindered breeding. But on Tuesday, merely 3,500 boats and trawlers went out to catch hilsa. Fisheries department officials said more than 30 per cent of trawlers would venture out in the next two weeks as many fishermen were too busy grappling with survival basics to do their job.

"Only 40 per cent of trawlers and boats could sail on the first day and the figure may increase in the days ahead, but many fisherman who have lost their homes to Yaas are still too busy trying to rebuild their lives to fish," said a district official and added that the probable outcome would be a third consecutive year of low hilsa yield in Bengal. Akhil Giri, the state fisheries minister, held a meeting on Saturday with members of the fishermen's association to address potential problems. "According to the survey of our department, 30 per cent of the boats will not sail this time owing to (the impact of) Yaas and other reasons. But we will try to get them back and running soon, that is important," he said. Fisheries department officials said they feared a poor catch of hilsa this year owing to "low morale" and "infrastructure handicap".

"Many fishermen have suffered the impact of Cyclone Yaas. Many fishermen have lost their homes to inundation. If a person has three boats, he is likely to sail only one this time. As a result, we can't expect sufficient hilsa production at the start of the season. However, we are hopeful that many more fishermen and trawlers will join the fleet as the season progresses," said Jayanta Pradhan, an assistant director of fisheries (marine) in South 24-Parganas. Sources said the impact of Cyclone Amphan that hit the state last year was not as severe for the fishing community as Yaas. Flooding was more rampant after Yaas. Several association members also pointed out that hundreds of fishermen were currently putting up in makeshift shelters following the cyclone, which made them reluctant to leave their families.

“My home has been washed away by Yaas and I am spending sleepless nights under a tarpaulin with my family. How can I think about sailing a boat for days on end, leaving my family members in such a situation?” asked Prabhat Bar, a fisherman from Shankarpur in East Midnapore. Officials in the fisheries department and the fishermen’s associations of South 24-Parganas and East Midnapore said Yaas apart, last year’s low hilsa catch also discouraged many fishing teams this year. In 2019, fishermen caught 25,000 metric tonnes of hilsa during monsoon. The figure dropped to 5,000 tonnes in the corresponding 2020 season. “Yaas has hit the coastal region badly and many fishermen don’t want to sail immediately as they are busy repairing their homes. We also faced a severe loss in hilsa catch last year as yield was very low,” said Satinath Patra, a secretary of the Sunderbans Samudrik Matsyojibi Shramik Union, suggesting morale among fishermen was low. Some trawler owners, however, chose optimism.

“Odisha’s fishermen are getting hilsa in good quantities. So, we think this time we can catch more fish. True, production will be low initially as many trawlers won’t be at sea. But hilsa’s annual production will depend on the number of boats that sail in the second phase,” said Shyamsundar Das, a secretary of the Digha Fishermen and Fish Traders’ Association.

### **West Bengal: Hilsa trawler capsizes: National Disaster Response Force recovers bodies of three fishermen**

<https://www.telegraphindia.com/west-bengal/hilsa-trawler-capsize-death-toll-rises-to-4-bodies-of-3-fishermen-found/cid/1818839>

"Members of the National Disaster Response Force (NDRF) on Monday recovered the bodies of three fishermen who had gone missing late on Saturday night when their trawler capsized in the Hooghly river in East Midnapore’s Nandigram amid a sudden high tide. Police sources said that the bodies of Rupesh Kumar Khanra, 20, Kashinath Sheet, 42, and Bistupada Maity, 27, were found floating around 6km from where the hilsa trawler had capsized. All the three fishermen were from Marishda, East Midnapore’s Contai. The body of the trawler driver Pradip Manna, 40, had been recovered on Sunday itself. Akhil Giri, state fisheries minister, said: “It was a very unfortunate incident as four persons lost their lives. We will reach out to the families with government compensation very soon.”

“Each family (of the deceased) will get compensation of Rs 2 lakh,” said Kishore Biswas, a deputy magistrate in Haldia. The crew of 14 on the trawler, Maa Karunamoyee, had been shifting 14 barrels of diesel, of 200-litre capacity each, to fuel the vessel for a new season of hilsa fishing starting from June 15. Sources said that the weight of these diesel barrels made the vessel lose balance and topple. Nine among the 14 on board could swim to safety after the capsizing. The accident cast a pall of gloom in the area. Fishermen who had been looking forward to the new hilsa season had told this paper on Sunday that accident was a setback that they would never forget all their lives.

## **West Bengal: Govt makes comprehensive plan to save East Kolkata Wetlands**

<https://www.socialnews.xyz/2021/06/12/bengal-govt-makes-comprehensive-plan-to-save-east-kolkata-wetlands/>

"For the first time in the last three decades the state government has come up with a five-year comprehensive plan to protect the East Kolkata Wetlands (EKW) -- the 125 square kilometres of natural and human-made diverse habitat which is considered to be the lungs and the kidney of the city.

"The EKW Management Action Plan (2021-26) comprises Institutions and Governance, Water Management and Pollution Conservation of Species and Habitats, and Sustainable Resource. The Plan is a major step forward towards the maintenance of East Kolkata in a healthy condition to enable delivery of their full range of ecosystems of sustaining biological diversity," state Environment Minister Soumen Mahapatra said. The Rs 120-crore plan that has already got the necessary approval from the state Finance Department will work on land use and land cover of the wetland; sewage quantity; diversity of biota; reducing species invasion threats to fisheries; reducing livelihood vulnerability; increase of active participation; and a systematic wetlands inventory. "EKW, a Ramsar site, is capable of naturally treating wastewater.

It is not only responsible for preventing the city from massive inundation in case of heavy rain but also ensures that groundwater depletion does not emerge as a major threat to the city. The EKW Management Plan (2021-26) has been conceived after year-long research with the aim to protect the wetlands and at the same time usher in development in the livelihood of the farmers and the fishermen, who are dependent on this unique environment site," Environment Secretary Vivek Kumar said. The state government came up with the plan after there was a lot of hue and cry over the encroachment and illegal destruction of the wetlands over the years.

The illegal dumping of waste by several urban local bodies resulting in contamination of the water of EKW has been under the scanner of the National Green Tribunal after a petition was filed by environmentalist Subhas Dutta in May 2019. The NGT, in July 2020, had ordered the scientific shifting of legacy waste - also called bio-mining - accumulated in the wetlands for decades. Located to the eastern fringes of Kolkata City and spanning 12,500 ha, the EKW is a mosaic of landforms including predominantly water dominated areas (used as fish farms) to land-centric usage for agriculture, horticulture and settlements.

The existing wetland regime is a remnant of a series of brackish wetlands connected to the freshwater as well as marine environments of the Gangetic Delta and the Bay of Bengal, in an ecological continuum with the Sundarbans. The host is one of the largest sewage fed aquaculture in the world. Over 260 shallow fish ponds in the EKW receive over 900 MLD pre-settled sewage from the Kolkata Metropolitan Region through a network of locally excavated secondary

and tertiary canals, which is used to produce annually 20,000 MT of fish, 50,000 MT of vegetables and irrigate 4700 ha of paddy land.

As the nutrient-rich effluent moves through the system, it is progressively cleaned, and nutrients are redirected to the growth of algae or agricultural products grown along the pond edges and agricultural lands. Algae and other aquatic plants are used to feed up to 17 species of fish cultured in these ponds, which in turn create nitrogen and phosphorus-rich water to irrigate the adjacent rice fields. The traditionally evolved natural water purification waste recovery practice saves Kolkata City nearly Rs 4,680 million annually in terms of the treatment cost of up to 65 per cent of the city's sewage. These wetlands also lock in over 60 per cent of carbon from wastewater, thus reducing harmful greenhouse gas emissions from the region. The wetland is inhabited by diverse species.

At least 380 major flora including 93 plant families, 10 amphibians, 29 reptiles, 123 birds, 79 fish, 24 crustaceans and 13 mammal species have been recorded in these wetlands. Marsh Mongoose was discovered by the Zoological Survey of India on this wetland. The traditional waste recovery practice provides subsistence opportunities for a large, economically underprivileged population of 0.15 million living in over 37 mouzas within its boundaries. EKW is also one of the few natural habitats providing recreational avenues for the urban and peri-urban population.

### **West Bengal: Of cyclones and the tigers of Sundarbans**

<https://www.thestatesman.com/opinion/of-cyclones-and-the-tigers-of-sundarbans-1502972390.html>

"Cyclone 'Yaas' devastated vast tracts of the Indian Sundarbans on 26 May 2021, breaking the vulnerable earthen dams along the river-banks and flooding the islands with salt water. The devastation amounted to an estimated Rs 15,000 crore in the state of West Bengal, according to government sources. 'Yaas' has also impacted the wildlife of the Sundarbans as much as it has disrupted human lives. The Sundarbans region is also home to 96 mangrove tigers. The region is protected by the Tiger Project, the nearby National Park and the largest Ramsar wetland conservation site of India. Tigers have five sub-species living within eastern and south-east Asia. These are the Royal Bengal Tiger, the Indochinese Tiger, the Siberian (Amur) Tiger, the South China Tiger and the Sumatran Tiger.

The Royal Bengal Tiger has the largest wild population amongst all these sub-species. Sundarban tigers have unique behavioral and adaptation traits, unlike tigers of other parts of southeast Asia. Tigers are territorial. Male tigers mark spaces with pheromones and violently guard their territory from rivals. The Sundarbans have diurnal tidal regimes where the mangrove forested islands are washed by tidal waters at least twice a day. This makes marking of territories difficult. Tigers of the Sundarbans can augment their diet with fish and crabs. They can swim with an estimated speed of 13 km/hr. Sundarban tigers can climb trees, drink salty water, hunt in daylight and prey upon humans. These preying behaviours are different from other members of this species. A scientific study indicates that these tigers have smaller, lighter frames than others because of their ability to swim and climb trees. There is a dearth of fresh water in these islands and tidal waters contain around 1.5 per cent salt.

Drinking salty water makes the tigers suffer from liver and kidney problems. This also makes them more irritable and aggressive. Human-tiger conflict is a reality in the Sundarbans. These deltaic islands are unsuitable for human habitation. This discouraged the colonization of these islands by humans until the 18th century. During the British colonial empire, large tracts of mangrove forest were cleared for agriculture. Eventually, 54 out of 102 islands became inhabited by humans. Governmental sources report around 10 tiger attacks on humans each year. Villagers claim that at least 10 people die due to tiger attacks each month. Reports indicate that between 1985 and 2009, approximately 789 persons were attacked by tigers. Twenty per cent of these attacks occur in the pre-monsoon month of April. This situation gets more dire during flooding or cyclones, when tigers can easily swim up to the villages inundated by water. One of the main reasons behind the under-reporting of tiger attacks is the tiger migration into the forest without the knowledge of forest authorities.

According to Joint Forest Management plans, villagers around the Sundarban reserve forests can apply and get passes to collect nontimber forest products. Even fishing vehicles operating around the reserved forests require passes for their entry. The majority of the local people depend on fishing and honey collection. Both of these trades risk tiger attacks. There are villages dotted across the Sundarbans housing 'tiger widows.' They are the women who lost their husbands to tiger attacks. To prevent tiger migration into the villages, the forests are separated with nylon nets. This acts as a psychological barrier to the tiger, reducing tiger sightings in the nearby villages. In spite of the nets, old tigers or pregnant tigresses do enter villages to access easy prey. Face masks are worn on the back of the head by the villagers entering tiger-occupied forests.

These masks confuse the tigers as they are behaviorally tuned to attack unsuspecting prey. Tigers are well known for their camouflaged hunting which makes them almost invisible. Their padded feet muffle all sounds, their claws stay retracted inside their paws until required for hunting and their black stripes amongst yellow coat colour makes them virtually invisible amidst straw-colored mangrove palms. Conflict scenarios add to the fear surrounding tigers in the Sundarbans. Natural disasters always result in more human-tiger conflicts in this region.

After super-cyclone Amphan on 20 May, 2020, eight tiger attacks were reported. ‘Yaas’ has just hit the islands, which may result in similar tiger attacks. Tiger conservation is impossible without the support of the local population. Authorities must take special care to limit post disaster tiger-human interaction, minimizing the chances of human-tiger conflicts. Understanding the unique behaviour of the Sunderban tigers is crucial in managing such conflicts.

### **Gujarat, Odisha and West Bengal: Managing risks from overlapping hazards**

<https://indianexpress.com/article/opinion/managing-risks-from-overlapping-hazards/lite/>

"Within a span of a week, first the Western Coast (Gujarat in particular) and then the eastern coast (Odisha and West Bengal) were battered with cyclones —Tauktae in the west and Yaas in the east. While cyclones and storms are not unusual on the Eastern coast (we have witnessed Aila, Bulbul, Amphan in the past), what was unique this time was that an environmental hazard happened in the middle of another mega hazard – the Covid-19 pandemic. Moreover, while the Yaas cyclone caused immediate damage, the flooding it induced took the adversity to a different scale altogether. We need to take cognisance of the fact that such overlapping hazards could be a recurrent phenomenon.

Accordingly, the disaster risk reduction activities need to be geared towards first an interdisciplinary diagnosis of various risk drivers. This then needs to be followed by a sequence of interventions spread round-the-year — not a knee-jerk ex-post set of actions – with a focus on building resilience at the individual and community level. History – up to as recently as last year – shows that millions of hectares over the Ganga-Brahmaputra flood plains and the delta have been subjected to riverine and flash floods on clockwork regularity. Further, the densely populated riverine areas, the sand bars that dot the river channels, and the deltas are continuously subjected to river bank erosion.

Often these two phenomena coincide in the flood months. This year, with Covid already rampaging the countryside, the future looks ominous. Though already late, the ongoing adversities resulting from the Yaas cyclone and Yaas-induced flooding amidst the pandemic, need to be seen as early warning signals on the challenge that stares at our face. Any sustained change in reducing disaster risk would require a clinical understanding of the risk drivers. In disaster parlance, the risk is defined as a product of hazard and vulnerability. When overlapping hazards take place, with each hazard having their own character, the final shape of the hazard is often a product of these individual characters. In the recent case of Yaas and the flooding induced by it, the former was a single event, with high magnitude, spread over a limited time duration (few hours), with moderate speed of onset (over days), and high arial and spatial dispersion (multiple districts over the three states of Odisha, West Bengal and Jharkhand).

The resultant flooding, in the coastal districts and in the Sunderbans delta, was of moderate magnitude, spread over a much longer duration of time, high frequency with the tidal surges continuing to inundate vast stretches of coastal areas and riverine deltas. So, finally, we have a situation where the overall hazard is much larger than the triggering cyclone. Vulnerability, or the propensity of loss, is itself an outcome of complicated processes. The proximate causes of vulnerability could be the recurrent exposure to hazards as people continue to live in unsafe conditions — whether on the riverine flood plains, the sinking deltas or the eroding sand bars. However, this understanding of vulnerability often equates it with exposure and biophysical factors. Hence limiting the exposure, either through zoning or planned retreat, becomes an important way of reducing this biophysical vulnerability. But vulnerability also emerges from underlying socio-economic-political conditions.

Often the (socially, economically and politically) marginalised population have to reside in such precarious areas. They often lack access to various resources – land (due to salinity intrusion or erosion), safe housing, water and sanitation, stable livelihoods and markets. All this is both a cause and outcome of their social vulnerability. The delicate balance in their life, the subsistence nature of their livelihoods gets seriously disturbed with every event of a hazard. Every event of a hazard is hence followed by increasing outmigration of able-bodied men and women from the area. As the geographer Susan Cutter has argued, this interaction of biophysical and social vulnerability jointly forms vulnerability-of-place. The densely populated flood plains, the sand bars, the delta and the coast are social and physical spaces where this vulnerability-of-place manifests. As an outcome of the cyclone Yass and the Yaas-induced flooding, we are currently witnessing such disruptions in the form of salinity intrusion, loss of agriculture and capture fisheries, decimation of the marine capture fishery supply chain in East Midnapore district, lack of access to safe water and a pitiable condition in the villages in Sunderbans delta, where rotting fish, plants and animals are resulting in severe stench and pollution are enhancing the possibility of water borne disease.

All these when the state is in the middle of pandemic. The risk of escalation of water borne diseases and another wave of Covid cases in the affected states at our face. It is important that lessons are drawn from such adversities and some short-term proactive planning is taken on war-footing in other areas/states to avoid similar sad state of events. But disaster risks cannot be managed by short-term reactive actions. Risk can only be managed and minimised through a plethora of year-round activities that combines certain defence strategies that reduce the probability of the occurrence of the hazards in the first instance, with preparation strategies like early warning, arrangement of adequate spaces for evacuation and prompt rescue and evacuation, and risk mitigation and adaptation strategies that could enhance the risk absorptive capacity among the population through reduction in the consequences of such overlapping hazards by enhancing the (flood)risk-proof capacity among the exposed population.

An overwhelming focus only on flood defence strategy, that is inherently infrastructure heavy, often remains ill-implemented and is subjected to build-forget-rebuild syndrome. Components of this strategy creates a false sense of security and actually enhances vulnerability. The dismal state of embankments, their toppling and the resulting flooding witnessed now in the coastal districts of West Bengal and in the Sundarbans delta clearly indicates their limitations. Only through a combination of these strategies can the otherwise vulnerable population have the capacity to absorb, recover, adapt and transform even in the face of overlapping hazards.

Only then will resilience be built. This would require a multidisciplinary approach to risk reduction, where each of the risk drivers is subject to interdisciplinary deliberation by a multiple set of institutions followed by a preparation of a plethora of thematic interventions planned round-the-year which would reduce the intensity of the risk drivers. These would build resilience among the otherwise exposed and vulnerable population. If such capacities are not possible to be built, then planned retreat of the population from those spaces would remain as the most prudent strategy.

#### **West Bengal: One dead, three fishermen missing as hilsa trawler capsizes near Nandigram**

<https://www.telegraphindia.com/west-bengal/hilsa-trawler-tips-over-one-dead-and-three-fishermen-missing/cid/1818737>

"A trawler driver drowned and three fishermen went missing late on Saturday night when their vessel, moored at Gangamela ghat on river Hooghly in East Midnapore's Nandigram, capsized during a sudden high tide. The crew of 14 aboard the vessel, Maa Karunamoyee, had been shifting 14 barrels of diesel, each of 200-litre capacity, to fuel the trawler for a new season of hilsa fishing from June 15. Sources said the barrels caused the vessel to lose balance. Nine men on board jumped out and swam to safety, one more was rescued. But trawler driver Pradip Manna, drowned. Three fishermen, Rupesh Khanra, Kashinath Sheeth and Bistupada Maity, have eluded rescue teams so far. Civil defence and coast guard personnel were pressed into rescue operations at daybreak on Sunday, but the search for the three missing fishermen was unsuccessful till sundown.

One of the rescue personnel said that the lifeless body of the driver, Manna, was recovered soon after the incident. The body was then sent to Contai subdivisional hospital in East Midnapore on Sunday for a post mortem. District authorities explained that the fishermen, all of whom hailed from Marisda in Contai, had been making preparations to start fishing, particularly hilsa, starting Monday night. "Every year, June 15 marks the yearly cessation of fishing restrictions that start in mid-April in order to allow various breeds of fish, particularly the hilsa, to spawn," said a district official. Sources added that fishermen look forward to June 15 but this time mishap struck before that.

Starting early on Sunday, Haldia deputy magistrate Kishore Biswas and Nandigram BDO Sumita Sengupta supervised the rescue operations at Kendemari Jalpai, on whose banks the Gangamela ghat is located. “We have had no luck in locating the three missing youths yet but we are trying our best,” said Biswas. “Prima facie, it seems the imbalance caused by the barrels of diesel may have been a contributing factor (to the capsizing of the vessel),” he added. Fishing trawlers often remain at sea for days on end before returning to shore with their catch, an equation in which the size of the catch must be able to offset the amount of fuel spent. The surviving fishermen of the Maa Karunamoyee team are upset and anxious. Survivor Dipak Gyne said most of them had begun to unwind after dinner when a ferocious wave struck.

“At that time, most of the diesel barrels were to one side, so we knew immediately that we had to jump out and swim,” he said. Added Gurupada Sit, another survivor: “We had high hopes for 2021 as the last two years have been bad seasons for hilsa, but this (the mishap) has been an unimaginable setback.”

### **West Bengal: More than a century old seaside Sunderban retreat which entertained India’s colonial rulers lost to cyclone Yaas**

<https://www.deccanherald.com/national/east-and-northeast/more-than-a-century-old-seaside-sunderban-retreat-which-entertained-indias-colonial-rulers-lost-to-cyclone-yaas-995899.html>

"A more than a century-old seaside retreat on the southern edge of the tiger-infested Sunderbans, where Indias colonial rulers once wined and dined to the sound of orchestra music has been swallowed by the hungry waves which lashed onto the beaches and forests when cyclone Yaas hit last month. A few broken portions of brick walls defended by Mangrove roots which desperately cling to it is all that remains of the Frasergunj residence a spacious bungalow built by Sir Andrew Fraser, lieutenant governor of Bengal between 1903 and 1908 where Indias high society including the likes of Viceroy Lord George Curzon once danced away their nights to the sound of laughter of their ladies and tinkling of wine glasses, as live orchestras shipped down from Kolkata played in attendance.

The historical bungalow which served as a retreat where the rulers of Bengal entertained the high and mighty, could not withstand the might of the storm surge the cyclone brought on May 26, Namkhana Block Development Officer (BDO) Santanu Singha Thakur said. Sir Andrew Fraser, had finished part of his planned retreat which boasted of a ballroom and a bar for the

entertainment of the then capital of Indias high society, said Debisankar Middya, an archaeologist specialising in coastal Bengal. Fraser, born in the then Bombay Presidency in 1848 had joined the Indian Civil Service in 1871.

He spotted the beach at Narayantala, and decided it was the ideal location for his retreat and probably started building the bungalow before he became the lieutenant governor, the top job in Bengal province, which then included Bihar, Odisha, modern Bangladesh, Assam and Meghalaya, besides West Bengal. Middya told PTI that a golf course had also been laid out by Fraser close to the bungalow. I had seen a remnant of the golf course during a visit, he said. The sea and the weather over the years, had already started running down parts of the historical residence probably built in 1901-02 on the highest dune in the area. The twin blows from Cyclone Amphan which hit the state last year and Yaas which hit the area last month, dealt the final blow to Frasers bungalow. Only a bathroom is still standing, Thakur said. Bricks that had been dislodged from the broken walls were strewn on the ground. The bungalow also had a museum in which stuffed carcasses of hunted animals were probably on display, Middya said.

The archeologist said that Fraser had a larger plan to develop the area, referred to as Mecklenberg Island in contemporary Admiralty charts, and had cleared jungles in most parts of it, constructed roads and embankments, besides trying to set up a post-office and a school there. There was also a plan to develop the area as a health resort for the English elite who ruled India. However, the administration had to abandon the idea due to the huge cost involved in the project, failure to get farmers to settle in the locality and resistance by a small community of local fishermen. The area later came to be known as Fraserganj after the lieutenant governor, but with the sea and high tides lapping hungrily at it, it is difficult to predict for how long even the remains of Frasers dream retreat will stand.

### **West Bengal: Photo Essay: Fishermen in Sunderbans face multiple threats to their livelihood**

<https://www.youthkiawaaz.com/2021/06/in-photos-fishermen-in-sunderbans-face-multiple-threats-to-their-livelihood/>

"The coastline of West Bengal is spread over two districts: South 24-Parganas and East Midnapore. Fishing in West Bengal is also mainly focused on these two districts. About 100 km south of Kolkata in the Kakdwip subdivision of South 24 Parganas lies Sagar island. The island is located within a tidal creek and has a very low elevation. The fisherfolk of the island depends on the waters of Ganga Sagar – where the river Ganges meets the Bay of Bengal – for their livelihood. During the fishing season which lasts from October to February, they set out in mechanized boats every six hours during the high tide. During this time, they barely sleep. Once they return from the waters, their family helps them dry the fish and fish meal tied to wires and laid on nets in their front yards respectively. They live in huts called “khutis” made of hogla leaves during these four months.

The fisherfolk do not own the title to the land where they set up khutis. They live there with permission from the local panchayat. In 2014, chief minister Mamata Banerjee had said that the seafront would be developed for tourism. “The local fishermen under Sagar Sangam Matsojibi Khuti Samabyay Samiti led an agitation against the move and delivered a petition with a set of demands to the chief minister,” says Abdar Mallik, secretary of Sagar Marine Matsya Khuti Cooperative Society. “The chief minister had assured them that they would not be evicted without being given an alternative piece of land,” he adds. Trawlers have wreaked havoc on the livelihoods of small fishermen in Sagar Island and the marine environment.

The bottom trawlers destroy the plants on the seafloor. They chose certain species of fish from the catch and throw out the rest of the dead fishes polluting the sea. The trawler nets are such that even if the mesh size is big when they are pulled, the mesh closes completely, trapping even the smallest of fishes. Sea bottom trawling at the mouth of the sea is destroying marine ecology and eating into the catch of small fishermen. “Local small fishermen organizations have filed petitions to the state government to rein in the trawlers. But the trawlers always find a way around the laws,” says Mallik. Several state and district-level organizations have been constituted to protect the interests of small-scale fishermen. The Dakhinbongo Matsojibi Forum and Sagar Marine Matsya Khuti Cooperative Society are two of the more influential organizations advocating for the rights of fisherfolk in West Bengal and Sagar respectively. There are different categories of small-scale fishermen. Some have motorized boats; others use the dinghy or a small boat. They fish in the shallow seas, in the inland waters, estuaries, lakes, and reservoirs. All these fishermen cater to the local market.

These small-scale fishermen supply 80 percent of the fish that is available in markets across Bengal. Bengal’s small-scale fisheries have an estimated annual turnover of Rs 500 crore. Due to a lack of micro-financing opportunities from the government, the fishermen often take loans from either money lenders or middlemen to repair boats, nets, etc. If they take loans from the moneylender, they can sell off their catch and pay off their debt. But there is always a risk that an insufficient catch or falling market prices might end up landing them in the debt trap. So, they prefer taking a lump sum loan from the middlemen. In return, these middlemen are entitled to all their catches. The deep-sea fishing ban was introduced in 2015 by the department of fisheries, to allow uninterrupted breeding and growth of fish. Every year, fishing activity is banned between April 15 and June 14 on the east coast.

A special ban is imposed from 15 September to 24 October to allow for the undisturbed breeding of Hilsa. Hilsa fishing is labor and fuel-intensive. It needs different nets, bigger boats. The expenses can go up to two lakhs. Only gill nets are used to catch Hilsa. “The Savings Cum Relief scheme was started by the Central government of India in the ’90s to compensate small fishermen for the losses incurred during the fishing ban period.

According to the scheme, the central government, state government, and the beneficiary would contribute one-third of the total relief amount throughout the fishing period and get the returns during the non-fishing period,” says Pradip Chatterjee, president, Dakshinbanga Matsojibi Forum (DMF). At present, the total amount is Rs. 4,500. “It was an occupational entitlement and the central government later made the scheme available only for the below poverty line (BPL) category i.e., only BPL fishermen will be entitled to benefit from the scheme,” says Chatterjee. During the fishing season, the whole family shifts to the Khutis on the beach. Children commute to school from their villages. “The Dakshinbongo Matsojibi Forum opposed it as most fishermen are far from being rich,” he adds. During the offseason, the fishermen do odd jobs, get employment in government schemes, work in construction or brick kilns. During the fishing season, one fisher folk can earn about Rs 10,000 a month. Off-season earnings vary between Rs 5,000 to 7,000.

### **West Bengal: CM to hold review meets on coastal management plan**

<http://www.millenniumpost.in/kolkata/cm-to-hold-review-meet-on-coastal-management-plan-442557>

"The Mamata Banerjee government is coming up with a robust plan of action to protect the coastal areas using the natural flora and fauna when almost every year a cyclone is causing havoc to the state. Chief Minister Mamata Banerjee will be holding a high-level meeting at Nabanna on Monday for a detailed discussion on the coastal management plan and to take a stock of the ongoing restoration work and Duare Tran outreach programme after the devastation caused by Cyclone Yaas mainly in East Midnapore, North and South 24-Parganas. Banerjee has already announced the ""Prakritik Durjoge Prokriti Sahay"" project to take steps in a wholistic approach to save the coastal regions of the state when cyclone has turned to a natural phenomenon every year.

Different concerned departments including the Environment department, Forest department and the Irrigation and Waterways department were directed to look into the research carried out globally to protect embankments using flora and fauna. A committee comprising experts from different related fields including environment, forest and engineers would be set up to propose steps needed to be taken in this regard. Meanwhile, the inter ministerial central team (IMCT) comprising Joint Secretary of Home Ministry SK Shahi, Director of Directorate of Jute Development Narender Kumar, Assistant Executive engineer of Ministry of Road Transport and Highways in Kolkata Sanjukta Kanjilal, US (MGNREGA) of Rural Development Ministry Deep Shekhar Singhal, Executive Engineer in Kolkata of Power Ministry Alikpanth De, Deputy Commissioner of Fisheries Rajiv Pratap Dubey and Consultant (FCD) of Department of

Expenditure RB Kaul have reached Kolkata on Sunday evening to assess the damage caused by Cyclone Yaas. They will get divided into two teams.

On Monday, one team will visit Patharpratima and Gosaba after taking chopper from Dumurjola while the second team will go to Digha by road. On Tuesday, one team will again visit Digha while the other will take stock of the damages caused at Godkhali. Members of the IMCT will hold a meeting with top brass of the state government's Disaster Management and Finance department at Nabanna on Wednesday before leaving for Delhi.

### **Maharashtra, Odisha and West Bengal: Why mangroves Matter**

<https://www.thehindu.com/children/why-mangroves-matter/article34743502.ece>

"Last month, India was hit by back-to-back cyclones. While cyclone Tauktae formed in the Arabian Sea and affected coastal districts in Kerala, Karnataka, Goa, Maharashtra and Gujarat, cyclone Yaas formed in the Bay of Bengal and ravaged parts of Odisha and West Bengal. Scientists highlighted the impact of climate change in the intensification and frequency of tropical storms that hit India. And they also brought our attention to the role played by mangrove forests in reducing the impact in Odisha, West Bengal and Mumbai. Although there were losses to lives and property, it was highlighted by experts that mangroves safeguarded people and the inland against the severe storm surges of the cyclones.

While Mumbai has a mangrove cover of 66 sq km, Odisha and West Bengal boast luxuriant mangrove cover along the Bhitarkanika National Park in Kendrapara district and the Sundarbans respectively. What are mangrove forests and why are they considered to be beneficial to coastal communities? Let's find out in this Five Ws and One H. What is a mangrove? A mangrove is a small tree or shrub that grows along coastlines, taking root in salty sediments, often underwater. The word 'mangrove' may refer to the habitat as a whole or to the trees and shrubs in the mangrove swamp. Mangroves are flowering trees, belonging to the families Rhizophoraceae, Acanthaceae, Lythraceae, Combretaceae, and Arecaceae. The upper trunk, including the branches and leaves, of a mangrove tree lives completely above the waterline, while the lower trunk and the large root system are partly covered by seawater.

Many species have roots diverging from stems and branches and penetrating the soil some distance away from the main stem (like banyan trees). What are some of the special features of mangroves?

- Saline environment: A speciality of mangroves is that they can survive under extreme hostile environment such as high salt and low oxygen conditions. Mangrove trees contain a complex salt filtration system and complex root system to cope with salt water immersion and wave action.

The roots filter out 90% of the salt they come into contact with in the saline and brackish water they call home. Some species of mangrove excrete salt through glands in their leaves.

- Low oxygen: Underground tissue of any plant needs oxygen for respiration. But in a mangrove environment, the oxygen in soil is limited or nil. Hence the mangrove root system absorbs oxygen from the atmosphere. Mangroves have special roots for this purpose called breathing roots or pneumatophores. These roots have numerous pores through which oxygen enters the underground tissues.

- Mangroves, like desert plants, store fresh water in thick succulent leaves. A waxy coating on the leaves seals in water and minimises evaporation.

- Mangroves are viviparous – their seeds germinate while still attached to the parent tree. Once germinated, the seedling grows into a propagule. The mature propagule then drops into the water and gets transported to a different spot, eventually taking root in a solid ground. How do mangrove forests help protect against strong cyclones?

- Mangrove forests act as natural barriers against storm surge, coastal flooding and sea level rise. Their intricate root system stabilises the coastline, reducing erosion from storm surges. Together with the tree trunks, they work like speed-breakers to slow down the tides.

- They protect shorelines from damaging winds and waves. A series of studies in the early 2000s discovered that mangroves with an average height of 6-10 metres could shorten a cyclone's waves by 60%.

- Mangroves also help prevent erosion by stabilising sediments with their tangled root systems.

- A 2013 study of mangroves in Florida estimated that a mangrove forest could reduce the effects of a Category 5 storm to the intensity and effects of a Category 3 storm. What are the other benefits to the environment?

- Mangrove thickets maintain water quality by filtering pollutants and trapping sediments originating from land.

- They provide habitat for a diverse array of terrestrial organisms. Their branches provide homes for lizards, snakes and nesting birds. Many species of coastal and offshore fish and shellfish rely exclusively on mangroves as their breeding, spawning, and hatching grounds.
- Mangroves also have a big impact on climate. Mangroves are powerhouses when it comes to carbon storage. Studies indicate that mangroves can sequester (lock away) greater amount of carbon than other trees in the peat soil beneath. They store this carbon for thousands of years.
- Many people living in and around mangroves depend on them for their livelihood. The trees are a source of wood for construction and fuel. The ecosystem provides local fishermen with a rich supply of fish, crabs and shellfish. The ecosystem also supports tourism. Where are mangrove ecosystems found?

Mangroves can be found in over 118 countries and territories in the tropical and subtropical regions of the world. Asia has the largest coverage of the world's mangroves, followed by Africa, North and Central America, Oceania and South America. Approximately 75% of the world's mangrove forests are found in just 15 countries. In India: The deltas of the Ganges, Mahanadi, Krishna, Godavari, and the Cauvery rivers contain mangrove forests. The backwaters in Kerala have a high density of mangrove forest. The Sundarbans in West Bengal is the largest mangrove region in the world and a UNESCO World Heritage Site. It spans from the Hooghly River in West Bengal to the Baleswar River in Bangladesh.

The Bhitarkanika mangrove system in Odisha is India's second largest mangrove forest. Pichavaram in Tamil Nadu has a vast expanse of water covered with mangrove forests. It is home to many aquatic bird species. What are the threats to mangroves? Scientists estimate that at least one third of all mangrove forests has been lost during the last few decades. Coastal development, including construction of shrimp farms, hotels, and other structures, is the primary threat to mangroves. Mangrove forests are cleared to make room for agricultural land and human settlements.

- Mangrove trees are used for firewood, construction wood, charcoal production, and animal fodder. In some parts of the world, there has been overharvesting which is no longer sustainable.
- Overfishing, pollution, and rising sea levels are the other threats to mangrove forests and their ecosystem.

### **West Bengal: Cyclone Resilient Habitat Reconstruction Policy**

"Greetings from Dakshinbanga Matsyajibi Forum, the largest union of small scale fish workers of West Bengal. We appreciate the efforts taken by you and the Government of West Bengal in addressing the huge task of habitat reconstruction in consequence of widespread damage inflicted by cyclone Amphan. We wish to propose the following policy changes in Habitat Reconstruction: It is quite evident that South Bengal, especially the coastal and near

coastal areas will have to learn to live with intermittent cyclones. Global warming induced climatic changes have made the recurrence of cyclones in the Bay of Bengal region more frequent in number and more severe in intensity. We need Cyclone Resilient Habitat Reconstruction Policy that would include:

- i. Houses with concrete roof and high base and designed to withstand the gust of cyclone;
- ii. Drinking water supply system designed to cope with inundation and power cut;
- iii. Drainage system to quickly drain out cyclone driven storm water. The most important issue is to change Government policy on construction of houses for the people in coastal or near coastal areas. The houses built for people residing in coastal or near coastal areas under schemes like Indira Awas Yojana, Pradhan Mantri Awas Yojana, Gitanjali Awas Yojana should have concrete roofing. The houses already built with cement corrugated sheet roofing or tin shades should be converted to concrete roofing. The people need to be offered with proper schemes for such conversion or reconstruction. Dakshinbanga Matsyajibi Forum (DMF) also requests you to ensure proper utilization of public money for housing schemes. It pains us to come across a common allegation that 20% to 30% of the money allotted for peoples' housing is misappropriated. This malpractice should be stopped at any cost.

**West Bengal: 'People of Sunderbans didn't die in Cyclone Yaas, They might die of poverty'**

<https://thewire.in/environment/sunderbans-cyclone-yaas-loss-of-homes-livelihood-farmlands-covid-19>

"Cyclones are now routine in the Sunderbans. After Amphan caused widespread damage last year, Yaas has led to more damage. "People didn't die this time in the cyclone, but they might die of poverty. We lost all our means of livelihood. How can we survive this way?" said Gourhari Manna of Sridharnagar of L-Plot, one of the islands in Sundarban located at the lap of Bay of Bengal. "They won't let us live. Amphan last year damaged everything, and within a year Yaas came to damage us even more," he said. The Sundarbans delta is located around 100 kilometres from Kolkata. To get there from the state capital, it takes at least four hours by car and then boat. The Wire visited the Patharpratima block on Sunday. This block was one of the worst affected of the Sundarbans islands during the course of cyclone Yaas last week.

Loss of livelihood Days before the cyclone hit the island, the government evacuated over 1,000 families of Sridharnagar gram panchayat in Patharpratima block. When The Wire visited the island, some families said they had gone back to their homes only to return to the flood centres at night because of high tides. Five days after the landfall of the cyclone, hundreds of houses are still under water. The base of many houses got washed away as the remaining structure stands on bamboo. Poritosh Jana, 53, lost four bighas (21,404 square metres) of farmland, which he shared

with his younger brother. Jana is now living with his family in the local school, which is being used as a shelter house.

“Every year this happens. God doesn’t want us to live. Our farmland is completely destroyed because of saline water. Anyway there is hardly any income because of COVID-19 lockdown. Now, there will be no income,” said Jana. While cyclones are a regular occurrence in the Bay of Bengal, they are becoming more frequent and intense, making the life of islanders more vulnerable. A year ago, super cyclone Amphan wreaked havoc in Bengal, Sundarbans, parts of North 24 Parganas and Kolkata. Even before these islanders could rebuild their lives from the previous one, cyclone Yaas hit them again. We took a short boat ride to Banashyam Nagar gram panchayat, another island under the Patharpratima block. This island is one of the most affected areas of this administrative block. Around 14,000 bighas (37,45,850 square metres) of land was under water. Over 3,000 feet of river embankments were breached in four villages which comprise the gram panchayat. Krishna Pramanik, 41, a resident of Gangapur village said, “River embankments started breaking in different places. And in no time salt water flooded our house and land. Water level rose to over 16-17 feet. Our house is completely damaged. Our farmland is gone because of salt water. What will we do now? How long can we live like this?” Baikunthapur Tarun Sangha (BTS), a local NGO working in the riverine areas of Sundarbans, is running a community kitchen in Gangapur village. Pramanik said the NGO has been providing them with food for the past three days.

“They give food during the afternoon, some of which we save for the night. Panchayat people are providing water.” “People are affected very badly this time. Although the immediate impact is similar to any cyclone that hit Sundarbans previously, the long time impact is severe this time. This cyclone snatched their livelihood,” said Susanta Giri, secretary of the NGO. Over 80 families are living on the embankments which separate the village from Jagaddal river. The area is known as Aila Badh. Shyamal Bera, who is living with his family of five in a makeshift tent, said,

“We have nowhere to go. Our house is under water. We are staying on this embankment because it is at such a height that water won’t come to this level. All families here are making food together with whatever we are left with.” Pramanik’s neighbour Basudeb Mondal owns two bighas (535 square metres) of farmland on which he grows paddy, and one mid-size pond which now looks like it’s a part of the river. Mondal said, “Cyclone, coronavirus, lockdown and again cyclone, tell me how will poor people like us survive? Our lands were destroyed. All fish are dead. What will we eat? Relief will come for 15 days, one month. What will happen after that?” said Mondal. Speaking to The Wire, a local school teacher, Satyaranjan Bauri of Sridharnagar Sailendra Bidyapith said, “In my lifetime, I have never seen this rise in the water level. Lands located more than five to six kilometres away from the river are underwater. Saltwater has inundated all the farmland in the village which is our biggest concern.

We can't farm on this land. People had ducks, hens, and everything is gone now. Fishes are lying dead in ponds. Means of livelihood are destroyed. Villagers will suffer for the longest time." Kamal Kanti Sen, former co-ordinator of tropical soil biology and fertility management at Jawaharlal Nehru University and a noted expert on the Sundarbans, told *The Wire*, "After Alia, life paused on the island. I fear a similar situation this time, or even worse. A major humanitarian crisis is in the offing; hectares of land will remain uncultivated for the next few years." Cyclone Yaas may not be as powerful as cyclone Amphan in terms of destruction. There were not many dramatic photographs like blown roofs or wrecked houses like in 2020. But the less visibly alluring, saline water inundation of ponds and large stretches of farmland in the Sundarbans is much more devastating for the islanders and has severe long-term effects.

Villages under water another short boat ride from Banashyam Nagar took us to Birat ferry ghat in Achintanagar. Around 12 km north, we reached Kuemuri village under the Herambagopalpur gram panchayat, another severely affected area due to the storm surge triggered by the cyclone. We were welcomed by the stinking smell of dead fish, floating on inundated ponds and farmlands. As we went forward, we saw villages under water. The colour of stagnant water also changed from green to dark brown. Dinanath Pike's mud house washed away on May 26 afternoon, since then, he and his family took shelter in a nearby school. Pike had around 1.5 bigha (401 square metres) of farmland and a small pond, which are now underwater.

"My house was damaged last year. To repair the house, I took a loan of Rs 25,000 from mahajan (loan shark) and used Rs 10,000 that the government gave. Even before I could pay back the amount, the house was damaged again. Tell me what is the point of living a life like this? We will have to live this way until we die. I wish we better die than living like this," said Pike, breaking down. Lands as far as seven kilometres inside of Nagchara river, a branch of Thakuran River, were flooded. A stretch of the road from Kuemuri Bazar to Bharatjanani Mor was completely under water and looked like one vast lake. Shukumar Hati, vice-president of Herambagopalpur gram panchayat said,

"There are four villages under this panchayat, and all four are under water now. People here won't be able to farm in the coming years. Fish, hen, duck – all are dead. People don't have any source of income now. Livelihood of people is the casualty." Hati explained that last year after October, there was no rain in Sunderbans, which is why most villagers could farm during the winter. "Paddy, which was sown in the later half of the year, didn't yield as there was no rain. Farmers' income was badly hit," Hati said. Santosh Mallick, 55, has a large pond of five bighas (1,337 square metres) which is currently under water, and all the fish which he cultivated for the past four months are dead. Mallick considers himself lucky as he has a pucca house with a concrete roof. Three of his neighbours took shelter in his house.

"I had invested close to Rs 5 lakh on fishing. Now everything is gone. See, all the dead are floating," Mallick said, as he pointed toward his pond. 'No fear of the virus as cyclone and

hunger will kill us' a flood relief centre near Bharatjanani MOR is nearly full. When asked about COVID-19, Khokon Maity, another islander who's taking shelter at the relief centre, said, "We don't fear the coronavirus anymore. Before coronavirus can do anything, cyclones and hunger will kill us." Maity confirmed that the panchayat has been providing them water and food since the cyclone struck. Local NGO Purba Chintamonipur Chetana Sangha is supplying drinking water and food to people who lost their houses in the area. Subimal Bera, founding member of the NGO, said they are also conducting surveys to estimate damages caused due to the cyclone and preparing a list of those who need immediate relief.

In Purbo Dwarakapur village of Lakshmi Janardhanpur gram panchayat, we were greeted with the same scenario – smell of dead fish and scores of houses under water. Cyclones and floods have become a part of life for these villagers – the devastation barely shocks them anymore. Their only concern is sustenance. Gouri Mistry, 37, said, "We haven't gotten any help from the government till now. Some people came and gave me a relief pack (1 kg of flattened rice and two packs of biscuit). This is our fate, we have accepted it. We will somehow survive this. Our concern is how will we survive the whole year, if we can't farm? How will we survive after all our fishes are gone?" As there was no rainfall for eight months, the soil cracked in the heat. Now that the land is inundated with saline water, in likelihood it will penetrate beyond the surface. The process of desalination is expensive and laborious.

### **West Bengal: Price rises as sea water in ponds kills fish**

<https://timesofindia.indiatimes.com/city/kolkata/price-rises-as-sea-water-in-ponds-kills-fish/articleshow/83126304.cms>

"After distress sale of washed-away fish from fisheries (bheris) in the aftermath of cyclone Yaas, prices have started soaring as supplies dipped in the market. While fish consignments from Andhra Pradesh are yet to be restored to pre-Yaas level, ingress of saline water in sweet water ponds in South 24 Parganas and East Midnapore, which killed a large number of fish, dried up local supplies. Traders said the demand-supply gap was likely to widen in coming days. Markets in the city saw a dearth of fish on Monday, with demand far exceeding the supply. The prices suddenly jumped by Rs 100-150 per kg across varieties.

"It is mainly because of the shortage. The supply line from Andhra Pradesh is facing problems. The series of diesel price rises also hit transportation and escalated prices," said Amar Das, a fish vendor at Lake Market. Buyers had to shell out double the money for the Bengali household staple. "I had difficulty finding small variety fish. Finally, I paid double the price for what I got after much effort," said Gourango Sarkar, a retired central government employee at Parnashree. Preeti Ghosh also faced similar problem at Sinthee Market, where she complained, "fresh fish had vanished". Explaining the "disappearing fresh fish", Bijon Maity, secretary of Fishermen's Association, Kakdwip, said,

“So far, the fish from ponds and tanks catered to 70% of the demand, while 30% was met by sea fish. But after saline water flowed into ponds during the cyclone and the day after, lakhs of fish died, changing the scene. Now, there is a serious scarcity and the demand-supply gap will widen further.” “ It is going to take months to drain saline water out of ponds and let rain water fill the places up. Only then, can fish be cultivated there. The crisis will persist till then,” said Raghu Gayen, whose fishery in Phalta has been washed away. Nine of 18 ponds belonging to Tarasundor Haldar, a fish cultivator at Namkhana, have been washed away. “I have lost a few lakhs of fresh fish. Even during Amphan, I had managed to safeguard all my ponds. At least 100 families are dependent on this fishery,” he said.

**West Bengal: Dead fish, flooded fields, submerged homes in cyclone-ravaged Sunderbans, fight for life and livelihood**

<https://indianexpress.com/article/india/dead-fish-flooded-fields-submerged-homes-in-cyclone-ravaged-sunderbans-7339434/>

“Why is God so angry with us?” asked Manik Pradhan, pointing to the vast tracts of cropland inundated with dead fish floating around, as nearby ponds have overflowed with saline water breaching the embankments. Picking up a large dead ‘catla’ fish, which would have fetched anywhere between Rs 1,000-1,500 in the wholesale markets of Kolkata, Pronab Mondal said, “Our condition is also like this fish, it died as saline water entered the pond and we are as good as dead after back-to-back disasters.

First, it was cyclone Amphan, then COVID and now, Yaas.” Jana and Mondal are among thousands of people living in the Namkhana block — one of the worst-affected in the Sunderbans region in West Bengal’s South 24 Parganas district who have lost their homes and livelihoods due to the cyclone. Jana, who lives in the Narayanpur village, was planning to cast the roof of his house this summer with the grant provided by the government. “I started working on the house last year, completed the structure and got the first tranche of Rs 60,000. A few weeks back, I bought the construction materials and hoped to cast the roof but then the cyclone hit. Everything got washed away,” he said.

“I planted brinjal and sponge gourd this season. Everything is destroyed. I don’t know what will we do for the next one year,” he said, trying hard to hold back his tears. The highway, which leads to Namkhana and ends at the beach in Bakkhali, was lined with trucks and pick-up vans that came from far and wide with relief materials — the efforts led mostly by community clubs. Tapas Banerjee was part of one such group that came with dry food and other relief materials all the way from Asansol, around 300 km away. “We collected relief materials from the people of our area in Burnpur and came here. As part of Nababikash Club, we try to help people throughout the year. Besides, we have given Rs 1 lakh to the state government for the relief efforts,” he said, managing a large queue of people that had gathered for packets of puffed rice, flattened rice and baby food, among others.

“At first, we went to Mousuni Island. What we saw there was horrific — nothing was left. The tourist camps have been swept away. Seawater entered the water bodies where prawns were cultivated, killing all the produce. “Don’t really know how these people will survive,” Banerjee said, as someone nearby prompted, “We bought 15 kg prawn on our way back at Rs 150 a kg. We couldn’t resist, prawns of this size would usually cost Rs 600-650 per kg.” Mousuni Island, which has become a popular camping destination over the years, is the most-affected of the seven panchayat areas in Namkhana, Block Development Officer Shantanu Singha Thakur told PTI. “The population of the block is around 2 lakh as per the 2011 Census and almost 50 per cent of the population is affected. More than the cyclone, the astronomical tide caused by the full moon that day has impacted the area.

It is now under control and we are working round the clock,” he said. “We shifted 62,000 people to rescue centres ahead of the cyclone following all COVID protocols. We are operating 162 community kitchens at present to provide cooked food twice a day, and also giving them snacks,” Thakur said. Thakur’s office, the field station for the rescue and relief efforts, was also under water till two days back. Most parts of the complex were still inundated with officers often stumbling upon fish such as ‘koi’ and ‘shoal’.

“In the last one week, we barely had time to make out whether it’s day or night outside. We have been working, eating and napping here,” said an officer, pointing to the makeshift bed in his cabin. “We are trying to reach out to people with all the help as fast as possible. Hopefully, the situation will improve as ‘Mora Kotal’ or low tidal variation has set in,” he said, refusing to be named as he was not authorised to speak to the media. Overhearing the conversation, a man who worked at the BDO office said, “You should have asked him why is there such a situation every time? Why couldn’t the embankments be made of concrete? “They will build mud embankments every year and those will be breached.

What is the use? We will continue to live like this throughout our lives it seems,” he said before rushing out to help an officer with some work. Outside the complex, a truck stood with a machine that was churning out drinking water pouches. If operated from 7 am to 11 pm, it can produce 80-90,000 pouches of 200 ml each. It has come all the way from Burdwan, said the supervisor as he kept a log and prodded the workers to ensure zero wastage. Besides, 2,000-litre tankers are being sent to the villages on motor-operated vans as a drinking water crisis has engulfed the area. Shibshankar Mondal, who drives one such van, said though the job was painstaking, it gave him some satisfaction that he was helping people who are facing such hardships. “I live in Kakdwip block and my house is also under water. But, I could manage to save my van,” said Mondal, who otherwise ferries people.

“These tanks are used during the Gangasagar Mela, and were lying in the store. It’s good that someone thought about using it now,” he said, adding that he was being paid Rs 1,500 per day along with sufficient petrol — a boon given that he earned Rs 700-800 a day earlier, but that

stopped owing to the lockdown. Thakur said drinking water was being provided to 60-70 per cent of the area, as the tube wells were damaged due to the saline water. “I won’t say that allegations over the embankments are absolutely false. The work is done by the Irrigation Department. We have raised the issue with them. The fact is, a cyclone has hit the area every six months in the last three years; so we couldn’t get the minimum time for implementing a long-term solution,” he said. “However, the department has been told that new embankments should sustain for long.

Also, apart from the breaches, the tidal waves were so huge that water overflowed into the villages. The tidal waves were around 12-13 feet high, and to deal with that, we need to build embankments as high as the Great Wall of China,” the BDO said. Towards the end of the highway at Bakkhali sea beach, around 25 km away, a few shops selling cold drinks and cigarettes had mounds of sand to fend with. “The sea waves almost touched the shops one kilometre away. See the mounds of sand inside the fridge. I don’t know how to clean this, and the machine has now stopped working. “I invested Rs 20,000 for the fridge. If it becomes non-functional, what will I do?” said one of the shopkeepers, as he got busy with a group from Bhangore that went to the beach to bath, after distributing relief materials.

### **Odisha & West Bengal: PM reviews damage due to cyclone Yaas**

[https://www.pmindia.gov.in/en/news\\_updates/pm-reviews-damage-due-to-cyclone-yaas/?comment=disable](https://www.pmindia.gov.in/en/news_updates/pm-reviews-damage-due-to-cyclone-yaas/?comment=disable)

"On Friday, 28th May 2021, Prime Minister Shri Narendra Modi visited Odisha & West Bengal to review the situation arising out of Cyclone Yaas. He undertook an aerial survey of the cyclone affected areas in Bhadrak and Baleswar districts of Odisha, and Purba Medinipur in West Bengal. In Bhubaneswar, the Prime Minister chaired a meeting to review the relief and rehabilitation measures being undertaken. The Prime Minister was briefed that maximum damage due to Cyclone Yaas happened in Odisha, and some parts of West Bengal and Jharkhand have also been affected. Shri Modi announced a financial assistance of Rs 1000 crore for immediate relief activities. Rs 500 crore would be immediately given to Odisha. Another Rs 500 crores has been announced for West Bengal and Jharkhand, which will be released on the basis of the damage.

The Union Government will deploy an Inter-Ministerial Team to visit the states to assess the extent of damage, based on which further assistance will be given. Prime Minister assured the people of Odisha, West Bengal and Jharkhand that the Union Government would closely work with the State Governments at this difficult time, extend all possible assistance for restoration and rebuilding of the infrastructure in the affected areas. Prime Minister expressed his complete solidarity with all those who suffered due to the cyclone and expressed deep sorrow to the families who have lost their kin during the calamity. He announced an ex-gratia of Rs. 2 lakh to

the next of kin of the deceased and Rs. 50,000 to the seriously injured in the cyclone. PM said that we have to continue the focus towards more scientific management of disasters. As the frequency and impact of cyclonic systems are increasing in the Arabian Sea and the Bay of Bengal, communication systems, mitigation efforts and preparedness have to undergo a major change. He also spoke about the importance of building trust among people for better cooperation in relief efforts. PM Modi appreciated the preparedness and disaster management activities by the Government of Odisha which has resulted in minimal loss of lives. He also noted that the state has embarked on long term mitigation efforts for dealing with such natural disasters. He also mentioned that Disaster Mitigation has been given emphasis by the Finance Commission too by provisioning for mitigation funds to the tune of Rs. 30,000 crore.

### **West Bengal: Huge swathes of farm land swamped in eastern India after cyclone**

<https://www.reuters.com/world/india/huge-swathes-farm-land-swamped-eastern-india-after-cyclone-2021-05-28/>

"More than 96,000 hectares (237,221 acres) of agricultural land has been inundated in parts of an eastern Indian state hit by a powerful storm this week, officials said on Friday, a year after the coastal region was ravaged by a super cyclone. Cyclone Yaas swept in from the Bay of Bengal on Wednesday, triggering storm surges that broke through embankments in West Bengal state, particularly hitting hard the ecologically sensitive Sundarbans delta that stretches into neighbouring Bangladesh. Initial assessment by the West Bengal government showed that water had entered around 96,650 hectares of land that had standing crops, a state official said. "Fresh flooding were reported from many areas during high tides as the embankments have been left with gaping holes," West Bengal's fisheries minister, Akhil Giri, told Reuters. In the Sundarbans, still reeling from the damage wrecked by Cyclone Amphan last year, residents said wide swathes of farm land and fresh water ponds used for small-scale fisheries had been inundated.

"The area is stinking with rotten fish and movement has become extremely difficult because of stagnant water," said Kanai Halder, a resident of Raidighi in the Sundarbans, where spurs and dykes meant to hold back flood waters have been damaged. With climate change pushing up sea surface temperatures, the cyclonic storms that barrel in from the Bay of Bengal have become fiercer and more frequent, particularly in the last decade, according to researchers. read more Halder, speaking to Reuters by telephone, said the damage caused by Yaas appeared more significant compared with last year's storm, because of the scale of sea water ingress, which often renders farm land temporarily unfit for cultivation. Indian Prime Minister Narendra Modi on Friday surveyed areas hit by the cyclone in West Bengal and neighbouring Odisha state, which was directly in the path of the storm but suffered less damage. "All possible assistance

will be provided for the damage caused by Cyclone Yaas," Modi said.

### **West Bengal: Cyclone Yaas blow to Sunderbans migrants**

<https://www.telegraphindia.com/west-bengal/calcutta/cyclone-yaas-blow-to-sunderbans-migrants/cid/1817094>

"Thousands of migrant labourers have come back to the Sunderbans since 2020, most of them during the lockdown last year and some following the onset of the second wave of Covid infections. These people had their incomes drastically reduced but they somehow managed to make ends meet by farming paddy, vegetables or fish. The inundation of vast swathes of the mangrove belt, following a storm surge coinciding with high tide during the landfall of Cyclone Yaas, has posed a livelihood challenge to these people once again. Rising salinity would make many farmlands and water bodies unproductive for at least a couple of years, said residents. They know from first-hand experience. Cyclone Aila had hit the coast in May 2009.

The invasion of salt water had left vast areas of farmland infertile for five years. Alok Shikari, a resident of Purba Sridharpur village in Mathurapur II block, used to work as a mason in Kerala's Kozhikode. He came back during the lockdown last year and has not gone back since. His family did not own any land and the 34-year-old was working on another villager's farmland. In Kerala, Shikari worked under a contractor who gave him Rs 600 for each day's work. He used to get 25 days' work a month on an average. Back home, the daily wage was around Rs 350. "My income had come down drastically. But we got two meals a day. Every other day, we caught some fish from a village pond. But now, everything has been destroyed. We are staring at starvation," said Shikari, who lives with his mother, wife and two children.

The swelling Thakuran river flooded his village on May 26 morning, when Yaas was making landfall in Odisha. Rajkumar Mondal, another resident of the same village, used to work at a toothbrush manufacturing unit in Kancheepuram district of Tamil Nadu. He had returned home during the lockdown last year but went back to the southern state before winter. In late April, he came back again because he "sensed" that more curbs would be enforced to contain the spread of the virus. Coming back in 2020 was extremely difficult and he did not want a rerun. Back home, Mondal cultivated seasonal vegetables like okra and pointed gourd and sold them at a wholesale market. He made "much less" money than he did at the factory.

"With the land flooded, I will have to try and move out for work again, risking my life against the virus," said Mondal. Though Yaas did not leave a trail of destruction like Cyclone Amphan did last year, the long-term damage to embankments has been severe this time, officials said. The embankments bore the brunt of the cyclone this time because of an unprecedented high storm surge. Based on preliminary assessment on Thursday, irrigation department officials had said nearly 156km of river embankments in four districts — East Midnapore, Howrah, North and

South 24-Parganas — were either breached or damaged. Some 55 embankments were damaged in the Basirhat sub-division of the Sunderbans in North 24-Parganas, said an official.

“At least 50 embankments were breached in the areas that we work in,” said Sankar Halder, the founder of an NGO called Mukti that works in a dozen blocks in the Sunderbans. Since Wednesday, tens of thousands of people have been dependent on relief materials from NGOs like Mukti. “If salt water penetrates beneath the surface, it takes more than a couple of years to get the same yield from that farm land. The process of desalination is expensive and laborious. These people can’t do that without government support. With the surge in Covid-19 numbers, any logistical support is doubly difficult,” said Halder. Desalination is a distant dream for Animesh Barik, a resident of Dakshin Kashipur in Patharpratima. He was gearing up to sow the seeds of aman rice in June. But now, his land stands submerged in salt water. Barik thinks he has no other option than going back to Mumbai — where he worked at a plastic cap making unit — as soon as possible. “Our lives will once again shift between two threats — to life and livelihood,” he said.

### **West Bengal: Cyclone Yaas: Crocodile, rare turtle breeding centre inundated in Sunderbans**

[https://www.business-standard.com/article/current-affairs/cyclone-yaas-crocodile-rare-turtle-breeding-centre-inundated-in-sundarbans-121052800039\\_1.html](https://www.business-standard.com/article/current-affairs/cyclone-yaas-crocodile-rare-turtle-breeding-centre-inundated-in-sundarbans-121052800039_1.html)

"Nylon net fencing to prevent tigers from entering human habitations were damaged, breeding centres for crocodiles and Batagur baska - a rare species of turtle were inundated, as Cyclone Yaas has severely damaged the Sunderban Tiger Reserve (STR), an official said on Thursday. The majority of the 40 protection camps used by the forest department personnel in the Sunderbans were also inundated following a downpour induced by the cyclone on Wednesday, Chief Wildlife Warden V K Yadav said. ""Since most of the area is under water now, it is difficult to ascertain actual damage,"" Yadav told PTI. He said that more than 25 km of nylon net fencing is damaged as per a preliminary report from the STR.

""The conservation breeding pool, as well as the isolation pools of Batagur Baska, were submerged, the senior forest official said. He said that four such turtles were rescued, while 35 others have been kept at a secure place in Sajnekhali. There has been damage to Bhagabatur crocodile breeding centre due to submergence, though the 300-odd crocodiles kept there are safe, Yadav said. He said that 25 spotted deer escaped from Bakkhali forest camp and they are now in nearby forests and not in human habitation. Four deer were also rescued from Dulki, Sonagaon, Dayapur and Jhingakhali, a source in the forest department said. Following report of tiger straying into Paikpara, Moipith, Nalgora beat and Raidighi range, the forest department staff reached the spot observed pug marks of fishing cat only. ""Our teams are in touch with villagers and the Joint Forest Management Committee to keep watch on straying of any tiger,"" Yadav

said. As per a recent survey by the department, the number of Royal Bengal Tigers in the Sunderbans is 96. The forest department source said that 17 camps in the STR area were inundated and the personnel were facing scarcity of drinking water as saline water entered camps following breaching of embankments. The camps have no power as the solar panels along with other equipment were damaged. The STR is one of the first nine Tiger Reserves declared under the Project Tiger scheme in 1973. The STR is home to a large number of endangered and globally threatened species such as tiger, fishing cat, estuarine crocodile, Gangetic and Irrawady Dolphin, king cobra and water monitor lizard.

**West Bengal: Cyclone Yaas: One crore affected, three lakh houses damaged, says Mamata Banerjee**

<https://www.indiatoday.in/india/story/cyclone-yaas-one-crore-affected-three-lakh-houses-damaged-mamata-banerjee-1807380-2021-05-27>

"West Bengal chief minister Mamata Banerjee on Tuesday said that one crore people have been affected in the state due to Cyclone 'Yaas'. The chief minister added that three lakh houses and 134 embankments were damaged by the impact of the cyclone that whiplashed the country's eastern coasts on Wednesday. While addressing reporters at the state headquarters the CM said that West Bengal was the worst affected because the state also witnessed high tide along with the cyclonic storm. ""At least one crore people were impacted, and three lakh houses and 134 embankments damaged,"" the CM added. As per a PTI report, the CM said that Sandeshkhali, Hindolganj, Hashnabad and Haora in North 24 Parganas and Namkhana, Gosaba, Fraserganj, Kulti, Basanti, Canning and Budge Budge in South 24 Parganas, were the worst affected.

The CM said that apart from the two Parganas, the cyclone wreaked havoc in Digha, Tajpur, Shankarpur, Ramnagar, Kontai, Nandigram, Kolaghat and Uluberia. The state had shifted over 15 lakh people to temporary shelters amid growing concerns over Covid spread. ""We will conduct field surveys to ascertain the actual damage to embankments, government buildings and other structures. The DMs will file a comprehensive report on this. It will take us at least 72 hours to get a clear picture,"" she told PTI. The chief minister said she will conduct an aerial survey of the affected areas in Purba Medinipur, South and North 24-Parganas, Sunderbans and the Digha region on Friday.

“Around 14,000 relief camps are being operated in the state, where 10 lakh tarpaulins, clothes and food materials have been sent,” the Mamata Banerjee. Power Disruption People of 14 of the 23 districts in West Bengal faced electricity outage due to Cyclone Yaas and many sub-stations are under water following heavy rain induced by the storm on Wednesday, West Bengal Power Minister Aroop Biswas said. The minister has asked for a report from the power utilities of the state for a loss assessment. ""A number of sub-stations are under water at present. ""Loss assessment, however, will be done after ground surveys,"" added Biswas. The power minister, however, added that no hospitals in the state faced a power crisis.

## **Jharkhand: After Whiplashing West Bengal & Odisha, Cyclone Yaas weakens into deep depression**

<https://news.abplive.com/news/india/after-whiplashing-west-bengal-and-odisha-cyclone-yaas-weakens-into-deep-depression-over-jharkhand-10-points-1460374>

"The storm has weakened into a deep depression and one more state which could have been severely impacted by the intense storm will now receive moderate to heavy rainfall on Thursday according to IMD. However, cyclone 'Yaas', which whiplashed the country's eastern coasts, dumping heavy rain and damaging houses and farmlands have severely affected West Bengal and Odisha. While Jharkhand is witnessing such intense effects of cyclone for the first time, Cyclone Yaas uprooted lives in Bengal and Odisha. Both the state CMs took immediate steps for relief operation and centre's planning is helping states to overcome the disaster.

1) West Bengal Chief Minister said one crore people were affected in the state due to cyclone 'Yaas'. One person also died ""accidentally"" when he had gone out fishing, she said. ""West Bengal has been the most affected because we also experienced high tide along with the cyclone fury. ""At least one crore people were impacted, and three lakh houses and 134 embankments damaged,"" she told reporters at the state secretariat.

2) Cyclone Yaas that barrelled through coastal Odisha triggering damage of varying degrees spared Bhitarkanika National Park and adjoining hamlets in Kendrapara district with its luxuriant mangrove cover acting as a protective barrier against Nature's fury. An official said that the mangrove forest has withstood the wind velocity of the cyclone yet again. The region has witnessed seven major cyclones in the past two decades including Yaas. Each time, the cyclonic storm has not impacted the national park and the nearby human habitations, said Divisional Forest Officer, Rajnagar Mangrove (wildlife) Forest Division, Bikash Ranjan Dash.

3) Odisha chief minister Naveen Pattnaik has announced seven-day relief for all families of 128 marooned villages of Cyclone Yaas-affected districts. All major roads and 80 per cent electricity supply will be restored for commutation in the next 24 hours.

4) The Regional Meteorological Centre has forecast thunderstorm with lightning and light to moderate rainfall in parts of Kolkata, East and West Medinipur districts of West Bengal in the next 1-2 hours from 6 am today.

5) The IMD said that isolated rain with thunderstorms is possible over east Uttar Pradesh, Jammu & Kashmir and Ladakh, Gujarat, Konkan & Goa, Maharashtra, Marathawada, Chhattisgarh, coastal Andhra Pradesh, Telangana, Tamil Nadu, Puducherry, Karaikal and northern interior Karnataka. Scattered rain with thunderstorms is expected over Bihar and southern interior Karnataka.

6) Despite being hit by Cyclone Yaas, the Odisha government has ensured the uninterrupted supply of liquid medical oxygen (LMO) which is required by several states where the cases of Covid-19 are still high. State government officials said that the uninterrupted supply of LMO was due to proper planning by the government. Speaking to IANS, YK Jethwa, ADG Law and Order of Odisha police said, "Advanced planning was done and standard operating procedure was prepared for ensuring unhindered Oxygen movement, while ensuring the safety of oxygen production centres, tankers, drivers and other staff." Jethwa said that each tanker was moved under close supervision and escort of Odisha Police.

7) Rescue operations are still continuing as many trees and electric poles are uprooted after the cyclone hit areas. Teams, which are deployed on the ground, are removing these uprooted trees from the roads to keep communication lines clear.

8) The Indian Army rescued around 700 people marooned at different places in West Bengal's East Midnapore district, which bore the brunt of cyclone 'Yaas', as large tracts of land in coastal areas of the state were inundated in a storm surge, a Defence official said. Stranded people were also rescued from places submerged in the storm surge in South 24 Parganas and Howrah, he said.

9) People of 14 of the 23 districts of West Bengal faced electricity outage due to Cyclone Yaas and many sub-stations are under water following heavy rain induced by the storm on Wednesday, Power Minister Aroop Biswas said. He said he sought a report from the power utilities of the state for loss assessment within 72 hours. "There is waist-level water in many locations. A number of sub-stations are now under water. Loss assessment will be available after ground surveys," Biswas said. The state-owned West Bengal State Electricity Distribution Company Limited (WBSEDCL) supplies power to most of the districts.

10) The government on Wednesday said there was the minimal impact of the cyclone on telecom infrastructure and the networks were extensively used to alert people in local languages to reduce damages. Telecom secretary Anshu Prakash told PTI that it was the first time voice messages were used to reach out to people in local languages and alert them about the cyclone Yaas threat. "This is the first time voice alerts were sent to people in their local language, which should have had an impact. Telecom service providers (TSPs) readily cooperated to offer this facility free of cost. We will add this facility as standard protocol for disaster management," Prakash said.

### **Odisha and West Bengal: Lakhs evacuated ahead of Cyclone Yaas landfall**

<https://www.ndtv.com/india-news/cyclone-yaas-live-updates-lakhs-evacuated-in-bengal-odisha-as-cyclone-yaas-nears-indias-east-coastlakhs-evacuated-in-bengal-odisha-ahead-of-cyclone-ya-2449237>

"Cyclone Yaas has begun the landfall process, the India Meteorological Department said at 9 am. The location of the landfall is north of Dhamra and south of Bahanaga, close to Bahanaga block, on the coast, around 50 km of Balasore, an official said. The wind speed during landfall was at 130-140 kmph, gusting to 155 kmph, as per Doppler radar data. ""The landfall process has begun and will take three-four hours to complete. The maximum impact will be in Balasore and Bhadrak districts,"" Odisha's Special Relief Commissioner PK Jena said.

Around 5.80 lakh people have been shifted to safe shelters, he said. Visuals from Bengal's Digha and South 24 Paraganas districts, and Odisha's Kendrapara showed strong winds and waves, with some coastal areas already flooded and people wading through knee-deep water on roads along the sea front. Over 11.5 lakh people have been evacuated from vulnerable places in West Bengal in view of the impending cyclone Yaas, informed West Bengal Chief Minister Mamata Banerjee. The Odisha government said it has moved over 2 lakh people from vulnerable areas in coastal districts to safety. The India Meteorological Department (IMD) earlier predicted that the wind speed during the landfall would be around 155-165 kmph, gusting to 185 kmph. The landfall process was delayed for some hours with the system's velocity decreasing to 12 kmph from 15-16 kmph, Mr Jena said. The cyclone did not intensify any further after 2 am, he said.

### **West Bengal: Cyclone Yaas casts shadow on livelihood of fishermen in Digha**

<https://in.news.yahoo.com/west-bengal-cyclone-yaas-casts-123035308.html>

"The emergence of Cyclone Yaas has cast a shadow on the livelihood of fishermen in Digha in West Bengal. After the India Meteorological Department (IMD) has issued a warning for cyclonic storm Yaas, the fishermen from the Digha or the Mohana area of Purba Medinipur are worried about their livings. Mohana is the hub of fisheries, which has been completely shut down due to the warning. Fishermen are now busy tying up their trollers, which are used to catch fishes so that during the storm their trollers do not sink. These trollers are their lifeline for survival. ""We are tying up the trollers as we have been asked by the administration to avoid going to the sea to catch fishes. We have no other options for livelihood. We already are in crisis due to the COVID lockdown. And now, this natural calamity will only intensify our problems,"" a fisherman Kaustav Kanti told ANI. Another fisherman Kamal Kanti said this kind of cyclone affects the fisherman community heavily as well as the business. He remembered the havoc created by Cyclone Amphan last year.

""We have eight trollers here. We catch fishes using these. Last year, we had to make up the same arrangements for Amphan. This year again another cyclone -- Yaas. Though it is not in our hands to avoid this, a bit earlier preparation can save us from this storm. The whole business of fisheries has been affected,"" Kamal Kanti told ANI. The IMD on Tuesday predicted that the cyclonic storm Yaas is going to intensity into a 'very severe cyclonic storm' in the next 12 hours. ""The severe cyclonic storm Yaas over the east-central Bay of Bengal moved north-

northwestwards with a speed of about 9 kmph during past six hours. It is very likely to intensify further into a very severe cyclonic storm during the next 12 hours. It would continue to move north-northwestwards, intensify further and reach the northwest Bay of Bengal near North Odisha and West Bengal coasts by May 26 early morning," the weather agency said.

**West Bengal and Odisha: Cyclone Yaas: All 265 fishing boats have returned to harbour from Bay of Bengal, says Coast Guard**

<https://www.outlookindia.com/newscroll/cyclone-yaas-all-265-fishing-boats-have-returned-to-harbour-from-bay-of-bengal-says-coast-guard/2088990>

"The Indian Coast Guard on Monday said all the 265 boats, which were reported to be in the Bay of Bengal by fisheries authorities, have returned to harbour in view of cyclone Yaas. The cyclone is very likely to cross the north Odisha and West Bengal coasts between Paradip and Sagar Island around May 26 noon as a "very severe cyclonic storm". It is expected to bring in winds of 155 to 165 kmph, gusting up to 180 kmph. ""Consistent efforts of the ICG ensured all 265 boats reported at sea by fisheries authorities safely returned harbour,"" the Indian Coast Guard (ICG) tweeted. It said its disaster response teams, ships and aircraft are on standby. Moreover, the ICG is maintaining close liaison with state administrations and other stakeholders to deal with any situation, the coast guard said. The deep depression over the Bay of Bengal intensified into cyclone Yaas in the early hours of Monday and it is likely to intensify into a severe cyclonic storm in the next 24 hours, the India Meteorological Department said. Just a couple of days back, on May 17, cyclone Tauktae devastated the coastal districts of Gujarat, killing around 70 people in the state.

**West Bengal and Odisha: Indian Navy ramps up preparations, deploys rescue & relief teams**

<https://timesofindia.indiatimes.com/city/kolkata/cyclone-yaas-live-updates-rain-lashes-odisha-west-bengal/liveblog/82873733.cms>

"The cyclonic storm is very likely to move north-northwestwards, intensify further into a very severe cyclonic storm during next 12 hours. It would continue to move north-northwestwards, intensify further and reach northwest Bay of Bengal near North Odisha and West Bengal coasts by May 26 early morning. West Bengal: Ham operators to assist administration in Cyclone Yaas relief and rescue work A team of ham radio operators of the West Bengal Radio Club (Amateur Club) has been involved by the South 24 Parganas district administration's disaster management section to assist the district administration in relief and rescue work. The severe cyclonic storm Yaas over east-central Bay of Bengal moved north-northwestwards with a speed of about 9 kmph during past six hours and lay centred at 9 UTC of May 24 over east-central Bay of Bengal.

Red alert issued for 4 Odisha districts Ahead the predicted May 26 landfall of cyclone Yaas in coastal areas of the Odisha, the state issued a red alert warning for Kendrapara, Bhadrak, Jagatsinghpur and Balasore districts, which are likely to be affected with heavy rainfall. As many as 52 NDRF teams are designated for Odisha followed by 45 teams for West Bengal, which is the highest-ever number of teams deployed in Odisha and West Bengal. Severe cyclonic storm Yaas is likely to make landfall near Dhamra Port in Odisha's Bhadrak district early on Wednesday morning. INS Netaji Subhas is spearheading the Indian Naval's relief effort at West Bengal and is in close coordination with the State Government of West Bengal for preparations for Cyclone Yaas, which is scheduled to make landfall between Odisha and West Bengal coast on May 26, informed an official release by Indian Navy. At 0830 IST, SCS 'Yaas' about 280 km south-southeast of Paradip.

To intensify further and cross north Odisha-West Bengal coasts between Paradip and Sagar Island close to north of Dhamra and south of Balasore, during noon of Wednesday as a very severe cyclonic storm. People living in low-lying and vulnerable areas have started moving to the multipurpose cyclone shelter at Digha, East Midnapore. Pre-emptive measures taken by West Bengal and Odisha ahead of Cyclone Yaas landfall. Sea turns rough at Paradip ahead of Cyclone Yaas landfall With Cyclone Yaas predicted to make landfall on the eastern coast on May 26 and likely to hit parts of Odisha and West Bengal, the Indian Navy said it has ramped up rescue and relief operations to minimise damages.

Cyclone Yaas 320km away from Paradip The cyclone is near latitude 18 degree north and longitude 88.6 degree east, about 320 km south-southeast of Paradip, 430 km south-southeast of Balasore, 420 km south-southeast of Digha and 470 km south--southwest of Khepupara, said the Tropical Cyclone Advisory of Regional Specialised Meteorological Centre of India Meteorological Department. Orange alert -- heavy to very heavy rainfall expected in Mayurbhanj, Jajpur, Cuttack, Khorda and Puri today. People being evacuated by Odisha's Balasore district administration and Marine Police Force in Chandipur. Red alert -- extremely heavy rainfall warning issued for Kendrapara, Bhadrak, Jagatsinghpur, Balasore for today and tomorrow.

### **West Bengal and Odisha: Thousands evacuated in India as strong Cyclone Yaas inches closer**

<https://www.aljazeera.com/news/2021/5/25/thousands-evacuated-in-india-as-strong-cyclone-yaas-inches-closer>

"Tens of thousands of people have been evacuated in low-lying areas of two Indian states and moved to cyclone shelters to escape a powerful storm barreling towards the eastern coast. Cyclone Yaas is set to turn into a "very severe cyclonic storm" with sustained wind speeds of up to 177 kilometres (110 miles) per hour, the India Meteorological Department said on Tuesday.

The cyclone is expected to make landfall early on Wednesday in Odisha and West Bengal states. The cyclone which comes amid a devastating coronavirus surge complicates India's efforts to deal with these crises just 10 days after Cyclone Tauktae hit India's west coast and killed more than 150 people.

Thousands of emergency personnel have been deployed in the coastal regions of the two states for evacuation and any possible rescue operations, said SN Pradhan, the director of India's National Disaster Response Force. India's air force and navy were also on standby to carry out relief work. Fishing trawlers and boats have been told to take shelter until further notice as forecasters warned of high tidal waves. In West Bengal, authorities were scrambling to move tens of thousands of people to cyclone shelters. Officials said at least 20 districts in the state will feel the brunt of the storm. Evacuations in coastal districts and the Sundarbans mangrove forest, a UNESCO world heritage site, started on Sunday, West Bengal disaster management minister Javed Ahmed Khan said.

"We have to evacuate nearly half a million people ... to schools (and) government offices, which have been turned into cyclone centres to provide shelter to these people," Khan told the AFP news agency. In Odisha, a state already battered by coronavirus infections, authorities evacuated nearly 15,000 people living along the coast and moved them to cyclone shelters, senior officer Pradeep Jena said. In a televised address on Monday, the state's chief minister, Naveen Patnaik, appealed to people being moved to cyclone shelters to wear double masks and maintain social distancing. He asked authorities to distribute masks to the evacuated people. "We have to face both the challenges simultaneously," Patnaik said. In neighbouring Bangladesh, authorities asked all fishing boats and trawlers over the North Bay of Bengal and the deep sea to move closer to the coast ahead of Yaas approaching.

A weather bulletin from the country's Meteorological Department in Dhaka said that ships should leave maritime ports of Chattogram, Mongla, Cox's Bazar and Payra. In Sri Lanka, the weather bureau warned the island nation's fishermen not to venture into the Bay of Bengal. "This cyclone spells double trouble for millions of people in India as there is no respite from COVID-19. The country is being slammed by a second enormous cyclone in two weeks and hitting areas where COVID infections and deaths have been at record highs," Udaya Regmi, the South Asia head of delegation of the International Federation of Red Cross and Red Crescent Societies (IFRC) said in a statement.

"Indian Red Cross volunteers are working alongside authorities to support the safe evacuation of people who are in the direct path of the cyclone, preparing rafts in case of storm surges and flooding and relief supplies such as food rations," Regmi said. Scientists say cyclones in India are becoming more frequent and changing climate patterns have caused them to become more intense. Last May, nearly 100 people died in Cyclone Amphan, the most powerful storm in more than 10 years to hit eastern India, including West Bengal. It flattened villages, destroyed farms

and left millions without power in eastern India and Bangladesh. In the coastal areas of Bangladesh, thousands of people are still recovering after last year's Cyclone Amphan, with more than 100,000 still living in temporary shelters, the IFRC said in its statement. "We haven't been able to fix the damage to our home from the last cyclone. Now another cyclone is coming, how will we stay here?" said Samitri, who uses only one name.

**West Bengal: Cyclone Yaas: West Bengal fishermen advised not to venture into sea from May 23**

<https://www.hindustantimes.com/india-news/cyclone-yaas-west-bengal-fishermen-advised-not-to-venture-into-sea-from-may-23-101621672260263.html>

"In view of the cyclonic storm Yaas, which is likely to form in the Bay of Bengal, the head of Regional Meteorological Centre (RMC) in Kolkata Dr Sanjib Bandyopadhyay advised the fishermen of West Bengal not to venture into the sea from May 23 evening, and advised those who are in the deep sea to return to the coast by May 23 morning. Bandyopadhyay said that a low-pressure area is very likely to form over North Andaman Sea and adjoining East Central Bay of Bengal around May 22 and is very likely to intensify gradually into a cyclonic storm by May 24. "It would move northwestwards and reach near Odisha-West Bengal coasts around May 26 morning," the chief of RMC Kolkata said. Dr Bandyopadhyay informed that the coastal districts of West Bengal will be witnessing light to moderate rainfall at most places with heavy falls at isolated places from May 25 with a significant increase in intensity.

"We have issued a warning for the fishermen of West Bengal. They are advised not to venture into the sea from May 23, till further information. Those who are in the deep sea are advised to return to the coast by May 23 morning," he added. The IMD had earlier predicted that the cyclonic storm Yaas will hit the coasts of Odisha and West Bengal on May 26 and both the states will experience heavy rainfall from May 22 to 26.

**Odisha and West Bengal: Cyclone Yaas: Storm intensifies, likely to cross Odisha-Bengal coasts on May 26**

<https://www.cnbctv18.com/india/cyclone-yaas-live-updates-cyclonic-storm-likely-to-turn-very-severe-says-imd-9400191.htm>

"Cyclone Yaas Live Updates: India was airlifting rescue and relief teams and keeping defence aircraft and naval vessels in readiness as it braced for cyclone Yaas' which is expected to hit eastern coastal areas of Odisha and West Bengal on Wednesday, barely a week after cyclone 'Tauktae' battered the western coast leaving behind a trail of destruction. The India Meteorological Department (IMD) said on Sunday that the cyclone is likely to make landfall on May 26 evening between Paradip in Odisha and Sagar islands in West Bengal after intensifying into a very severe cyclonic storm' with wind speed ranging from 155 kmph to 165 kmph, gusting to 185 kmph. It will start bringing heavy rain in coastal areas from Tuesday.

## **West Bengal, Odisha: Prep for Cyclone Yaas; IMD says Amphan-like intensification can't be ruled out**

<https://www.hindustantimes.com/india-news/cyclone-yaas-imd-warns-of-amphan-like-intensification-101621481917684.html>

"After severe cyclonic storm Tauktae in the west coast, another cyclone named Yaas is likely to hit the east coast on May 26, the India Meteorological Department (IMD) said on Wednesday. A low pressure area is very likely to form over north Andaman Sea and adjoining east-central Bay of Bengal around May 22, it said. It is likely to intensify gradually into a cyclonic storm in the subsequent 72 hours, the IMD added. Under the influence of the system, Andaman and Nicobar Islands, Odisha, West Bengal, Assam and Meghalaya are likely to receive light to moderate rainfall at most places with heavy falls at isolated places from evening of May 25, the weather department said. Here's the latest on Cyclone Yaas:

- 1) IMD officials said they cannot rule out the possibility that Yaas will intensify like Amphan. "We cannot rule out an Amphan-like intensification. The only good thing is that models as of now are showing that the system is moving very fast over the sea. Its intensification will be restricted if its time over sea is less," Sunitha Devi, who tracks cyclones at IMD, told HT.
- 2) Officials in Odisha have started making preparations for the cyclone. Odisha Special Relief Commissioner Pradeep K Jena on Wednesday held a preparatory meeting with the collectors of 10 coastal districts along with SPs, fire department officers and emergency officials.
- 3) He directed district authorities to identify the shelters, check facilities and infrastructure and deploy staff and to prepare an evacuation plan.
- 4) ""There is no confirmed information that the cyclone will make landfall on the Odisha coast. We have received some preliminary reports from IMD which predicted a possible cyclonic storm in Odisha-West Bengal coast on May 26,"" Jena told reporters after the meeting.
- 5) In West Bengal, chief minister Mamata Banerjee on Wednesday directed senior government officials to make all the necessary arrangements. She chaired a virtual meeting, where Banerjee directed officers to arrange for adequate stock of medicines, drinking water, dry food and tarpaulins.
- 6) Warning that sea conditions are likely to be rough to very rough, the Met Department advised fishermen not to venture into the Bay of Bengal from May 24.
- 7) The IMD said that the west coast, especially the states of Gujarat and Maharashtra, are still assessing the damage done by extremely severe cyclonic storm Tauktae. The Navy on Thursday morning launched a fresh aerial search and rescue mission, deploying helicopters to scour the

waters off Mumbai coast, where the accommodation barge P305 went adrift in Cyclone Tauktae fury before it sank on Monday.

8) As many as 26 personnel on board the barge are dead and 49 still missing. The navy said that it has so far rescued 186 of the 261 people who were on board the barge P305.

9) The pre-monsoon months of April and May usually witness formation of cyclones on the eastern as well as the western coast.

10) May 2020 saw two cyclones - super cyclonic storm Amphan and severe cyclonic storm Nisarga - which hit the eastern and western coast, respectively.

### **West Bengal: Demand for local fish over river varieties pushes up price**

<https://timesofindia.indiatimes.com/city/kolkata/demand-for-local-fish-over-river-varieties-pushes-up-price/articleshow/82750524.cms>

"The prices of local and fresh fish varieties have shot up while that of river fish has taken a plunge following the news of suspected Covid victims' bodies floating in other states. Fish vendors are having a tough time selling catfish, bigger varieties of rohu and katla. But smaller and fresher varieties of fish are being sold faster. The prices of local varieties have gone up by Rs 150-200 a kg in the last four days, said fish traders. Times View There needs to be widespread dissemination of correct information to preempt an avoidable distress in the demand-supply chain. Supplies, anyway, would have taken a hit because of transportation problems. Any further disruption would add to the chaos and has the potential to hurt people in the supply chain. The demand for fish in the markets have remained high since Sunday with people keen to stock up to avoid making frequent trips to the fish markets

"We anticipated the demand, so we activated local fishermen who catch in small quantities and sell on their own. We had done the same last year too. Such catches are now helping us," said Subir Koley, a fish wholesaler at Lake Market. "Even on a Sunday we could not get the variety that people demanded. However, they bought the alternatives we had on offer. Bata, small prawns and Mourala were sold well. The price remained high though. Mourala was sold at Rs 400-450 per kg but our stocks were exhausted before we shut shops in the afternoon," said Ashta Dhara, who has two shops at Gariahat and Kasba markets. The higher demand has pushed up the prices of local varieties.

"Average prices of local variety rose by Rs 150 a kg in the last four days. If the parshe from the pond is sold at Rs 550-600, the river variety is priced at Rs 400. Local varieties like Rupchand and Tilapia (St Peter fish) rose by Rs 200 a kg," said Amar Das, a fish vendor of Lake Market. Soumendra Bagchi, a retired professor of Manindra Chandra College, said, "I wanted to buy a Katla weighing 4kg for the whole week, but the fish available was below 3kg. So I bought bata, tyangra and mourala."

### **West Bengal: Covid supply logjam pushes up fish price at city markets**

<https://timesofindia.indiatimes.com/city/kolkata/cov-supply-logjam-pushes-up-fish-price-at-city-mkts/articleshow/82584993.cms>

"Suspension of local train services has hit the city's fish supply. Majority of fish markets in south Kolkata that depend on supply from Namkhana, Kakdwip, Canning and Diamond Harbour have been badly hit for non-plying of trains. Similarly, north Kolkata markets have been affected as supply from Barasat and Basirhat has become scarce. The results have been obvious. Whatever supply of fish is coming to Kolkata markets by road has made Bengali's delicate dish dearer. Going by market rates, prices of fishes have gone up by Rs 50-Rs 150 a kg depending on their variety. While prices of katla and rohu have gone up by Rs 50 a kg, other varieties like parse, pabda, tyangra and pomfret have become dearer by Rs 100 per kg. Raja Dutta, a retired government officer and a resident of Regent Estate, has been a regular to Baghajatin wholesale fish market. However, Dutta these days is upset because of a scarcity that has hit this wholesale market that supplies fish to other neighbouring markets.

"Firstly, I don't get the variety that I used to get even a fortnight ago. And then, whatever fish is available, the price is getting out of bounds for us," Dutta complained. Ajit Maity, a fish trader at Baghajatin market, conceded that scarce supply of fish from various parts of South 24 Parganas has made the price dearer. "The supply was getting disturbed with the rising Covid graph. Now that the train services have been non-functional, the price is bound to rise further," Maity said. Amar Das, a fish trader at Lake Market, also warned about a further rise in prices of all varieties of fish if the train services were not resumed. "We largely depend on supply of fish from Kakdwip and Canning. Now the supply has been reduced to a great extent for non-plying of trains. Whatever supply is coming by road, we are buying at a premium," Das said. According to Bijon Maity, the secretary of the Fishermen's Association (South 24 Parganas), transportation crisis has triggered a major scarcity of supply of fish as there was a temporary ban on fishing due to the existing breeding season. "We need to wait for the train services to resume to bring down the prices of fish in Kolkata markets," Maity said.

### **West Bengal: COVID, climate change pushing Sundarbans women to distress**

<https://www.aljazeera.com/news/2021/4/14/india-covid-climate-change-pushing-sundarbans-women-to-distress>

"In April last year, 17-year-old Rani Khatun, a resident of Sagar Island in the Sundarbans, would spend most of her day in school, preparing for the upcoming board exams. She wanted to be a teacher one day. Less than a year later, Khatun is a school dropout and a victim of domestic violence after a forced underage marriage. Sundarbans, the world's biggest delta, is a 10,000 sq km (6,213 sq miles) dense forest of tidal mangroves, straddling India's eastern coastline and western Bangladesh, opening into the Bay of Bengal.

Crisscrossed by rivers, it is home to nearly 4.5 million people on the Indian side, with a large part of its population being subsistence farmers, dependent on fishing, paddy and betel leaf cultivation, and honey collection. Sagar Island, spread over 282 sq km (175 sq miles), is home to more than 200,000 people. The deltaic region saw large-scale migration of people to cities for work in 2009 after Cyclone Aila devastated the region, killing more than 300 people. But many had to return after they lost their jobs due to the coronavirus lockdown imposed in March last year. As they returned, another super cyclone, Amphan, ravaged Sundarbans in May 2020, killing more than 100 people.

Even as COVID-19 restrictions were eased in June, the 46-year-old could not re-establish his tailoring business due to rampant poverty in the region, pushing the family into acute financial distress. Then came a marriage proposal for Khatun, with the groom's family demanding little dowry. Though outlawed, the practice of dowry continues in the Indian subcontinent, in which money and expensive gifts are given to the groom's family for marriage. Though Khatun was a minor who could not be married according to Indian laws, her family married her off. "The groom's family didn't demand any money.

We thought by marrying off our daughter, we would have one person less to feed," Khatun's mother Nazula Biwi told Al Jazeera. However, Khatun was allegedly assaulted by her husband and in-laws and she came back within a month to her parents, who have ended up with a bigger liability – a debt of 80,000 Indian rupees (\$1,104), which they had taken for their daughter's marriage. Like Khatun, other young girls in the Sundarbans are also being forced into marriage due to poverty, worsened by climate change as recurrent storms and rising sea level lead to land loss and fall in farm productivity due to saline water intrusion.

The COVID-19 pandemic, resulting in job losses and more poverty, has only aggravated the crisis. Rise in underage marriages According to UNICEF estimates, at least 1.5 million Indian girls below the age of 18 are married off every year and nearly 16 percent girls aged between 15 and 19 are currently married. After the pandemic and Cyclone Amphan hit the Sundarbans, reports suggest a substantial spike in the numbers. Laboni Singha Das, a representative of Childline India Foundation, a government-appointed coordinating agency focused on ending child marriages in West Bengal, said there has been an unusual spike in the cases of child marriage on Sagar Island alone in the last year. Das said she has rescued close to 50 girls from child marriages in less than a year after receiving tip-offs about their marriages. Once Childline is alerted to a child marriage through its helpline or other means, it intervenes to stop the marriage by going to the spot along with the police. Das attributed the spike in child marriages to the prolonged closure of schools due to the pandemic. With girls engaged more in housework, they got disconnected from education, she said.

"The most vulnerable are those aged between 13-16 years." Nihar Ranjan Raptan, secretary of Goranbose Gram Bikas Kendra, an NGO fighting child marriages in the region, said while four-

five cases of child marriages were reported in the region every month, that number has gone up to eight to 10 since the pandemic. In June last year, the West Bengal Commission for Protection of Child Rights, a government body, set up a special team in association with various NGOs to deal with child marriages in the Sunderbans. Any case of child marriage could be reported over the phone or WhatsApp on a number provided by the agency. The government has also made it mandatory for the children forced into child marriages to be sent to rehabilitation centres for a minimum of 40 days. At these centres, the girls are offered psychological counselling, vocational training and, if needed, even enrolment in schools. Those who facilitated the marriage could be imprisoned for up to two years and fined 100,000 Indian rupees (\$1,360).

Climate change and women Faced with environmental degradation and resultant poverty, women suffer differently from men. They continue to remain marginalised and fall prey to child marriages, trafficking and domestic violence.

The evidence regarding the gendered effects of climate change is presently limited but there has been extensive research showing that when poor households in developing countries are hit by adverse economic shocks, women and girls suffer considerably more than men and boys,” said Zaki Wahhaj, co-director of Development Economics Research Centre at the University of Kent. Anurag Danda, a senior visiting fellow with think-tank Observer Research Foundation’s Energy and Climate Change Programme, said he will not “attribute incidences of child trafficking and marriages to Amphan or COVID alone”.

“However, economic hardships have an ecological angle. As land turns saline or there are breaches of embankments, people lose land and economic hardships ensue. Also, with every generation, landholdings turn smaller as they get divided among scions. All this leads to a higher incidence of poverty and subsequently child marriages and trafficking,” he told Al Jazeera. A study by M Niaz Asadullah, Kazi Md Mukitul Islam and Zaki Wahhaj, published in the Journal of Biosocial Science, examined the reasons leading to child marriage in eight villages in the climate-affected areas of coastal Bangladesh.

The study found that more than two-thirds of the respondents had encountered at least one event of a natural disaster before marriage. “These patterns suggest that climate change may be worsening the problem of child marriage in the Sundarbans region,” Wahhaj told Al Jazeera. Ajanta Dey, joint secretary of Nature Environment and Wildlife Society (NEWS), said the experience after Cyclone Aila showed that climate change affected women much more than men. “Be it in the form of trafficking or child marriage, women are first impacted due to climate change,” he said. Hostile landscape After Cyclone Aila devastated the region in 2009, submerging the nearby islands of Lohachara and Suparibhanga, Sagar Island became the home of a large number of climate refugees.

After migrating to the island, more than 64 percent of its residents had to change their original livelihoods, according to a 2012 study. Nearly 20 percent of former farmers and more than 6

percent of fishermen became daily wage labourers, while 35 percent of people took to other jobs, said the study. While frequent storms cause extensive damage, the Sundarbans have also been witnessing a rapid loss of land for years due to a rise in temperature.

“The waters of Bay of Bengal have been rising up to twice as fast as the global average at about 4.4-6.3mm a year as temperature in the region is rising faster than other regions,” said a 2018 study by climate physicist Chirag Dhara. The Sundarbans Delta is sinking at a rate of about 2-4mm a year, he said. Dhara added that the rise in sea levels around the Sundarbans at 8mm a year was nearly three times faster than the global average and as high as 12mm a year on Sagar Island. While rising sea continues to shrink habitable land in the region, the dreams of girls like Rani Khatun continue to get broken. She is back in school, but not sure if another storm will sink her ambitions again.

### **West Bengal: Prized Hilsa fish set to travel upstream in Ganges after four decades**

<https://www.newindianexpress.com/nation/2021/mar/31/prized-hilsa-fish-set-to-travel-upstream-in-ganges-after-four-decades-2283996.html>

"Hilsa, the darling of fish lovers across West Bengal and Bangladesh, could be breeding upstream in the mighty Ganges later this year, after almost four decades of being locked out by the Farakka barrage across the river. A new navigation lock is in the making at the barrage created to save Bihar and West Bengal from flooding and to generate hydel power to enable hilsa breeding in the next few months. Fish connoisseurs along the Ganga, up until Uttar Pradesh's Allahabad, maybe able to savour fresh hilsa as the project will make way for their travel upstream from beyond the Farakka, said a top official of L&T Geostructure.

The Inland Waterways Authority of India (IWAI) had contracted L&T GeoStructure for the new Farakka navigation lock in Murshidabad district, as a part the Jal Marg Vikas Pariyojana, and said it will make a special arrangement to allow easier passage of the hilsa. The movement of the popular fish in the Ganges till Allahabad came to a halt after construction of the old Farakka navigation lock in 1976, officials said.

""The new Farakka navigation lock is expected to be complete by June,"" S Kanappan, Head and Chief Executive of L&T Geostructure, said. The Centre had said in 2019 that based on research on the breeding season of the hilsa, the operation of navigational lock will be regulated to facilitate their movement from the Hoogly-Bhagirathi river system upstream to the main Ganga river and vice-versa. Kanappan said due to the inefficiency of the existing navigation lock gate at Farakka, about 280 km from Kolkata, the IWAI proposed a new one, which will feature modern features like electro-hydraulic and remotely-controlled operation of all gates from a control room.

The new navigation lock will entail an investment of around Rs 361 crore, the officials said. Hilsa, considered a nonpareil delicacy when fried, smoked or cooked in mustard sauce, typically travels up the rivers Ganga, Brahmaputra and Irrawaddy from the Bay of Bengal during the rainy season to spawn. The fish is also found in the Arabian Sea from where it goes upstream through rivers in Gujarat and Pakistan's Sindhu river, as well as in the Persian Gulf, Red Sea, Vietnam and China seas. The peak upstream migration of the fish coincides with the advent of Monsoon July and August and continues up to October and November, according to a 2017 report by the Central Inland Fisheries Research Institute.

The report had also suggested that a "bypass channel" be created in the western side of the existing navigational channel at the Farakka Barrage to facilitate natural upstream migration of hilsa. The first phase of the Jal Marg Vikas Pariyojana covers the Haldia-Varanasi stretch, and aims at developing fairway and multi-modal terminals, strengthening of river navigation system and conservation works, the officials said.

### **West Bengal: Ground zero of Nandigram farm protest now a shrimp export hub**

<https://timesofindia.indiatimes.com/elections/assembly-elections/west-bengal/ground-zero-of-nandigram-farm-protest-now-a-shrimp-export-hub/articleshow/81608794.cms>

"A large number of farmers in Nandigram — who had once fought for the protection of their farmlands, a cause championed by Mamata Banerjee that helped her topple the 34 years of Left Front regime 10 years ago — have now turned into prawn cultivators and converted their fertile farmlands into artificial water bodies. The farmers, who now culture white legged shrimps and tiger prawns, have also switched from their farm-focused poll demands a decade ago to stress on exports and food processing units in the area this election.

As a result, Bengal's most high profile constituency this year is in focus not only for the heavyweight candidatures but also for the paradigm shift in demands and aspirations of its villagers. "It has been eight years since I have quit farming and took 20 bighas of land on lease. Earlier, I used to earn Rs 7,000 by growing eight quintals paddy. Now, I earn Rs 50,000 from prawn cultivation in the same one bigha land. I cultivate bagda (tiger prawn) as well as bhenami prawn and export almost my entire produce to abroad. Almost all other farmers in this area has also converted into prawn cultivators over the years that guarantees higher income," said Sukdeb

Manna, a resident of Mohammadpur in Nandigram I. Manna owns a two-storied house in the village and his children study in Kolkata colleges.

“Life has certainly changed for the better due to the shift,” he says. Nandigram, located some 132 kms from Kolkata, was the epicentre of farmers’ agitation against land acquisition in 2007. Fourteen villagers were killed in police firing while protesting against the then Left Front government’s proposed land acquisition for a chemical hub of Indonesia’s Salim Group. But over a decade later, farmers from villages like Kendamari, Mohammadpur, Garchakraberia, Gangra, Haripur, Bhekutia, Daudpur, Khejuri and Sonachura — all of whom were actively involved as part of Bhumi Uchhed Pratirodh Committee to protest against the land acquisition — have now changed their profession. The location of the proposed chemical hub was later shifted to Nayachar and the proposal was finally scrapped. Alamgir Hossein, a senior leader of the shrimp cultivators in the area, who was also part of the farmland movement, said that with time the demands of villagers also changed.

“Earlier, we used to fight for the rights of the farmers. But now our focus is on prawn and shrimp cultivation and we plead before the political parties to facilitate smoother exports to foreign countries like the US, China and Japan,” said Hossein. The shift from farming to pisciculture had first begun at Moyna block in East Midnapore. The trend was soon observed at other coastal areas, including Nandigram.

Now, East Midnapore’s net district domestic product derives one fifth of its earnings from fisheries, the highest amongst all the districts of Bengal. “The change has been evident in the last one decade. While prawn and shrimp cultivation is seasonal, we help them grow saltwater fishes like American pomfret and milkfish during other times of the year,” said Suman Saha, district fisheries extension officer. Nandigram assembly constituency is set to witness a high-octane battle as CM Mamata Banerjee is up against her former protégé and BJP leader Suvendu Adhikari. The CPIM has also fielded a young and dynamic Minakshi Mukherjee, the youth wing state president of the party, for the seat that has been in possession of Trinamool since 2011.

“We had fought for the protection of the land. Around 30% farmers have now shifted to pisciculture, but that is also a kind of farming that they are growing on their own land. That had been the motto of our movement and we still stand firmly beside them in their new ventures,” said Abu Taher Khan, a senior TMC leader. Senior BJP leader in the area, Proloy Pal, said: “Change is good. But a majority of villagers is still into farming. We acknowledge the needs and demands of both the groups and would strive to offer the best facilities to villagers of all occupations.”

### **West Bengal: Activists tries to push river conservation into agenda**

<https://www.downtoearth.org.in/news/water/west-bengal-elections-activists-tries-to-push-river-conservation-into-agenda-76052>

"The deteriorating health of rivers, water bodies and wetlands has become a critical agenda in West Bengal in the run-up to the assembly elections. Two back-to-back meetings in Kolkata were organised recently to demand attention to the problem from political parties. More than one thousand river and water activists and concerned citizens from across the districts gathered in a public meeting in Kolkata on March 17, 2021 to demand protection and restoration of the rivers. Couple of days earlier, hundreds of fishermen raised demands to ensure protection of river-based livelihoods of millions.

75 rivers lost or critical In the 1950s, river expert Kapil Bhattacharya had started a similar movement with fishermen to save the state's rivers, said Naba Dutta, secretary of Sabuj Mancha, a green platform. The platform organised the March 17 meeting with the support of Dakshinbanga Motosojibi Forum (DMF), an association of fishermen.

"The purpose of the meeting was to demand solidarity from all political parties, so that whoever comes to power next May, should take up the agenda of protecting the state's waterbodies on a priority," he said. Campaigners and around 100 fishermen had come from nearly every district. They voiced their demands for the protection of 30 rivers, water bodies and wetlands they were representing.

"We have carried out a primary survey taking help of activists across the state and have found that nearly 75 rivers across the state have either been already lost or in process of being lost," said the activist. Water conservationist Rajendra Singh, also known as 'the waterman of India', sent his solidarity message from Rajasthan, mainly highlighting the threat on Adiganga. Apart from Adiganga, the East Kolkata Wetlands, Saraswati River in Howrah; Bidyedhari, Ichamati and Churni rivers in the southern and northern fringes of Kolkata have been identified critically vulnerable stretches.

"In north Bengal, many rivers, particularly Mahananda, Atreyee, Phuleswari, Punarbhana and Sreemati have been severely affected and often turned into seasonal rivers," said Tuhin Suvra Mondal, a convener of the state-level river committee set up by Sabuj Mancha. The transboundary rivers that the region shares Bangladesh, like Teesta and Atrai, are of particular concern, Mandal added. Sunderbans, which is a land of rivers, has also suffered degradation of its waterbodies due to pollution, salinity and encroachment.

"The volume of catch by fishermen has also systematically dwindled," observed Milan Das of Dakshinbanga Motosojibi Forum (DMF; an association of fishermen) who was present at both the meetings. The biodiversity hotspot has been officially labeled a 'no plastic' zone. But the reality, as locals pointed out, is different. Pollution, particularly from plastic, is becoming a menace for fishermen, said Pabitra Mondal, a resident of Gosaba block in Sunderbans.

"Pollution and other factors have critically affected the biodiversity of the rivers. For example, Jalangi has lost six fish species in the last few decades," said Supratim Karmakar, a river

researcher. Political priority a must Rivers, water bodies and wetlands have been systematically infringed upon in the state, often with politicians' tacit support, green activists alleged. "Illegal encroachment to rampant sand mining, rivers in the state is being violated regularly, often with the overt or covert support of politicians," said Biswajit Mukherjee, former chief law officer, state environment department and green activist. Though National Green Tribunal (NGT) ordered state pollution control board (PCB) to work on pollution abatement and restoration of 17 rivers, no action has been taken, alleged Sasanka Dev, a DMF member.

"We have submitted the pollution abatement plans for most rivers to NGT while others are in pipeline, but we have no role in execution," said Kalyan Rudra, chairman of state PCB. A senior PCB official, however, said huge fund allocation will be required for implementation of the plans but he has no clue where the money will come from.

A river ministry? A number of demands emerged from the meeting that the green platform plans to take up with politicians and the new government: Some of the major demands include:

- 1) Rejuvenation of Adi Ganga river stretch
- 2) Conservation of East Kolkata Wetlands, Santragachi jheel and Tapan dighi
- 3) Cleaning up of critically polluted Ichamati, Churni, Buriganga
- 4) Rejuvenation of lost or almost lost rivers
- 5) Immediate execution of NGT order for restoring 17 rivers
- 6) Taking up issues of Transboundary Rivers like Atrayi, Teesta with the Union government
- 7) Earmarking boundaries of rivers and wetlands
- 8) Removal of illegal encroachers
- 9) Stopping sand mining
- 10) Formation of separate ministry and full-time minister for rivers Sabuj Mancha will soon approach political parties with their demands to urge them to be included in their agenda, said Dutta.

### **West Bengal: Saving the Sundarbans**

<https://newint.org/features/2021/02/08/view-india>

"The Sundarbans, an island-dotted deltaic region of the River Ganges, is a confluence of an endangered mangrove ecosystem and human impoverishment. Last year it was struck by a double whammy – a deadly pandemic and natural disaster – and has been struggling since. In

May 2020, Cyclone Amphan displaced 2.4 million people here and further afield, while the country was in the thick of a Covid-19 surge.

The Indian Sundarbans is home to 4.5 million people and it will take a long time to regain some kind of equilibrium in the wake of these twin calamities. The region has already been fronting the adverse effects of climate change for decades as sealevels rise and islands sink. Rebuilding is a way of life here, but the consequences of Covid-19 have complicated things – and further endangered the mangroves.

Mangroves worldwide are in decline. The Sundarbans region – spread over India and Bangladesh – has lost 24.5 per cent of its mangroves over the last 30 years, mostly due to erosion. This is set to get worse, because as migrant workers from the Sundarbans returned home after the long Indian lockdown, they had few survival options except to fall back on illegally exploiting the mangroves. This is an area of high migration; one in five households here has at least one family member who has left for the cities in search of work.

Migration increases after natural disasters. After Cyclone Aila hit in 2009, many women sought work in other parts of West Bengal. Their remittances played a major role in the rebuilding effort. But in 2020, in the aftermath of Amphan, Covid-19 made leaving to look for work impossible. Instead, people who had already migrated found their way back as they lost their jobs during the lockdown. Only 52 of the 102 islands here are inhabited by humans; the rest are forests, forming the core area of a tiger reserve where people are not allowed.

But lack of work is now pushing the desperate into the tiger reserve territory to collect honey, fish for crabs, and undertake illegal logging and even poaching. This has aggravated human-animal conflict. At least 18 people were killed in tiger attacks in the first 9 months of 2020, with 12 of these incidents reported since April, when migrants returned home. These are official figures; the actual number could be higher. This renewed dependence on the forests is extracting a huge cost both in terms of human lives and the health of the mangroves, which provide the last shield against storms and rising seas.

According to a Refugee International report: ‘Covid-19, Cyclone Amphan and monsoon flooding have shown us what a multifaceted and complex series of disasters look like today – and likely in the future.’ The region had just about rebuilt itself after Aila. But economic austerity – the legacy of the pandemic – could stall efforts this time. How the Indian government handles this complex crisis, and how the region is rebuilt and the mangroves protected – or not – in an era of increasing environmental disasters, will offer valuable lessons for the future. The Sundarbans is a warning for vulnerable ecosystems worldwide – because this is not the last pandemic, and neither will Amphan be the last cyclone.

**West Bengal: Over 25 lakh people lost jobs due to dying rivers: Report**

<https://timesofindia.indiatimes.com/city/kolkata/over-25-lakh-people-lost-jobs-due-to-dying-rivers-report/articleshow/81557174.cms>

"Riverine Bengal is fast losing its lifeline. More than 25 lakh people have lost livelihood because of the dying and dead rivers. On Wednesday, the victims of this worst environmental degradation staged a rally at Ramlila Maidan, Moulali, pointing that the issue has not featured in the manifesto of any political party in the poll-bound Bengal. The mass rally at Ramlila Maidan, organised by Sabuj Mancha, marked many firsts in poll-bound Bengal.

The rally used soundlimiters with every sound-amplifier supplied and installed for free by Webel, a PSU. The waste generated at the rally was collected and disposed periodically. The generator used for the rally was run by clean fuel. "The geography of Bengal's rivers has become history and we have lost biodiversity on a massive scale. The ground water recharge has been hampered to a great extent. Fishermen lost their livelihood like farmers. But the state administration and the Centre have remained indifferent to this issue," said Naba Dutta of Sabuj Mancha.

"We are not only demanding active intervention of the government to rejuvenate the dead rivers but also asking for a separate department that will work for the revival of rivers. Bengal has 56 rivers that flow across international borders. Moreover, it is very difficult to address a riverine issue. It ends up with 'passing-the-buck' games by different government departments like irrigation, water resources, forest, power and others," said Jotirmoy Saraswati, a river activist and director of Sreema Mahila Samity. Sabuj Mancha has already started a movement, Nadi Panchayat (River Panchayat) with three-tier redressal system — river sabha at the grass root level, river panchayat and zila river sansad.

"The ancient civilizations were born on the bank of rivers. The death of the rivers is ominously hinting at the complete destruction of human civilization," said Tuhin Subhra Mandal, an active river activist from north Bengal. The rally demanded the constitution of a river commission by the government. The commission must have representations from the grassroot level stakeholders. The government must take a call on the revival and rejuvenation of dying or dead rivers. The riverine tract must be rescued from the illegal occupants. The orders of the national green tribunal (NGT) must be complied with in this regard, said Dutta. The dumping of untreated effluents from factories and cities must be stopped immediately.

Fishermen must enjoy their right to fishing in all rivers and rivulets, Dutta added. He rued that many of the rivers flowing across international borders are highly polluted while the source of pollution is neighbouring countries. "In that case, external affairs ministry must intervene," he said.

**West Bengal: Cyclone Amphan: Building back with resilient infrastructure and community engagement**

<https://www.downtoearth.org.in/blog/environment/cyclone-amphan-building-back-with-resilient-infrastructure-and-community-engagement-75777>

"Strengthening resilience to climate-related hazards is an urgent target of Goal 13 of the United Nations-mandated Sustainable Development Goals (SDG). Stocking emergency supplies or preparing a family evacuation plan can substantially minimise loss and damages from natural hazards. However, the level of preparedness among households is often low even in disaster-prone areas. Studies have shown that human suffering and other damage do not end with the event itself.

Therefore, there is a need to focus on the complicated process of recovery and reconstruction in the months and years following a disaster. Amid the pandemic Cyclone Amphan, which caused massive destruction in West Bengal and adjacent areas, intensified rapidly on May 17, 2020 to become a 'super cyclonic storm' of category 5. It, however, weakened to category 3 before making a landfall on May 20. The devastating cyclone came at a time when people were struggling with surging cases of the novel coronavirus disease (COVID-19). Lockdowns and travel restrictions during the COVID-19 pandemic complicated the response and evacuation process during the disaster. The challenge was to protect the vulnerable people within the emergency shelters from Cyclone Amphan as well as COVID-19.

Most of them were craving for their basic rights of food, shelter and clothing. Implementation of shelter and toilet rebuilding programme is an immediate need to let them survive. The process of building resilience requires systematic methods which can be implemented through community interactions to understand the context of their living conditions.

Awareness campaigns to understand the purpose of each individual and sensible living facility like eco-friendly shelters and toilets can facilitate the return to normalcy. Long-term solutions from temporary shelters Transitional shelters, built for survivors of natural disasters, are unable to hold up against intensifying calamities and the advanced construction technologies are yet to penetrate the population living in acute poverty in West Bengal. Over the years, use of concrete materials and better technologies in transitional shelters, has made these dwellings stronger against cyclones. The concept, however, is taking time to get widely accepted.

The adaptation of 'transitional shelters' can provide an important insight into cyclone preparedness and resilience and can help develop a community-based approach for disaster management. Transitional shelter, being an incremental process rather than a multi-phased approach, needs acceptance. Such rapid, post-disaster shelters are made from materials that can be upgraded or re-used in more permanent structures, or can be relocated from temporary sites to permanent locations.

Transitional shelters have proven to be cost-effective over time if implemented correctly and provide good opportunities for scaling-up by using common, local and regional materials. With

building transitional shelters comes in meaningful engagement with affected communities /individuals. This ensures design and implementation is context-appropriate and the needs of marginalised and vulnerable groups are considered.

However, knowledge of good, safe building practices is inculcated so that houses incorporate disaster risk reduction measures. Pressure should not be taken off permanent housing reconstruction effort. The integration of other sectors or issues such as livelihoods, Water, Sanitation and Hygiene (WASH) and transport, is important for the success of the transition. There are several ways to boost infrastructure resilience.

Hazards can be addressed partially through the widespread deployment of green infrastructure, while preventing the development of grey infrastructure. Energy resilience can be enhanced through the development of distributed renewable power such as rooftop solar installations. The primary need is avoiding water pollution. The practice of setting up toilets right beside ponds can be replaced with ecological sanitation toilets. Manure collected from these units can also help the local community in irrigation. Community engagement for effective recovery Delivering shelter-recovery programmes is complex and often subject to significant competing interests and obstacles. The needs of women, girls, men and boys and that of different households can vary significantly.

A one-size-fits-all shelter design has limited flexibility to meet these needs. Governments and non-governmental organisations should greatly strengthen their approaches to community engagement in shelter projects, with the aim to improve community ownership of projects and individual ownership of shelters. Future programmes should aim to empower people to take charge of their own shelter recovery, including giving them meaningful control and choices over shelter design and construction, hence leading to improved outcomes overall. To do so, developing a communal understanding of the different risks disaster-affected people face and ensuring they have the knowledge to make choices about these risks is required. This will require strong community engagement and technical support capacity. Any future climate adaptation strategy needs to account for material needs of the most vulnerable communities, prioritising the building of a social safety net that will enable them to resume their livelihoods and continue to live with dignity.

Moreover, among the various stakeholders that build and carry community resilience are government, grassroots organisations and volunteer networks. These stakeholders are those who understand the local community and show up in solidarity at the hour of need, as disasters around the world have shown time and again.

### **West Bengal: Livelihood crunch drives fishermen to jaws of tigers**

<https://www.telegraphindia.com/west-bengal/calcutta/livelihood-crunch-drives-fishermen-to-jaws-of-tigers/cid/1807776>

"The lure of crabs that fetch good prices is proving to be fatal for fishermen and inexperienced groups venturing deep inside the core areas of the Sunderbans to lay traps despite the risk of tiger attacks. Metro had reported how two back-to-back tiger attacks on February 17 had left two fishermen dead. With these two cases, at least 22 fishermen have reportedly been killed by tigers in the Sunderbans since January 2020, an official of the state forest department said.

These, however, are official figures and actual figures may be higher. According to a forest department official, fishermen spend three to five days in the creeks to lay traps to catch crabs. "Once they return, they can sell their catch for Rs 30,000-40,000 in the wholesale market. The groups generally comprise five or six people. Sometimes three of them venture out on small rowboats to collect crabs," said the official. The Covid pandemic has doubled the hardships and many people have become dependent on the forests for their livelihood.

Many of them are venturing deep into the tiger territory, risking their lives, to catch fish and crabs every day. Licensed boats are allowed to fish in the rivers in the mangrove delta but venturing into the forests and shallow creeks is prohibited. The creeks draw fishermen because of crabs. But they are extremely dangerous because tigers often venture into these creeks. Soumen Roy, a resident of Kultali, was mauled by a tiger deep inside the Pirkhali forest and Atul Baidya was attacked by a tiger in the forests of Benefeli. Both had ventured deep into the core area of the mangroves where fishing is prohibited.

A senior forest department official said directives were given to the fishermen on a regular basis. "We have time and again held awareness camps. We ask fishermen not to moor their boats in the creeks and get down to lay traps as that is when they are vulnerable to tiger attacks. However, the attraction of higher earnings leads them to venture deep inside the core areas," said the official. Tempers, however, are frayed in the region because of the series of deaths. Forest department officials have been holding meetings with panchayat pradhans, members of the joint forest management committee and villagers from the Sunderbans asking them not to harm tigers if they spot one. According to Tapas Das, the field director of the Sunderbans Tiger Reserve, regular boat patrols are conducted in the core areas and fishing boats found moored along the creeks are asked to move away. "We actively discourage them but the lure of money is too high and they are fully aware of the risks involved," said Das.

Awareness campaigns in the villages will be held where fishermen will be asked not to go into core areas, he said. Migrant youths who had returned home during the lockdown opted for fishing and are desperate to earn a living, villagers said. It is a challenge for a boat with around five personnel to keep a tab when hundreds of fishermen venture out, an official said. "There is no denying that several boats manage to enter the creeks in the core areas." "We have taken up awareness drives among fishermen, urging them not to risk their lives and to try alternative sources of income like apiculture (bee-keeping for honey), but it appears that the lure of the

earnings that crabs fetch is stronger,” an official said. Metro had reported on Wednesday that a patrol vessel equipped with searchlights was deployed by the forest department on Tuesday to prevent fishermen from entering and mooring their boats deep inside the Sunderbans.

### **West Bengal: Fisherman mauled to death by royal Bengal tiger**

<https://www.telegraphindia.com/west-bengal/fisherman-mauled-to-death-by-a-royal-bengal-tiger-in-sunderbans/cid/1807037>

"A fisherman was mauled to death by a royal Bengal tiger and another is feared to have met a similar fate in separate incidents early on Wednesday in the Sunderbans. Fisherman Soumen Roy was fatally injured in the Pirkhali forest area, while in Benefeli a tiger dragged another, Atul Baidya, inside the jungle. Atul was not found till Wednesday evening. Forest officials have launched a search for Atul. With these two fresh cases, at least 20 fishermen have been reportedly killed by tigers in the Sunderbans this past year, an official of the state wildlife department said. Both Soumen and Atul had been fishing for crabs in separate groups. Sources in Jharkhali coastal police station said that Soumen, along with a team of five other fishermen, had left home to catch crabs in the forest area on Saturday.

A tiger attacked the fishermen near Pirkhali when they were returning home. Soumen's brother, Paritosh, who was also among the group of fishermen, recalled the attack: "The tiger attacked us when we were sailing close to a muddy bank. The attack was sudden and dada became its main target. We tried to resist but my brother died on the spot as he had been badly mauled." In the other incident, fishermen, including Atul, from Kultali-Kantamari had gone to catch crabs inside the Benefeli forest area on Monday. Local sources said when team members were returning home early on Wednesday after catching crabs, the tiger dragged away Atul. "The animal was too big and strong for us (to resist). It disappeared inside the forest dragging Atul by its jaw," a fellow fisherman said. A senior official of the state wildlife department said there was a strict ban on entry inside the jungle. "We have taken up awareness drives among fishermen, urging them not to risk their lives and try for alternative sources of income like apiculture (bee-keeping for honey), but it appears that they hardly paid heed." Villagers said many migrant youths who had come home during the lockdown had opted for fishing and were desperate to earn a living.

### **West Bengal: Fish industry in troubled waters**

<https://www.thecitizen.in/index.php/en/NewsDetail/index/9/20005/Fish-Industry-in-West-Bengal-in-Troubled-Waters>

"Fish lovers in West Bengal may soon be threatened with a scarcity in the supply of fish or rise in price or both. The fishermen and the trawler owners are very angry. Without giving a

thought to the consequences of a continuous arbitrary rise in the price of diesel, petrol, kerosene and cooking gas by the central government has led to severe disbalance in the finance and employment sector in the indigenous shipping industry in West Bengal. Add to this, the absence of subsidy for petrol the trawler owners, the fishermen and the allied workers were waiting for, which according to them, was ensured by the Central Government. Bengal's small-scale fisheries have an annual turnover of Rs 500 crore.

The peak season for small-scale fishermen is between October and February and for large and medium-scale players it is between June and April. After Prime Minister Narendra Modi announced the nationwide lockdown on March 23, 2020, all fishing activity came to a standstill. The trawlers that were still at sea had to hurry back with their catch but the smaller players were left holding nothing. The situation is graver today than it was during the lockdown. According to a recent report, 10,000 of the total 15,000 trawlers in West Bengal have been forced to come to a halt because of the continuous spike in the price of diesel. The rise in price has not been overnight but has been going on for the past several months. 15,000 fishing trawlers are already there for fishing.

Then, according to the leaders of associations in fishing and trawler businesses, the government fell back on its promise to implement a minimum support price to them. Shyamsundar Das, General Secretary of the Digha Fisherman and Fish Traders Association expressed regret because all hopes of the fishermen and trawler owners to get diesel at a support price from the government at the centre would be enacted by the Government at the centre. This did not happen. There are four lakh fishermen who are directly engaged in fishing in West Bengal.

Around six lakh people are indirectly dependent on this industry for their daily bread. Samaresh Tola of East Midna

pur who lives in Junput, says that he owns five trawlers "which I have been forced to stop from running for the past two months before the rise in the diesel price. Each trawler employed 15 fishermen and now I am finding it a huge struggle to look after the upkeep of these families that comes to around 75 people."

And their families of course. Subodh Chandra Kanda of Khejuri who owns seven trawlers complains that all seven trawlers have not touched the ocean waters for three months and the families of the fishermen I employ are in a very bad situation. 12 to 15 fishermen live in each trawler who sail in the trawlers for seven to ten days at a stretch. There are three trips every month. Earlier, each such trip demanded Rs.1 lakh 30,000 only for diesel. Add another Rs.20,000 for the ice needed to preserve the fish on each trawler.

The salary of the fishermen per trip amounts to Rs.50,000. Each trip calls for 2000 litres of diesel. This is besides the associated expenses on fishing nets, the food needs of the fishermen, different kinds of rope, the driver's salary, maintenance of the tractors, all of which mean a cost

of Rs.70, 000 per month. The smallest fishing dinghy (for fishermen who do not take trawlers) costs Rs 80,000 and a small gill-net comes for Rs 25,000. For every trip, the owner of a trawler would make a profit of rRs.30, 000 a month.

But this was before the rise in the price of diesel. Now, after the constant rise in price, the cost of each trip has gone up by Rs.30, 000 swallowing the entire profit and turning the business that will soon be threatened by losses, labour trouble, rise in the price of fish in the wholesale markets and fall in the demand for the same pushing the entire industry into further crisis. The decision to allow or not allow a minimum support price lies with the Government at the centre and not the state. The trawler owners are continuing to pay the fishermen their monthly salaries. But how long they will be able to continue this; they themselves are not sure about. The supply of fish will come down sharply and the average consumer may have to cut fish out of his daily diet, a must in every Bengali family.

If the price of fish rises and the demand falls, there will be associated rise in the price of vegetables due to the forced change in diet patterns of the average Bengali family and also due to the rise in the price of transport fuel. Bijon Maity, General Secretary of the Kakdwip Fishermen Welfare Association says that around 80% of the total cost of the business is spent on diesel since the rise in its price. So, both the fishermen's associations and the trawler owners have decided to sit on dharna on February 22 at Rani Rashmoni Road in Kolkata for the whole day which will comprise of several thousand fishermen in the state.

The movement will continue till the Central Government does something positive about the support price to those directly involved in the business of fishing. This is just a rough estimate of a slice of the large fishing industry in West Bengal. In real life, the industry is much larger and complex than what is described here. But this is the basic problem that applies uniformly to every level of the fishing in West Bengal and elsewhere in the country.

**West Bengal: 43 yrs on, faulty Farakka lock repair may release flood of hilsa happiness**

<https://timesofindia.indiatimes.com/city/kolkata/43-yrs-on-faulty-farakka-lock-repair-may-release-flood-of-hilsa-happiness/articleshow/80870829.cms>

"A faulty navigation lock at the Farakka Barrage across the Ganga, which had hindered the migration of hilsa upstream the Hooghly as well as the Padma for 43 years, will finally be set right this year, paving the way for the return of ilish — the fish that brings shimmers of silvery happiness to countless Bengalis — to the Ganga.

Once found in abundance in the river till as far upstream as Allahabad and even further up till Kanpur, the hilsa's progress beyond Farakka — where the Ganga splits into the Hooghly and the Padma — was halted after the construction of the faulty navigational lock in 1978. The project that will see the hilsa's revival in the river is actually the revitalisation of a navigational channel

for passenger and goods vessels to travel from the sea to Allahabad via Kolkata, Farakka, Patna and Varanasi. Work on navigational locks at the barrage, 280km upstream from Kolkata, promises a fresh lease of life for Kolkata Port.

And, no less importantly, it gives gastronomes a reason to rejoice. The new navigational lock will facilitate smoother and faster dispersal of vessels. It takes about two hours or more for a vessel to pass upstream or downstream of Farakka through the existing lock. The new lock will reduce the passage time to just 38 minutes. If another vessel moves in the reverse direction, the operating time will be only 23 minutes. “In addition to smoother and faster movement of vessels, fish lovers in Bengal and beyond till Prayagraj in Uttar Pradesh will now be able to enjoy fresh hilsa as the new lock will help the fish swim all the way from the Padma in Bangladesh upstream the Ganga,” said an official of L&T Geostructure that is executing the project at a cost of Rs 359 crore.

A marine fish found in the Bay of Bengal as well as the Arabian Sea, the hilsa swims upstream to breed in the sweet water of rivers. The young fish then return to the sea, only to return when they become adults and are ready to breed. Utpal Bhaumik, former division head of Riverine Ecology and Fisheries at the Central Inland Fisheries Research Institute (CIFRI), says reopening the navigational channel would help preserve the biodiversity of the river. “Keeping the sluice gate open at Farakka Barrage higher than the current level for four hours every day will help hilsa swim from the Padma and the Hooghly to the Ganga and lead to greater chances of spawning,” he said. Bhaumik, though, feels that the quantity of hilsa in the Ganga is unlikely to reach the level prior to the construction of the barrage.

“A large volume of fish would have been netted in the Padma before reaching the navigation lock. As for the Hooghly, siltation in the lower reaches of the river has made the fish scarce even in sections closer to the sea. For a true revival, the Hooghly has to be dredged and the silted channel at the mouth of the estuary opened up,” the fish expert said, pointing out that the paucity of fish in the river had led to 80%-90% of the catch happening at sea. Sushmita Mondal, who was earlier with the International Union for Conservation of Nature (IUCN), which has worked extensively with Bangladeshi authorities on hilsa conservation, is also concerned about the fish changing its behaviour following years of facing the obstacle at Farakka.

“Before Farakka, some say there was a resident hilsa population downstream. Very little is known about the evolutionary changes that have happened, and how the fish has adapted over the years. There is a need for more studies, particularly after the lock is restored, to know more about the fish. We need to put in place monitoring protocols and record the data,” she said.

**West Bengal: Do you know about the tiger widows of Sunderbans?**

<https://www.youthkiawaaz.com/2021/02/tiger-widows-in-sunderbans/>

"The lockdown and cyclone Amphan, which has left most islanders in the Sunderbans into double whammy, have resulted in the loss of livelihood for many people. Even inexperienced groups those returned from other states after COVID-19 breakout have been venturing into the forests in search of a living.

As a result, they are easily falling prey to tiger attacks. Every year, people residing at Sunderbans risk their lives and enter the mangrove forests which are home to around 100 Royal Bengal tigers. They depend on risky businesses like fishing and catching crabs in the rivers and creeks. They also here depend on gathering tons of honey from the hives of wild honey bees. Tigers have killed many people in the past but they still enter the forest as it is a lucrative business and their families depend on it.

Last year, the simultaneous occurrence of cyclone Amphan with the crisis caused by the ongoing pandemic of the Coronavirus is serving as a double whammy for these communities living at remote villages of Sunderbans delta. According to a study, where 54 of the 102 islands support human settlements, one in five households now has at least one family member who has migrated for better livelihood but the pandemic has pushed them to return home. The lockdown has left them without a livelihood in Sunderbans.

"There is hardly any money in the house to buy the essentials. Moreover, cyclone Amphan blew away the life we had managed to rebuild over the past years and slammed us to ground zero," said Montu Kayal, a villager of Satjelia's Bidhan Colony. Due to pollution and overfishing by trawlers small amounts of fish available in rivers in the buffer zone of Sunderban Tiger Reserve. So nowadays locals enter the core area to fetch a good quantity of fish. Every year, thousands of people enter the forest to collect honey and catch fish, crabs – legally and illegally – and get attacked by tigers and crocodiles.

During one year, 22 people killed by tiger attack while sneaked into the forest "illegally" to collect honey and catch fish, crabs. Of which 16 deaths were reported after May 20, the day Cyclone Amphan hit the Sundarbans. Every year, from October to January small groups of men leave for fishing. It is the peak season for catching crabs and fish. They leave everyday morning and return in the evening.

"Though it is illegal to enter the core area of the tiger reserve, the villagers of the Sunderbans have not been provided alternative opportunities to survive and since the fish and crab yields in the buffer zone are not substantial, they are left with no option but to risk their lives every day," said Pradip Chatterjee Secretary of Dakshin Banga Matsajibi Forum (DMF). Kuntala (34), widow of Rathin Sarkar (36) resides at Jamespur village in Sunderban's Satjelia. Rathin, a 'mouli' out on a honey collection was found dead on April 20 this year. His body apparently half-eaten by a tiger at Pirkhali jungle in Sunderbans. It was the first case of man-tiger conflict since lockdown announced. His father Niren Sarkar w

as also killed in tiger attack while entered into the forest to catch crab after cyclone Aila hit their island in 2009. Extreme poverty and lack of livelihood push villagers to enter into the core area of Sunderban Tiger Reserve. Sulata Mondal (40) resides at Lahiripur village in Satjelia. Her husband, Sujit Mondal (47) lost life in tiger attack on April 29 this year while sneaked into the forest for fishing. Traditionally Sujit and his family catch fish and crabs from creeks of Sunderbans. Sulata said that she also accompanied her during fishing. “But I didn’t accompany him on that day, there were three people in a small boat and a tiger dragged him away inside the forest. We didn’t receive his body,” she added.

Gita Mistry (50) villager of Bidhan Colony in Satjelia. Her husband Uday Mistry (61) lost life in a face-off with Royal Bengal Tiger on June 6. He used to venture in the licensed boat and catch fish inside the buffer zone of Sunderbans. “Due to the lockdown, the forest department didn’t issue any entry pass this year. We had no money in hand after three months of lockdown. He entered the forest with a small boat and planned to return on the same day but it was our luck.” Uday’s body has been recovered by the forest department but a major portion of the body was missing. Debi Mistry (40) resides at Lahiripur village in Satjelia. Her husband Jamini Mistry (50) died after being mauled by a tiger on July 4 this year. Jamini and his son Milan along with other two fishers from the same village ventured into creeks inside Dutta Forest in Sunderbans. Before anyone could realise what was happening, the tiger had jumped into the boat and attacked Jamini. “I also jumped on it (tiger) while attacked my father’s leg, I tried hard but it was about 10 feet long and strong. It bit his neck within a few minutes.

I could save my father if other two helped timely,” said Milan, 26 years old son of Jamini. Sushila Mondal (50) widow of Susanta Mondal (56) resides Bidan Colony in Satjelia. Susanta along with three fishers went to catch crabs in a canal near Marichjhapi forest and As soon as Susanta got down the boat, a tiger attacked him, killing him on the spot on August 2 this year. Kanchan Raptan (27) widow of Baburam Raptan (33) resides at Kumirmari in Sunderbans. According to his neighbours, the tiger attacked Babu from behind at Chilamari forest inside the Jhila forest on September 3. “The tiger tried to drag Babu deeper into the forest when some of his mates managed to hit it with a bamboo it then let go of Babu and went away,” his neighbour at Kumirmari. Ashtami Mondal (25) lives with her 4 years old son at Kumirmari. They depend on support from their family members.

Her husband Haripada (34) was only earning member in the family. He was a migrant construction worker, returned from Kerala in August and booked his return ticket on the first week of October but he lost his life on September 29 while went to fishing with four friends. “He didn’t sell fish, he went to the jungle to take some fresh fish for our lunch,” she replied. His body was found by a team of forest officials and locals, deep inside the forest between Kumirmari and Jhilla. Sabita Mondal (30) is one of the recent tiger widows living at Lahiripur village in Satjelia West Bengal’s South 24 Parganas district. It’s been just four days while I visited her house. The

death of her husband, Sashankha (45), has left her with two children those are just twelve and fourteen. “I don’t know how can I raise my children in coming days,” she said.

“There are around 3,000 tiger widows in the islands of the Sunderbans, women whose husbands have been killed by tigers while they were fishing, catching crabs or collecting honey for their livelihood”, said Nakul Jana, president of the Sundarban Tiger Widow Welfare Society. These bagh-bidhobas (tiger widows) therefore, cannot claim compensation and so they rarely inform the authorities about tiger-linked deaths. Every year 80-100 people killed in tiger attack but it is hardly reported. In many cases, the bodies of those attacked by tigers cannot be traced and they are treated as missing persons.

“These bagh-bidhobas (tiger widows) are the sole breadwinners of their families, usually taking care of 3-4 children and sometimes also elderly members of the family. Almost every villager in these islands has a tragic story to narrate but the government doesn’t even care about them,” he added. Piar Chand, Director of Sundarban Biosphere Reserve said that state forest department has been running mitigation programs among local villagers to reduce human-tiger conflicts in the region. “More they enter into the forest the more people will be killed in tiger attacks,” he said. However, Pradip Chatterjee of DMF claimed that lack of fishes in rivers of Sunderbans leads small fishers into creeks inside the core area.

“They (fishers) traditionally catch crabs and fishes in the rivers for long time but the recent conservation measures by adopted forest department made them intruder in their own land,” he added. Experts say the rising count of people dying in tiger attacks in Sundarbans is a result of humans pushing further into Tiger’s territory. In 1952 the human population there was around 1.4 million, which, as per the Census of 2011, has increased to 4.4 million. Local villagers in the delta are facing socio-economic inequalities due to lack of livelihood opportunities, regular man-tiger face-off and frequent natural disaster which, making women and children even more vulnerable than usual.

Many of the tiger widows have children in the age group of 9-14, who are unable to continue their education after their father’s death and end up doing the same perilous jobs as their parents.

### **West Bengal: Hundreds of dead fish in Kurti stream, poison suspected**

<https://www.telegraphindia.com/west-bengal/hundreds-of-dead-fish-in-kurti-stream-poison-suspected/cid/1805293>

"Hundreds of dead fish of different varieties were found floating in Kurti, a stream in Matialli block of the Dooars region of Jalpaiguri district on Sunday. Block administrative official who visited the site suspect that unscrupulous fishermen might have poisoned the stream. An inquiry has been initiated into the fish deaths, officials said. Dead fish were spotted first by morning bathers who carried them home.

“It seems some people have put poison in the water. There had been similar incidents earlier in rivers like Teesta and Karala that move through Jalpaiguri town. But in recent years, this is the first time that such an incident has been witnessed in Kurti,” said Jugal Chandra Roy, a member of Matialli panchayat samiti. Later in the day, officials from the state fisheries department who visited the spot, cautioned people not to consume the dead fish. “Samples of water and dead fish have been collected for testing. People should abstain from consuming the dead fish,” said an official.

**West Bengal: This 22-year-old is helping villagers in the Sundarbans improve their livelihoods**

<https://yourstory.com/socialstory/2021/01/monday-motivation-sundarbans-cyclone-village-organic>

"The 4,000 square miles of dense swamplands that span the India-Bangladesh border – the Sundarbans – are believed to be the largest continuous mangrove forests in the world. The area is made up of an intricate network of waterways, saltwater forests, mudflats, and over 102 islands, many of which are uninhabited except by over 260 bird species, estuarine crocodiles, river dolphins, Bengal tiger, and host of unique flora and fauna. The land of Amitav Ghosh's *The Hungry Tide* is an evolving landscape where successive cyclones have consumed and birthed new islands. One thing remains a constant – the struggle of the 4.5 million people who live in the 54 inhabitable islands in the archipelago – to survive amidst these conditions and eke out an income through farming, fishing, and collecting honey.

But the outbreak of the pandemic and the damage caused in the wake of Cyclone Amphan saw homes swept away and crops inundated with saline water, further affecting their already sparse living. It was during the efforts to rehabilitate and rebuild the homes of the villagers that 22-year-old Kolkata native Ayush Sarma became involved with collecting funds to build 1,200 homes in eight villages in the locality. Ayush's interest in the voluntary and non-profit sector began in school when he and his friends at La Martiniere collected relief material to send to the victims of the Nepal earthquake in 2015.

“I started getting involved in social work, and was going out into the field and working with NGOs, victims of sex trafficking, and kids with special needs,” Ayush says. It was while working with villagers in the Sundarbans that he first forayed into social entrepreneurship. Ayush had always believed in working for the uplift of women and children in marginalised communities. But when his team did an analysis of how the funds they were sending were being spent, he realised that the men, too, had stopped working and were listing non-essential items in their list of requirements with NGOs.

“That's when I decided to segue to a social entrepreneurship model where we created work opportunities for both men and women, thereby creating a steady source of income that would

also benefit the community at large.” Ayush decided to leverage the traditional income stream of the area (Bali village) and created an organic honey brand under which the villagers could sell hibiscus honey. The flower grows in abundance in the area and is a favourite with the bees, owing to its high pollen content. “The honey is organic and completely cruelty-free. Most big companies need more honey than the hive can produce so they extract the entire honey and leave nothing for the bees. In the process, they end up killing the bees. The villagers give enough time for the bees to leave the comb before gathering the honey.”

He says the locals never harm the trees, animals, and bees because 90 percent of the employment in Sundarbans comes exclusively from farming and beekeeping. “The villagers there have their own connection with Mother Nature,” he says. Ayush markets the honey under Sweetness of Ethics, a social entrepreneurship model and brand, created as a separate initiative under Ek Packet Umeed — a student volunteer NGO that he founded following the Nepal earthquake. They have set up an eponymous website to market the honey. “We undertake a lot of activities as part of the NGO, and did not want Sweetness of Ethics to get lost in that,” he says. He says that 70 percent of the proceeds from the sales go back into the community while the remaining 30 percent is used for the marketing of the brand.

Ayush and his fellow volunteers have also been supporting other programmes in the region. “The Sundarbans is divided into two parts by the Ganga (river). One side is so remote that we have to use a steamer to get there.” The team from Ek Packet Umeed was forced to send a local team to ascertain the damage in the area and find out what kind of support the locals needed. “The trees had fallen and even boats could not access the area. After speaking with NGOs, many of whom had been working in the area for nearly 30 years, we made a list of 15 organisations we could reach out to.”

Ayush started interviewing people who were running these organisations and shortlisted three organisations, including the Sundarban Foundation run by Prasenjit Mandal. The foundation is supporting widows of fishermen, who were killed by tigers, by skilling them, educating their children, offering medical support, including free eye check-ups and distribution of spectacles to those who need them completely free of cost. “Students who go to local government schools attend our remedial centre where we ensure that they have understood their lessons. The centre is used for vocational training in the evenings; we teach khadi weaving, electrical work, plumbing, and speaking English so that some can get jobs at nearby hotels.

We have planted over 2,000 trees for the women’s self-help groups (SHG), and they are growing mango and jackfruit.” The Ek Packet Umeed team has connected the SHGs with organic stores who buy all their produce at a fair price. They have also trained farmers of the village in crop rotation so that the land does not lie unused for a major part of the year. “We have created a scenario where both men and women are earning and children are getting an education. Today, the average income of the villagers in Bali village has increased from Rs 2,500 to Rs 10,000,”

Ayush says. The team is planning to introduce a courtyard concept in the village - a school on one side, a vocational training centre on the other, and a health and community centre in the centre. “Once we have achieved certain parameters, we will move on to another village as we don’t want them to become dependent on us. We plan to help more than 20 villages in the next 10 years,” Ayush says.

### **West Bengal: Sunderbans ends Covid year with two dozen man-animal conflicts**

<https://timesofindia.indiatimes.com/city/kolkata/sunderbans-ends-covid-year-with-two-dozen-man-animal-conflicts/articleshow/80193429.cms>

"In a five-year high, 24 lives were lost in man-animal conflict in the Indian Sunderbans in Covid year, the last reported on the last day of 2020, as economic distress pushed people deeper into tiger territory. At least 18 of the 24 deaths — mostly after villagers ventured into the swamps to collect crabs, fish and firewood — were reported after Cycl-one Amphan last May. Tiger attacks claimed 13 lives in both 2019 and 2018. In 2017 and 2016, the count stood at 11 and 6, respectively. While foresters are still compiling data, local sources said the actual figures could surpass 24 as many cases go unreported due to the hostile terrain of the mangroves. Experts pointed out how lockdown-induced unemployment and Amphan resulted in higher dependence on natural resources — a phenomenon also noticed after Cyclone Aila struck in 2009. On December 31, 2020, a villager of Lahiripur Chorgheri was killed by a tiger in Baghmara II forest — a part of the core area where fishing is banned. Sources revealed that the deceased fisherman, 42-year-old Prashanta Mondal, had gone on the trip along with three others.

A senior researcher on the Sunderbans, who has been tracking the developments post-lockdown and Amphan, said apart from those who lost jobs and returned to their homes, villagers who had stopped venturing into the woods have now started re-entering the forests, raising chances of a “fatal outcome”. “I interviewed 19 people from villages under Sandeshkhali II and Patharpratima and 17 of them returned home after losing their jobs in lockdown in Gujarat, TN and Kerala. Two others, who were staying here and had stopped entering the forest, are now resorting to their old skills of catching crabs,” said Anurag Danda, senior visiting fellow with Observer Research Foundation. Danda said of the 17 who started depending on the forest afresh for a living, one lost his life soon after his arrival.

“Negotiating the muddy terrain to catch crabs is also a skill. Years of detachment have dented their skills, making them more prone to tiger attacks,” he added. On December 27, Kaushalya Aulia (48) of Lahiripur Duttapara was killed after she ventured into the forests near Kalir Char — also a core area. Her body, though, could be recovered. A senior forest official said in many cases, particularly when bodies can’t be recovered, they don’t have information on the actual place of incidence — an indication of the mismatch between official and unofficial data. “Most of these accidents are taking place in areas where fishing is banned. There are hardly 4-5 cases where victims’ families are entitled to compensation.

For the rest, we officially don't register them as there is no question of claiming compensation," he added. Sunderbans Tiger Reserve field director Tapas Das said the lure of crabs — a kg of which is sold for anything between Rs 500 and Rs 700 — was forcing villagers to enter prohibited areas. "To catch crabs one has to get down from the boat and scan mudflats, which makes him/her an easy prey," Das said, adding that the department has conducted awareness campaigns, given leaflets and even distributed LPG cylinder kits so that fishermen don't venture into the woods in search of firewood.

### **West Bengal: Sundarbans: Cooperative Society Aims for 3-crop Pattern as Barrier for Natural Calamities**

<https://www.newsclick.in/Sundarbans-cooperative-aims-for-3-crop-pattern>

"Gosaba, West Bengal: Following the footsteps of Sir Daniel Hamilton, who in 1902 had started the cooperative movement in the Sundarbans, various cooperative societies including the Tagore Society for Rural Development of Rangabelia in West Bengal's Gosaba is continuing its tryst to develop the remote areas of the delta region, despite being plagued with several problems. "The main problem here is the cropping pattern which includes single harvesting of a particular strain of called rup patnai locally, which can be traced to the time of Hamilton himself. In Tagore society, we are trying to find the second and third crop that can be suitable for this soil," said S Bandopadhyay, a soil chemist with Tagore Society.

The Tagore Society has sought help from the MS Swaminathan Research Foundation (MSSRF) to materialise the three-crop pattern in the Sundarbans. Notably, the MSSRF, a nodal body with international level expertise on the subject, has recently implemented environment friendly projects even in Myanmar. In its newsletters, it had pointed out the successful efforts of seeding and harvesting salinity friendly indigenous variant of paddy in coastal areas, which retains moisture along with re-planting of mangrove along the shores. Incidentally, Tagore in 1932, too, had come to Gosaba on the request of Sir Daniel Hamilton and spent a day in the island to witness the cooperative movement in the island. With 14 panchayats, the Gosaba Community Development block has embankments extending over 372.5 kms, the highest in Sundarban. These embankments, which are crucial importance for the safety of lives and protection of crops against daily tides, have been suffering breaches varying from 6-54 kms.

As these embankments are weak, they require proper drainage of accumulated rain water through sluice gates. However, in the absence of these, crude cuts in the embankments for drainage of accumulated rain water and channels built for providing water to large fisheries (bheris) add to the hazards. "Further, cyclones and tropical depressions are regular threats. Following loss of livelihood, large scale displacement of people takes place every year along with women trafficking. A weakening cooperative movement has led to an increase in the cases of trafficking," Bandopadhyay told NewsClick. Despite the legacy of cooperative movements in the islands, the government has taken scant help from the cooperative to protect the over 1 million

mangrove trees in the aftermath of cyclone Amphan. Even then, the society offered technological help to the concerned department of the state government for the same.

The livelihood of the people of Sundarbans has been neglected for years, epitomised by the words of Mohammad Khan, a farmer from Chotomollakhali, who said, “Jole kumir dangai bagher songe lorai koria amara bachia achi (We are fighting against the crocodile in water and tiger over the ground to sustain our livelihood).” He alleged that earlier at least bridges were constructed but since the last 10 years, even schemes like Pradhan Mantri Gram Sadak Yojana and Kanyashri have become inaccessible for the residents, due to increasing formalities. Steps taken by Tagore Society While the devastation wrought by cyclones Aila and Amphan on the livelihood of the people have been enormous, the Tagore Society has played a crucial role in rebuilding by educating farmers about new ways of farming, Khan added.

According to Goursarkar, a pisciculturalist from the area, who has seen the cyclones from close quarters, the society has also brought some hopes of natural deterrence from any such future occurrence, in the form of natural shield of mangroves and afforestation of deforested zone, rather than taking the path of concretisation of embankments. Meanwhile, Dulal Singh, former working president of the panchayat, pointed out that the present programme of planting mangroves led by the state government follows unscientific patterns, as the Goran (a mangrove plant variant ) should be planted in a single area other than the Geoa (another plant variant), rather than mix and match, which is currently being followed.

He added that the earlier followed this natural pattern which is being violated now. Goursarkar, too, agreed, saying that the afforestation programmes should be carried according to afforestation manuals, and not the haphazard manner being followed by the government. Goursarkar also emphasised that it is the deltaic barrier – result of the years of work of cooperative societies like Tagore Rural Society – which reduced the Super Cyclone effect, as the number of those killed could be stalled at 280, as opposed to lakhs during the cyclones in 1925 and 1880. The huge number of trees uprooted (which required Army intervention to clear the roads), actually reduced the effect of the mighty cyclone in the Gangetic delta.

“While, nearly one lakh trees were uprooted during the last cyclone, another five lakh trees can be considered as the fulcrum of thwarting further such cyclones,” said Nitai Chandra Mondal, a farmer in Dayapur area of Sundarbans, whose 2 bigha land remains fallow for majority time of the year. He highlighted the need for a new strain of paddy that can withstand saline water as crucial, adding that it will bring a sea change in the livelihood pattern of the people living in the area. “It was just last week that a fishermen, Prasanta Mondal lost his life in a tiger attack in Chamta. These deaths can be reduced if there are alternative occupations or three-crop pattern is developed in the area. The cooperative movement is taking a right step in that direction,”

Mondal told NewsClick. According to environmentalists, along with early warning system which helped relocation of nearly 5 lakh people in the pre-cyclone period especially in the

riverine low-lying and shore facing areas – where many embankments have been breached, construction of multifaceted cyclone infrastructure and improving green cover using NREGA schemes proactively can prevent re-occurrence of devastation of such magnitude in the coming years. “If need be, the state can also seek technical assistance from developed countries to create environment-friendly infrastructure following the Rio protocol, in case the central government is reluctant to follow this well accepted route,” said Amiyo Patra, a former honorary forest warden.

### **West Bengal: Hard time for Fisheries industry since lockdown**

<https://www.uniindia.com/hard-time-for-fisheries-industry-since-lockdown/east/news/2279432.html>

"The fisheries industry had a bit of a hard time early on since there was a lockdown. Then we overcame that difficulty," stated Chandranath Sinha, Minister in Charge, Fisheries Department, Government of West Bengal, in an exclusive tete-a-tete with UNI.

Q What are the main challenges and crisis Fisheries sector is facing post lockdown scenario and what is your take to get rid of it? A. The fisheries industry had a bit of a hard time early on since there was a lockdown. Then we overcame that difficulty, and everything happened including seeding of the fish-lings. The fear that was there in the initial period, I hope is no more.

Q. West Bengal Government is supposed to train fishermen to minimise sinking of fishing trawlers related accidents. How many fishermen have been trained to date? A. The training procedure has not started yet, it has started from this month i.e. December. We will start giving training in every district.

Q. Sundarban Development Minister Manturam Pakhira earlier stated that fishermen sailing trawlers without life jacket should lead the cancellation of trawler license. Have you already started doing so? A. No, this system has not been launched yet. We earlier had tender for the life jacket but sadly the quality mismatched our desired standard. So we have to cancel it. That's why the life jacket project is still pending.

Q. State Government started selling fish directly to the counter during the lockdown. Which districts are now effectively doing so and which districts are under the scanner to implement the same? How many vehicles you have on board now? A. The project is going on but we have not yet reached all the districts. It is still on at the Kolkata level and these are all running from SFDC (State Fisheries Development Corporation) and Benfish Corners. Besides, the co-operatives are selling by themselves through counters. There is a lot of demand for it. Also, Benfish and SFDC are supplying products with orders through their online app. All these are going on at Kolkata level. We recently signed a MoU on the PPE model with Benfish to cater the requirement of Greater Kolkata, specifically on Barasat, Barrackpore, Dankuni and Baruipur area. 25 stalls are being set up for these areas so that if anyone orders raw fish, processed fish or fried fish items,

they will get that delivered. After that, we want to reach other districts gradually. Benfish has 25-30 cars. SFDC also has about 25-30 cars. We also have a PPE model with a company called S B Agri Industries so that they will have 25 stalls which will be inaugurated on December 25.

Q. How much effective it turns through SFDC mobile app? How much employment has been generated through this home delivery scheme? A. Yes, there has been employment generation, of course, but we do not do it directly, it has been given to third parties. It is very difficult to say the exact number of people they hired.

Q. How much boost in consumption have you seen after organising Fish Festival at Nalban? A. We have done it every year. And the demand for fish has increased a lot, as a result, is for sure. You may have seen earlier that in most of the restaurants fish were not on the menu list. And now you will see that people are earning from many exclusively fish restaurants. People are consuming more fish.

Q. Do you think the insurance industry has a great role to play in the development of fisheries sector? Does the government have any plan to tie up with any insurance sector player? A. Yes, they still have insurance. Even so, in case of an accident or death, we pay the claimants. Most of our people had insurance. Besides with this, Chief Minister Mamata Banerjee recently announced the 'Swasthya Sathi' and we are very happy with it. As a result, everyone fell under the one insurance criteria. Fishermen are the poorest part of the people and they are all very happy with 'Swasthya Sathi'.

Q. Is West Bengal fisheries industry is affected by bottom trawling? (Bottom trawling is trawling along the seafloor. It is also referred to as "dragging". The scientific community divides bottom trawling into benthic trawling and demersal trawling. Benthic trawling is towing a net at the very bottom of the ocean and demersal trawling is towing a net just above the benthic zone) A. These are not in our hands; it is entirely in the hands of the Central Government. Whenever there was a meeting or discussion, we informed or sent letters repeatedly so that this bottom trawling can be stopped. Also, trawlers from neighbouring countries are entering. Only about 12 km is in the hands of the state, up to 200 km is in the hands of the central government. In the current situation, fish generally is not available up to 12 km. Meanwhile, we have repeatedly asked Central not to issue the license for the foreign trawlers. Otherwise, they are entering a lot of modern types of machinery. As a result, our difficulties with fishing are increasing day by day.

Q. Does West Bengal have seen any economic revolution after the implication of Blue Revolution? As we know there was a projection of approximately 18.90 crores for Centrally Sponsored Scheme on Blue Revolution (CSS BR)? A. In the Blue Revolution, they talked about various schemes and we had sent needed documents. Then it was said that this paper or that paper will not work. So we got the minimum amount. Again we have been asked to send a scheme of Rs 250 crore and we sent it again. PMMS is a Rs 20,000 crore project we heard but

unfortunately, we have been asked to send only Rs 250 crore scheme in 5 years while West Bengal stood second after Andhra Pradesh. Though we have doubts about how much they will sanction.

Q. May I have the approximate number of beneficiaries through State Fisheries Development Corporation (SFDC) this fiscal? A. Kolkata people are very much in it. Fish is also being brought to Kolkata from Digha. In the lockdown, we have supplied fish to the towns of Burdwan and Birbhum districts. From Digha to Contai, on the other hand, we also have sold and supplied fish in the Sundarbans area. Lots of people have been benefited.

Q. Do you have any specific business model for the development of the Fisheries sector? A. We are expanding with more centres in the coming days. Our main target is to fill the gap. Demand is rising by leaps and bounds. The demand is increasing as we are meeting the demand. People are consuming a lot more fish. We have proved that 'Machhe Bhaate Bangali'.

Q. Are the production remains sufficient or we are importing a lot to fulfil our daily need? A. The matter of import is different. Now the market is open. Our fish is going to Bihar, NorthEast, Assam or Odisha. Fish from Andhra Pradesh, Madhya Pradesh, Chhattisgarh is coming here. On the other hand, our Shrimps and Prawns are going to Delhi and even abroad. It depends on the costing. Andhra people rarely consume fish, so they can sell the larger amount outside. In West Bengal, we consume a lot of fish, so we have to meet that demand first and then we can export it out. However, we are trying to fill the gaps that we have. We have been able to explain to the people that fish farming is beneficial. Now people are becoming entrepreneurial. Now much-educated youth are coming into the business. They are taking loans and working in the field. Hopefully, in the coming days, we will be able to fill the gap.

According to Prof. Bipul Kumar Das, Dean, Faculty of Fisheries Science, West Bengal University of Animal and Fisheries Science, ""There are 25 Fishery colleges and 2 faculties accredited by the Indian Council of Agricultural Research (ICAR). West Bengal University of Animal and Fisheries Science is one of the faculty. Fisheries are taught in the same syllabus all over the country. There is a Student READY (Rural Entrepreneurship Awareness Development Yojana) program after three years out of four years course. This programme has been launched after Prime Minister Narendra Modi came to the saddle."" ""We also have a lot of centrally funded projects. At present, a project called 'Cage Culture' is running under my supervision in Kandi, Birbhum. Most of the projects are of Rs 4-5 crores. Fortunately, there is a growing interest among students to come to study Fisheries. Interestingly, about 20,000 forms have been submitted for admission in 30-35 seats and out of them we have received more than 5,000 such forms where the students got more than 90 per cent marks.""

### **West Bengal: Golpata trees dying a slow death in the Sundarbans**

<https://www.dhakatribune.com/bangladesh/nation/2020/12/28/golpata-trees-dying-a-slow-death-in-the-sundarbans>

"Till five years back, Mir Quamruzzaman Bachchu believed that the identity of the Sundarbans was interwoven with Golpata (*Nypa fruticans*), a trunk-less palm species which grows naturally in patches along the river banks in the deltaic mangrove forest. Half a decade on, he says the typical trees of the Sundarbans are on the brink of extinction, with top-dying disease where the uppermost parts are damaged first with loss of leaves, affecting the palm species due to salinity.

"The fertility of Golpata has been reduced and the palm trees are in a dying state due to poor collection and trimming. If the trees remain untouched for long, their fertility reduces significantly," says Bachchu, the president of the Sundarbans Foresters Traders Federation. Golpata leaves are widely used by the people of Khulna for building thatched roof houses. The leaves of the trees grow straight up from the ground. Overall, it is an important product of the mangrove forest due to its demand among local people. Experts fear that if the locals refrain from collecting the leaves, then the growth of the trees could be affected. To increase the proliferation of the trees, they need to be trimmed regularly.

The experts say that hundreds of thousands of leaves of Golpata in the Sunderbans are dying as the trees have been failing to get nutrients from the roots. In some trees, all the leaves of some trees suffer damage, except the middle-baby ones. Forest officials and bawalis (wood collectors) say the leaves of the important trees of the Sundarbans suffer damage due to low collection that affects their fertility. According to Bachchu, "There were three wells in the Sundarbans under the Khulna west zone division and Golpata leaves were collected from the same. Now only one well is available for collecting the leaves, while the remaining lay unused." Besides, the use of the leaves is (not are) also declining among the people of the coastal areas as they now depend on corrugated iron sheets for roofing, he says.

However, sources at the Sundarbans west zone office say there are only two wells under the zone and Golpata leaves are collected from the same. In the past, people used to collect Golpata leaves from Aar-Shibsha, Shibsha and Bhadra and Satkhira well under Satkhira range. In 2017, the wells except one were designated as sanctuary, thus prohibiting collection of all types of wild resources. Earlier, nearly 1,000 bawalis used to collect the palm leaves from the Sundarbans, but now only 250 are available. Prof Nazrul Islam of Khulna University, says, "The disease is common and all that's needed is trimming. The bawalis, who have permits to collect Golpata leaves, have been repeatedly asked to clean the trees after collecting their leaves. However, most of them refrain from doing so."

"Moreover, in some cases the bawalis damage the middle-baby plant during collection. The forest department should provide training to them," he adds. When contacted, Abu Naser Mohsin Hossain, the divisional forest officer, said, "It is right that proper trimming helps the

trees to grow but the demand for Golpata leaves has been declining. Earlier, the demand for the leaves was 10 lakh tonnes a year, but now it has come down to 2 lakh tonnes."''

### **West Bengal: Rising drinking water salinity affecting health, livelihoods in Sunderbans region**

<https://www.newsclick.in/Rising-Drinking-Water-Salinity-Affecting-Health-Livelihoods-Sunderbans-Region>

"The salinity level in drinking water is rising in Sundarbans area, posing a grave threat to not just the ecology but also the health and livelihoods of villagers living in the vicinity. The rising salinity level has been flagged by a recent study by Washington-based Earth Journalism Network, comprising 12,000 environment journalists across the world. As per the sample study, some blocks in North 24 Parganas are heavily affected by water salinity. The pH (power of hydrogen -- a measure of the acid–base equilibrium) level in water of some areas in South 24 Parganas also indicated the risk of aggravating severe anthropogenic activities.

In North 24 Parganas, some blocks are already coping with the effect of heavy TDS(total dissolved solids) level in water. TDS is determined for measuring the amount of solid materials dissolved in the water. High TDS values have a harmful effect on the central nervous system of people, leading to paralysis of the tongue, lips, and face, irritability and dizziness. The presence of synthetic organic chemicals, even in small concentration, can generate an offensive taste, odour and colour in fish and aquatic plants. The report also found the presence of iron and heavy metals in the water. NewsClick spoke with the principal investigator of the study, Aparajito Bandyopadhyaya, who had visited the Sandeshkhali block and Sagar Islands to conduct the study and witnessed the day-to-day miseries of the people living there as well as the scarcity of salinity-free safe drinking water in Sundarbans.

According to him, the range of TDS in the area falls between 500–1500 mg/L<sup>1</sup>, while the average TDS in drinking water, as prescribed by the US EPA (1997), Indian Council of Medical Research, World Health Organisation and Bureau of Indian Standards is 300-500 mg/L. Salinity is measured in milligram/litre unit in a laboratory. The acceptable limit of ground drinking water is 250 milligram per litre, which equals the specific gravity of distilled water (1.000) at 20 degree Celsius temperature. In all blocks of Sundarbans region, the salinity in drinking water is much higher than the desired limit. No block reported a level below the 300mg/L, as a result of which people in the area are facing several ailments related to constant saline exposure. The blocks in North and South 24 Parganas have been known for arsenic- contaminated groundwater and much work has been done to tackle the problem, but salinity has not been taken as seriously by government till now.

As far as livelihoods are concerned, agriculture is one of the worst victims of rising water salinity with the buffer zone created by paddy fields and mangroves also facing erosion. "At just

under 6 to 8 feet ground level, yellowish white water has been oozing out, which is excessively saline. As a result, in Sundarbans we have now nearly stopped construction of shallow tubewells, said Prangopal Biswas of Shambhunagar gram panchayat, bordering the Basanti Assembly segment. Meanwhile, cases of skin ailments and other health issues by people exposed to salinity in the Sundarbans region are being widely reported now. According to Saroj Tarafdar, a medical practitioner, people have been reporting rashes, skin irritation and discolouration in body parts exposed to the saline alkaline ground water while working in farmlands. The study also found in South 24 Parganas area of Sundarbans, women were “facing high blood pressure, diabetes and thyroid problems.

It cited on Dr. Ajay Patra of Sagar block who said that in the past five to 10 years, endocrinological disorders such diabetic metitus and thyroid problems among women have gone up. In the earlier days, these problems were not there, said Gour Sarkar, a pisciculturalist in Kalidaspur gram panchayat of Gosaba block , who is now over 70 years old and takes turn to go to deep into the forest near the confluence of Chamta river, to collect crabs . Sarkar is also a mass singer whose songs on Bononbobir Pala are popular with households in the Sundrabans. Excessive salinity is also affecting flora and fauna in the area. For instance, salt is considered bad for the Royal Bengal Tiger.

While the average weight of an adult Royal Bengal tiger in other parts of India is over 180 kilogram, in the Sunderban region this has fallen to around 110 kg and even lower in some cases. Some local residents also suspect that crocodile and tiger attacks are growing due to excessive water salinity which could be making them more irritable, such as in Dayapur, Kumirmari , and Kalidaspur gram panchayats. Three people even lost their lives after the attacks, some local residents told NewsClick. The study points out that the district public health engineering laboratory was monitoring the drinking water parameter sin the 13 blocks in Sunderbans, the surveillance was still poor.

### **West Bengal: Cracks in the shield: How the Sundarbans is dying and making Bengal prone to cyclones**

<https://www.newslaundry.com/2020/12/18/cracks-in-the-shield-how-the-sundarbans-is-dying-and-making-bengal-prone-to-cyclones>

"It was the evening of May 18, 2020. Bengal, like the rest of the world, was in the throes of the coronavirus pandemic. The Indian government had imposed a strict nationwide lockdown to contain its spread. As a result, most people were in their homes. At 5.43 pm, hell broke loose, literally. Cyclone Amphan struck the state's shores, tearing a path of destruction. Amphan, which originated in the Bay of Bengal, was the worst cyclone to hit Bengal in nearly 300 years. With wind speeds after landfall of 155-165 kmph, it was categorised as a Category 5 supercyclone a cyclone attaining wind speeds of 260 kmph at sea before landfall.

According to estimates by the state government, Amphan affected nearly 60 percent of the state's population and caused damage amounting to about Rs 1 lakh crore. The worst affected area was the Sundarbans, a collection of islands in the delta where the Ganga and Brahmaputra meet the Bay of Bengal. The area is home to one of the largest mangrove forests in the world. The cyclone passed through the Sundarbans, sweeping away homes and ruining farmland. This was reiterated by chief minister Mamata Banerjee, who said on June 5 that 28 percent of the region had been completely destroyed, an estimated 1,200 sq km of a total area of 4,263 sq km. "Sundarbans is finished, she said at a press conference.

This isn't the first time the Sundarbans has borne the brunt of a cyclone, and it won't be the last. In the last 23 years, the area has witnessed 13 supercyclones. Since 2019, there have been three cyclones in 12 months – Fani in May 2019, Bulbul in November 2019, and Amphan this May. This trail of devastation assumes greater proportions when you recall that 70 percent of the people in the Sundarbans live below the poverty line, with a per capita income of Rs 13,300 per month. Fifty-four of the Sundarbans' 102 islands are inhabited by around 45 lakh people, according to the 2011 census.

Most of them depend on agriculture for livelihood, growing paddy as the major crop. Other occupations include fishing, pisciculture, honey gathering, and catching crabs. Six months after Cyclone Amphan, the people in the Sundarbans are still picking up the pieces of their shattered lives. This begs the question: what makes the Sundarbans so vulnerable to cyclones? And what does being battered so frequently mean for its ecology and people?. The short answer to the Sundarbans' woes is its proximity to the Bay of Bengal. Cyclones frequently originate from this northeastern curve of the Indian Ocean, including 26 of the 35 most dangerous cyclones in history, according to Weather Underground. And the only thing that could protect the area and therefore the rest of the state is the Sundarbans mangrove forest, which is dying. Deforestation, and a black market for timber

"The rest of Bengal, particularly Kolkata, never realises the true intensity of the cyclones, just because of the Sundarbans forest cover, said Jayanta Sen. Sen is an environmentalist who has worked on conservation of the Sundarbans for over five years. His NGO, Purono Kolkatar Golpo, swung into action after Amphan, trying to rehabilitate the people of the Sundarbans and carrying out a tree plantation drive along the coasts of some of its islands.

Sen's theory is backed up by research. Mangrove forests are well known for their ability to reduce the intensity of storms. In 2013, the University of Florida pointed out that mangroves can even reduce hurricanes the North American cousin of the cyclone from Category 5 to Category 3 through what is called the "mangrove reduction effect. But over the last 250 years, cracks have formed in the protective shield offered by the mangrove forests of the Sundarbans. In 2012, the Bengal State Action Plan on Climate Change noted that five percent of its forest cover had been lost since 1989, in spite of the area being designated as a protected biosphere reserve. A

noticeable indication of this loss is the vanishing Sundari tree, the dominant species of mangroves in the Sundarbans which gives the area its name. The tree is now a rarity, classified as endangered by the International Union for Conservation of Nature. “In our childhood, Sundari trees lined the border of our island, said Arun Sarkar, a resident of Satjelia village in Dayapur Island.

“Now, we hardly see any. The Sundari is dying from a “top dying disease. There are numerous reasons for this, as a report by the Indian Institutes of Technology noted, and they include “excessive flooding, “increased soil salinity, and “cyclone-induced stress. Deforestation is to blame as well. It was rampant until 1987, when the Sundarbans mangrove forest was declared a UNESCO world heritage site. Now, the West Bengal Trees Protection and Conservation in Non-Forest Areas Act of 2006 provides for a penalty of one year's imprisonment and a fine of up to Rs 5,000 for cutting trees in the Sundarbans.

Yet, trees are still being felled in these parts. The mangrove forests now support a sprawling underground industry of timber smuggling. Ratan Mondal, a resident of Satjelia, admitted that he cuts the branches of trees such as the Sundari as it's his “only source of livelihood. The frequent cyclones have destroyed his paddy fields, he said, forcing him to fell trees deep in the forest. Ramesh Mondal, a resident of Dayapur, said most of the trees that are felled are sold across the border, to Bangladeshi traders. “A foot of timber from a Sundari tree can cost around Rs 500, he said. “So, imagine what a 10-foot or 15-foot tree can earn us. An investigation by the Bangladeshi newspaper Daily Star spells it out: timber from the Sundarbans is sold in the black market for up to Rs 1,750 per cubic foot.

It is transported to Bangladesh through the well-connected network of rivers, and sold at a floating market in the border district of Nesarabad, exchanging hands through boats and trawlers. It's an open secret, involving forest officials on both sides of the border. Residents of the Sundarbans told this reporter that they have turned to this illegal trade in part because they no longer have land to farm. According to the state government's Action Plan on Climate Change, agricultural land in the non-forest areas of the Sundarbans shrank from 2,149 sq km to 1,691 sq km between 2002 and 2009, mainly because of frequent storms, primitive agricultural methods, and a rising population.

Though honey gathering and fishing still provide sources of income, selling timber is more lucrative. This is corroborated by Arun Sarkar, who said people have “no option other than the jungle to survive. As a result, the Sundarbans mangrove forest has shrunk from 16,700 sq km to 9,630 sq km in the last 200 years, across both India and Bangladesh, leaving it unprotected from the annual cyclones. The mangroves are dying, Sarkar said. “If we travel to the forests, we can see a large number of mangroves whose leaves have turned yellow, he said. “This means they're dying.

Rising temperatures and salinity there's another major reason for the proliferation of cyclones in the Sundarbans and the destruction of its protective cover: climate change. Mangroves grow in water with a temperature between 10 and 19 degrees Celsius. If the temperature fluctuates even slightly from this happy medium, the trees begin to die. According to the 2012 Bengal Climate Action Plan, the Sundarbans has experienced an average temperature increase of 0.5 degrees Celsius per decade over the last 30 years almost eight times higher than the global average of 0.06 degrees. Compounding the issue is the fact that the sea level in the Sundarbans has risen by 1.2 inches per year compared to the global average of 0.14 inches, according to the study.

“This happens mainly due to the low pH level of the water, which happens due to depleting levels of oxygen in the water, said SK Mukherjee, a professor of marine science at the University of Calcutta. “This again can be attributed to the depletion of the mangroves, which have the capability to absorb large amounts of carbon dioxide in both water and air. He added: “The rise in sea level, coupled with the rapid rise in temperature, gives rise to cyclones in this part of the world. The higher temperatures and proximity to the sea have also led to higher salinity in the Sundarbans' waters. Salinity increases whenever a cyclone strikes, since seawater enters the rivers and then the riverine islands. This increases the saline content of the soil which, in turn, leads to stunted growth and weak roots for the mangroves. One solution, environmentalist Jayanta Sen said, would be more rainfall.

“With more storms and more saline water from the sea coming in, the rainfall would balance out the freshwater content in the Sundarbans Rivers, he said. This isn't happening. The Sundarbans receives an average annual rainfall of around 1,920 mm, and it's falling nor increasing. A question of embankments realising the area's vulnerability to flooding, the British built embankments out of mud over 100 years ago. This embankment girdle of 3,122 km is maintained by the state irrigation and waterways department. In 2009, Cyclone Aila destroyed 778 km of the embankments, though local people estimate the loss to be much higher. Afterwards, for the first time since the British departed, the Bengal government launched a project to rebuild them, under the aegis of the state irrigation department.

Costing Rs 5,032 crore, the project proposed to rebuild the British era mud embankments with concrete, bricks and polypropylene sheets. That was in 2009. Ten years later, the project is still incomplete. An official from the irrigation department said, on the condition of anonymity, that “only 20 percent of the funds have been utilised, and only 100 km of the proposed 1,000 km has been rebuilt. The official refused to provide further information. Even where the rebuilding happened, it has not always been successful. On Dayapur Island, villagers said that chunks of the new cement embankment “wash away every time a cyclone occurs.

“We villagers sometimes rebuild the embankments with cement bags, said Arun Sarkar. “Government officials do sometimes come and help us but the construction quality is not up to the mark, as you can see. He pointed towards a section of the embankment, where the cement

had worn away after Cyclone Amphan. On Choto Mollakhali Island, the villagers said the government never sent anyone to rebuild the embankment. “This is the embankment I have seen since my childhood, said Mousumi Mondal, gesturing towards the mud embankments built by the British. They are in bad shape. “The cyclones and even the slightest bit of rain makes the embankment melt, Mondal explained.

“We then have to walk in knee-deep mud for days at a stretch. It's really difficult for us. After every cyclone wreaks havoc, the villagers get together to rebuild the embankments. But there's only so much they can do; the result is usually fragile. So, when the next cyclone hits, the embankments break, the seawater rushes into fields and villages, and crops are destroyed. Arun Sarkar is uncomfortably familiar with just how vulnerable the Sundarbans are. Eleven years ago, he lost his home to Cyclone Aila. “We used to have a house there, he said, pointing towards a stretch of river along the coast of Dayapur island. “That area was a field; I used to play there as a child. Both house and field are gone, swallowed by the rising waters. The islands flooded, 332 people died, and more than 40,000 homes were destroyed, including Sarkar's. Since then, Sarkar has rebuilt his house. But for him, and the thousands of others here, it's only a matter of time until the next cyclone comes along.

### **West Bengal: ‘God played a cruel joke’: Cyclones have taken a toll on women in the Sundarbans**

<https://www.newslaundry.com/2020/12/19/god-played-a-cruel-joke-cyclones-have-taken-a-toll-on-women-in-the-sundarbans>

"Sagarika Majhi's life is punctuated by cyclones. It's how she divides her story into different chapters. In 2010, Cyclone Aila devastated her village of Satjelia, lying in the centre of a ring of islands in West Bengal's Sundarbans. Sagarika, 43, lost her farmland and ponds to the cyclone's wrath and, as a result, her income from breeding catfish, parshe and tilapia. Sagarika and her husband, Kartick Kr Majhi, left the Sundarbans for Bengaluru, hoping to find work as construction workers. Kartick's parents were put in charge of the pisciculture business, while their son Sushanta stayed to continue his schooling. In 2019, Cyclones Fani and Bulbul swept through the Sundarbans. Sagarika and Kartick were still in Bengaluru, earning around Rs 15,000 a month between them. “The cyclones caused huge losses to our ponds, a lot of our fish died, totally damaging our business, Sagarika said. “These jobs in Bengaluru were the only source of income at that time.

Then, early this year, the Covid pandemic hit India. The couple's construction site in Bengaluru closed down, leaving them without any income. No longer able to afford food or rent of Rs 3,000, Sagarika and Kartick, like lakhs of migrant workers across the country, left for home. It was a journey of 1,976 km, from Bengaluru to Visakhapatnam on foot, then a van to Kolkata, which cost Rs 10,000, and from Kolkata to Satjelia again on foot. It took them 10 days. Sagarika hoped to return to fish farming and scrape together a living. “I had somehow managed to bring

the pond back to life after last year's devastation from Bulbul, she said. "It was my only hope of earning something. On May 21, Cyclone Amphan struck the Sundarbans. Sagarika had already shifted to a storm shelter set up in the village's solitary school the day before, along with almost everyone else in the village who lived in mud houses, like her.

"I saw the devastation with my own eyes, she said, describing how the Bidyadhari river, which flows from Nadia district to join the Raimangal river in the Sundarbans, moved with a force that she had never seen before. "Winds were gushing in. Even sitting inside the school building, I felt like it would collapse. Even living through Cyclone Aila hadn't prepared her for anything like this. Cyclone Amphan struck the shores of West Bengal with wind speeds of 150-155 kmph. In Satjelia, Sagarika's pond was ruined, covered with branches and leaves. The fish she had so carefully reared, hoping to sell them for Rs 20,000, were dead. Amphan's fury left thousands of women like Sagarika stranded, forced to rebuild their lives.

In 2018, Kolkata's Central Inland Fisheries Research Institute reported that 37 percent of the women in the Sundarbans depend on pisciculture the controlled breeding and rearing of fish to earn a living. They earn around Rs 7,400 a month. "The basic socioeconomic structure of the Sundarbans is that while men are mostly involved in agriculture and odd jobs in the forest like cutting wood and gathering honey the women do jobs back in the village, of which pisciculture is an important part, said Arun Sarkar, a lifelong resident of Satjelia who works for the state tourism department as a guide, among other things. The frequent cyclones in the Sundarbans, therefore, put these livelihoods at risk.

"After a cyclone, saline water enters the ponds where the fish breed, given the area's proximity to the sea, said Ujjal Bhowmick, a professor at the Central Inland Fisheries Research Institute in Kolkata's Barrackpore. "This increases the pH level of the water, which reduces the oxygen content of the water. Due to this lack of oxygen, the fish die. Another issue is the debris left behind by cyclones on the surface of these water bodies.

"The dead branches and leaves release chemicals containing carbon into the water, which again reduces the oxygen content, thus killing the fish, Bhowmick said. Newsland met with some of these women, living on different islands in the Sundarbans, to understand what they went through. 'We saw our roof being blown away' Tanima Majhi, 40, has lived in Satjelia for 20 years. She shares a two-room mud hut in Satjelia with her husband, their two daughters, and her husband's parents. Her husband works as a driver in Kolkata, earning Rs 10,000 a month. He sends Rs 3,000 home, the rest going towards making ends meet in Kolkata.

As a result, Tanima said, she has to handle the expenses of educating her daughters, Sonali, 14, and Sumana, 9. Like many others, Tanima too depends on pisciculture. She owns two ponds where she breeds different kinds of fish, including catfish, rohu, parshe and prawns. For catfish and parshe, she goes to the river once a month to catch them and releases them into the pond. Baby rohu and prawn larvae are bought in bulk and released into the ponds too. This, along with

the cost of fishing equipment, fish bait, and so on, costs her between Rs 20,000 and Rs 25,000 per month. Tanima earns around Rs 30,000-35,000, giving her a profit of Rs 10,000, on average. But the past year has been especially tough, she said.

“Last year, I didn't earn a single rupee from my fish harvesting, she said. “In the summer, Cyclone Phani destroyed the fish. I managed to pull through but then, Bulbul struck in November. Tanima hoped that 2020 would be kinder to her. She took a loan of Rs 35,000 from a local mahajan, or moneylender, and spent the money on equipment and prawn larvae, refilling the pond with fresh water so that more fish could breed. But her optimism was short-lived: in May, Amphan destroyed her pond. All her fish were lost. Like many others in the Sundarbans, the family had moved into a local school that served as a storm shelter as the cyclone made landfall. From the school, they watched the devastation unfold across their village.

“My house was visible from the classroom where we were stationed, she said. “We saw our asbestos roof being blown away by the force of the winds. When they returned to the house, it was completely flooded by rainwater. All the food she had stored in the kitchen was ruined, and part of her house had completely collapsed. According to Tanima, party workers were dispatched to her village by the state's Trinamool Congress government to rebuild her home. However, she hasn't received any monetary relief.

“The government officials came and asked me an estimate of my damage and I informed them about everything but till now, I haven't received a single penny, she said. “I don't know how I will repay my loan, she added, her eyes brimming with tears. “I am extremely worried about myself and my daughters' futures. The tiger widows Four years ago, Sandip Mondal left his house in Satjelia to collect crabs in one of the estuaries bordering the mangrove forests nearby. He had set up a trap the previous day, something he'd been doing his entire life. But Sandip never came home.

A few days later, his body, or what was left of it, was retrieved from the forest by forest officials. It was marked by teeth and claws, the result of a tiger attack. “I was in my home, cooking his favourite fish, when he was out, said his wife Neelima. “He seemed disturbed for the past few days as there were fewer crabs caught in his net. I wanted to lift his mood that day. Sandip's favourite meal remained uneaten. Neelima told NewsLaundry: “His body was absolutely tattered. They were only able to recover his torso. At first, I couldn't believe it was him. Her voice filled with shock, she added, “Everyday when he went to the forest, I prayed that he would come home alive. But over time I became accustomed to the dangers of the forest.

So, when the news came of his death, I was shocked. The Sundarbans is home to 96 Bengal tigers. As of 2018, nearly 3,000 women here have lost their husbands to tiger attacks, referred to as “tiger widows in the media. According to estimates, nearly 100 people die every year in the Sundarbans in tiger attacks. But what does this have to do with cyclones? “Most of the Sundarbans forest area has protective fencing so tigers and humans do not come in close contact

with each other, said Arun Sarkar. But these fences are often uprooted during cyclones, he said. Tigers then approach the villages, looking for freshwater sources. “The fences are rebuilt, he added, “but it's not humanly possible to check whether 2,125 sq km of forest area across the Sundarbans is properly fenced. The fences Sarkar mentioned are put up by the state government, and the forest and wildlife department is responsible for their maintenance. A department official said, on the condition of anonymity:

“Post Amphan, the fencing at three places – Kultali, Sajnekhali, and Bidya – was completely destroyed. Some were partly damaged in other islands bordering the forests. The official said the fences are made of nylon. “When a strong storm comes, they are easily broken, he admitted, “and tigers stray into the villages bordering the forests. They also attack people who come into the forest for their livelihoods. On average, it takes the government two or three months to repair all the fences after the cyclones. “But the frequency of cyclones has increased so much that we have to use lower quality materials, he said.

“And hence, storms break them easily. In 2007, after Cyclone Sidr passed through the Sundarbans in November, there were as many as six tiger attacks. Dr Arun Bhar, a zoologist and a member of the Bengal Wildlife Society, an NGO based in Kolkata, said tigers also stray into villages in search of food and water. The mangrove forests aren't easy hunting ground: tigers can injure themselves on the protruding roots of the trees. “Hence, they look for easy prey, and that's why they prey on humans, Bhar said. Importantly, cyclones also destroy the tigers' sources of freshwater as saline water floods the rivers, making them undrinkable.

“The cyclones also kill deer and wild boar, the main prey of the tigers, Bhar explained. “So, they stray to other areas in search of food and water, especially after a cyclone. As a result, the widows left behind now have to shoulder the responsibility of looking after their families. Neelima, for example, began working as a labourer in other people's farms, earning around Rs 3,000 per month. When Amphan destroyed a majority of the farmland in the area, she had to find work as a construction labourer. “I have to work to sustain my son's education, she said. “I want him to grow up and earn a living for himself and not struggle like me. An additional burden is that part of her mud house collapsed during Amphan, and she doesn't have the money to repair it. “I somehow managed a quick fix with a tarpaulin cover, she said. “Covering my child's education is more important than rebuilding my house at the moment.

Losses worth Rs 2 lakh Last year, Koushalya Mondal, 39, lost her husband and father-in-law to a tiger attack in an estuary bordering the Sajnekhali forest. It was shortly after Cyclone Fani hit the Sundarbans in May 2019, and Koushalya, her husband Arup Kr Mondal, and her father-in-law Anup Kr Mondal went to collect crabs from a trap set up near the estuary. “I saw with my own eyes as the tiger jumped from behind and dragged my husband and father-in-law, she said, her voice filled with horror. “I somehow saved myself. Since then, Koushalya has carried on her husband's work alone, laying traps in the estuaries and collecting crabs. After catching the crabs,

she releases them in her ponds, and then sells them to fish dealers. She usually earns around Rs 1-1.5 lakh per year, depending on the number of crabs. Her son, Amit, is a Class 12 student at Rahara Ramakrishna Mission School in Kolkata.

When his school closed down due to the pandemic in March, Amit moved back home to stay with his mother. Amphan tore down a part of Kaushalya's house, completely destroying her kitchen. She spent Rs 25,000 on repairs, but the greater loss is that of her livelihood. A coconut tree had fallen across her pond; it took almost 10 days to move, she said. "By then, not a single crab was left available, she said, visibly shaken. Koushalya said she lost Rs 2 lakh worth of crabs. "I thought God had finally smiled on me this year as I could have earned double the profit that I usually get, she said. "But all God did was play a cruel joke.

### **Fish farming in West Bengal, India: Nudge to shun use of antibiotics as exports to EU hit**

<http://www.millenniumpost.in/kolkata/govt-gives-land-to-20-it-firms-including-wipro-425330?infinitescroll=1>

"After the European Union (EU) complained of antibiotics being present in fishes imported from Bengal, the state Fisheries department has decided to conduct a meeting with the farmers and ask them to shun the use of such chemicals. Instead, they will be encouraged to use probiotics. ""The trading norms in the EU are more stringent than the rules in the United States, South East Asia and the Middle East. Recently, EU conducted a random inspection of our consignment. During the inspection, it was found that some fishes contained antibiotics. If they continue to find antibiotics in the fishes, then they may stop importing fish from our state. This will hit the revenue,"" said a senior official of the state Fisheries department.

""We will train them on the use of probiotics for aquaculture so that they stop using antibiotics,"" said P.K. Mishra, Principal Secretary of state Fisheries department. Probiotics, which increase the content of crude protein and lipid, can be used as growth promoters in edible fishes. As per figures available with the Marine Products Export Development Authority (MPEDA) – the nodal agency for the holistic development of the sea food industry, 1,1382 tonnes of fish were exported from India to EU during the 2019-20 fiscal. The trade fetched Rs 531.09 crore. Frozen fish, the bulk of which is shrimp, is exported in reefer containers via sea route to different parts of the world. Apart from Bengal, other states like Odisha, Andhra Pradesh, Kerala, Goa, Karnataka, Maharashtra and Gujarat also export fish.

The export of sea shrimp to the US has also been hit. The United States has stopped buying shrimp as the fishermen in India don't use nets for conservation turtles while fishing. The Ministry of Commerce has urged the Bengal Fisheries department to take concrete steps with respect to the Marine Fisheries Regulation Act of the state so that they can take up the matter with US authorities for lifting the ban. Around 80 per cent of the total shrimps exported from India are cultivated while 20 per cent are captured in seas. An official in the state Fisheries

department said 85 per cent shrimps from Bengal are exported and only 15 per cent are used for domestic consumption.

### **West Bengal: Fish farming: Nudge to shun use of antibiotics as exports to EU**

<http://www.millenniumpost.in/kolkata/fish-farming-nudge-to-shun-use-of-antibiotics-as-exports-to-eu-hit-425242>

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**West Bengal: Mangrove forests like Sundarbans are facing the “triple threat of sea-level rise, lack of mud and squeezed habitats which could have dramatic economic and environmental consequences for coastal communities, new research has warned.**

<https://www.preventionweb.net/news/view/74834>

“Mangroves provide valuable ecosystem services, including carbon sequestration, coastal protection and habitat for organisms. The loss of mangrove forests not only threatens the habitat of local organisms, such as shrimps, fishes and crabs, but also exposes coasts to natural hazards, increases coastal erosion and puts coastal cities at risk, said Danghan Xie, a researcher at Utrecht University (Netherlands), who studied how coastal forests are getting pushed against their shores and losing their diversity. In a recently published study in Environmental Research Letters, Xie found that on one hand, mangroves are being deprived of mud and on the other, sea-level rise is threatening their existence.

**West Bengal: Potential for Inland fisheries: Union Minister**

<https://www.outlookindia.com/newscroll/potential-for-inland-fisheries-union-minister/1981516c>

"Inland fish culture holds huge potential and clustered models need to be developed to support this growth, Union Minister Pratap Chandra Sarangi said on Tuesday, The Union Minister of State for Animal Husbandry, Dairying and Fisheries said the Pradhan Mantri Matsya Sampada Yojana which has been announced will enhance fish production to 220 lakh metric tonne with an investment of over Rs 20,000 crore in the next five years, a CII statement said. Under this scheme, 30 per cent subsidies will be provided to the general category investors and 60 per cent subsidy will be given to SC, ST category investors, he said. Japan was looking forward to investing in the fish feed industries in India, Japanese Consul General, Nakamura Yutaka said at the opening session of Fish Mart-- a seven-day virtual session. Odisha Fisheries minister Arun Kumar Sahoo said the state was targeting a five-fold growth of Rs 20,000 crore export over the next few years. The COVID-10 pandemic had impacted shrimp exports from the country, a senior marine Products Export Development Authority official said.

## **West Bengal: New US fishing regulations hit shrimp export**

<http://www.millenniumpost.in/kolkata/new-us-fishing-regulations-hit-shrimp-export-424623>

"The export of sea shrimp from India, including Bengal, to the United States has been hit with the latter imposing total ban on buying these shrimps because they are caught by vessels without turtle excluder devices (TED). The Marine Products Export Development Authority (MPEDA) has written to the Bengal Fisheries department to take measures so that the fishermen install TED in their trawler nets for facilitating shrimp export to the US. Presently, the shrimps that are being exported to America are cultivated in water bodies. But, the large-sized prawns that are usually captured using nets in sea cannot be exported with the US insisting on TED. This has led to dip in exports. Around 80 per cent of the total volume of shrimps exported from India are cultivated while 20 per cent are captured in seas. America is not only one of the highest importers of Indian shrimp but also the highest payer too. So, the export window needs to be opened, otherwise the fishermen who depend upon sea fishing for earning their livelihood are bound to suffer.

"We will earn 15 per cent more from exports if the window for export of sea shrimps opens up," said an official of MPEDA. During 2019-20, around 88,264 tonnes of frozen shrimp were exported from Bengal to other countries. It fetched Rs 4615.44 crore. Around 25,628 tonnes of sea fish from Bengal, the bulk being shrimp, were exported to the US and the revenue earned was Rs 1508.44 crore. The National Oceanic and Atmospheric Administration (NOAA) had held a meeting with the Ministry of Commerce and asked the latter to take necessary measures in this regard. The Ministry had asked the states dealing with sea food export to come out with notification making TEDs mandatory in trawler nets. Apart from Bengal, states like Odisha, Andhra Pradesh, Goa, Kerala, Maharashtra, Tamilnadu and Gujarat are associated with sea food export. Bengal has come out with the notification immediately. According to sources, the US has now sought for proof on whether the states are really using such devices and have asked for furnishing details of penal action against the violators by the associated states.

"We are looking into the matter seriously considering the fact that almost 85 per cent of shrimps are exported from our state and only 15 per cent are used for domestic consumers," said an official in the state Fisheries department.

## **West Bengal: When the sea rises: A story from the Indian Sundarbans**

<https://science.thewire.in/environment/sundarbans-sea-rise-sagar-island-inhabitants-land-livelihood-social-isolation/>

"In the post-Amphan intellectual and public domain, the devastation in the Indian Sundarbans region – due to the cyclone on May 20, 2020 – has been well-discussed, scrutinised and eventually pitied. However, this is not new: the perception of the Sundarbans has slowly evolved from a romanticism centred on the region's unique eco-geography to a perception of a coastal rural lowland inhabited by millions of people. But how justified are we to place all the blame on sudden shocks like Cyclone Amphan and the COVID-19 lockdown? In fact, how do the islanders see their lives when there is no disaster looming on the horizon? The narratives here are excerpts from my fieldwork, carried out mid-2018, when there was no disaster around. "After Cyclone Aila in 2009, the embankment of the southern side was completely devastated. Half of the village was underwater for several days. When the water receded, it was not anymore possible to do agriculture. A few of us decided to set up a small fishery.

We applied for a loan, and fortunately we received the amount. Everything was set. By God's grace everything was running smoothly. But one night, during another storm, water engulfed the fields again. The storm didn't make headlines, but it was high-tide time. It mercilessly washed away everything we had. All the seedlings were gone, the whole system had collapsed. Now, we have no other options. We still don't know how to repay the debts. Male, 42 years, Sagar Island Their tears were real and their helplessness unfathomable. The increasing salinity in the water and the soil has affected agricultural production. The high-tide twice a day subsumes a considerable area under water.

They say the tropical easterly winds and the spring tide "bring back bad memories. When asked about how they manage to live within 200 m from the broken embankment during storm surges, one lady said: "I am 46 years old, and have been living in Beguakhali village with my husband and three children for 27 years. Earlier, we had our house almost a kilometre away from the old embankment. After Cyclone Aila everything was lost. My house fully collapsed at that time. I had a cow, it also died. The government built a new embankment, but the height is not sufficient to hold the waves. We didn't receive any help either. We can't sleep during storm surges now-a-days due to noise and the sound of waves crashing against the incomplete embankment. Who knows when the time will come? In the last two years, I've had to relocate thrice. But I am a woman of the riverside; I was born and brought up here only.

Let's see how much more the waves can snatch away from me. Thieves steal things from others, but in my case the sea snatches things away. I am a rich person (laughs) – what do you say? She pointed to the broken remains of a palm tree in the middle of the water, where she once had a home. But her determination is radiant; in fact, a characteristic mix of resilience and humour – which manifested as an infectious smile – is abundant in this complex territory. These islanders

were a continuously retreating yet optimistic people that never forgot to put up a fight. Another man, aged 35 years, from Beguakhali village of Sagar Island said: “When the embankment collapsed during Cyclone Aila, my house was damaged. My agricultural land went underwater. For several days the condition was unexplainable. Due to a lack of transport facilities, relief work was hampered.

Even when the water receded, the land was of no use due to high salinity. Later on, government officers came and promised to compensate us. They acquired my land along with that of many others for the construction of a new embankment. It all started, but I didn't receive any money. We have been living here for generations, why should I leave? I won't give up without a fight. I filed a case against the government in the high court. It's still pending though; they are pressuring me to leave the land for construction work.

But I won't do anything. Why do I care what people say? Until and unless I get the money, I won't let anybody place a single brick on my land. All of the villagers said that if the new concrete embankment isn't built quickly, there will be another breach and more saline water ingress. However, the maintenance of embankments in this area has been reactive in nature – there's an attempt to mend the structure only after there has been a breach. A considerable fraction of respondents also complained that they hadn't received the promised sum even after land acquisition. When people started inhabiting these islands, they didn't have a patta (the legal document for land ownership), and most don't to this day.

After Cyclone Aila, when the government started acquiring land for new embankments, many of these people couldn't provide any proof of ownership. This incident had a bidirectional effect. First, the affected households couldn't receive any assistance from the government. Second, in some cases, the actual owners of the land, who are now settled outside the Sundarbans, came and claimed the sum. But the people still living there didn't receive any help. And now, rapid erosion is pushing them further inland – even as they refuse to leave the island. At times, many have relocated to private lands. An NGO worker (name hidden to protect identity) said:

“The original owners of many of these lands are already staying in Kolkata; they shifted there long back. After Cyclone Aila, when the government provided the compensation for the land, these fellows appeared in the village and claimed it. When they left with the money, some other people started staying in the same plot of land. And when the government officials came again, they faced resistance from these ‘settlers’. These people also received some money. But it's like a cycle: when these people left, someone else occupied the area. It goes on like this. This story is not uncommon here. Different people occupying the same land disrupts administrative intervention, and slows down work on the embankments as well. When work resumes after it has stopped for a while, the older section of the structure would have become eroded, allowing the surrounding land to get washed away. I saw some torn pieces of the geotechnical tube sacs, used for construction, in some houses. When I asked about them, they replied: “Water is engulfing

everything. Our land is gone, our houses are fully damaged. Do you call it a house? The government is not doing anything. No one cares for us.

The irrigation department refers to these bamboo geotube sac structures as embankments. They are useless. During the monsoon, we need some shade over our heads. We deserve at least that shade, don't we? So we use these sacs. But we are not stealing them. They are torn anyway and of no use. This pugnacity was pretty common on Mousuni Island, probably as a result of the administration's long history of neglect. It was obvious that the islanders felt their basic rights had been violated, and that their struggle for survival and loss had been commodified. Waves lashing a tubewell, Mousuni, 2019. "During the spring tide, there is water everywhere. We reduce consumption of food and water to limit the need to access toilets. We catch [prawn seedlings] daily, wading in chest-deep water.

This saline water is triggering health problems, body pain, gynaecological issues, skin infections, etc. But we have mouths to feed, what else can we do? Female, 28 years Why do you all stay here?, I asked. They had no immediate answer, their eyes were blank. But after a few moments of silence, they always had the same thing to say. "Where can we go? We have nowhere to go. We have never known anything other than this land and these occupations. Now that is also changing. We don't know it anymore. In his 2004 novel *The Hungry Tide*, Amitav Ghosh wrote: "The Rivers' channels are spread across the land like a fine-mesh net, creating a terrain where the boundaries between land and water are always mutating, always unpredictable... There are no borders ... to divide fresh water from salt, river from sea. Ghosh's words capture a fundamental truth of the Sunderbans and its people. In 1770, the very fertile soil in the region and its proximity to Calcutta attracted some people to start cultivating it, while the government erected embankments and organised settlements. It was old wine in a new bottle – to attempt to tame nature's unpredictability for profits.

The families of the people living in the Sunderbans today have lived here for many generations. But the 'developmental' process the British began, and which the Government of India has continued, has left most – if not all – of these people stranded, branded as the unauthorised occupants of their own lands, as if their very existence threatens the natural dynamics of the Sunderbans ecoregion. Away from the mainland, living in the southern coastal stretches of the Sunderbans and at the mercy of a fluid water-land divide, gives rise to a type of inferiority. The people here are bereft of social recognition without geographical accessibility, basic amenities and good livelihood options – even as they adapt to the effects of climate change and state apathy, and pay a huge price.

### **West Bengal: Over 5,000 fishermen miss their catch**

<https://www.telegraphindia.com/west-bengal/over-5000-fishermen-miss-their-catch-in-durgapur/cid/1796477>

A bend in the sluice gate No. 31 of Durgapur Barrage on Saturday that caused the upper catchment area of the Damodar River to dry up has rendered over 5,000 fishermen in Durgapur and Bankura's Borjora jobless. Reason: most of the fish have been swept away to the lower catchment areas through the damaged gate. Many fish have died without water. The livelihood of fishermen in Durgapur and Bankura depends majorly on the Damodar river. Catch is better in the upper catchment area and meets about 30 per cent of the demand for fish in the Durgapur-Bankura region. Damodar is known for rohu, catla, tilapia, and small prawns. Durgapur fisherman Swapan Biswas said the damage to the Durgapur Barrage was a fresh blow to them just when they were struggling to come out of losses in the Covid-induced lockdown since March.

“We haven't been able to catch fish since Saturday. This has again hit our income after the prolonged lockdown, he said. “The damage to the barrage is a fresh blow, said Swapan, who sells around a quintal of fish to wholesalers in Durgapur and nearby. The damage to the Durgapur Barrage has hit fish supply to the markets of Durgapur and Bankura. “Local fishermen don't have catch. We have to depend on fishermen from other districts like East Midnapore and North 24-Parganas, and states like Jharkhand and Andhra Pradesh, said a fish wholesaler in Durgapur. Goutam Biswas, another fish trader, who normally sells around one quintal fish to markets in Durgapur and sends consignments to Siliguri every day, remembered when in 2017 another sluice gate of the barrage was damaged.

“We could not catch fish for three months, said Goutam. In 2017, after the gate's repair, the fisheries and irrigation departments had jointly released carp in the Damodar. It had taken three months for the carp to grow and be caught for sale. Repair status The Durgapur Barrage crisis has been compounded as the irrigation department missed its Tuesday deadline to start restoring the damaged sluice gate. An irrigation engineer said the area needed to be dry for repairs to start. “The work is not easy as the monsoon continued till September-end and it rained in early October too. Small rivers linked to Damodar are posing a challenge to our job, he said. Sources said even if work started it would need at least 36 hours or more to finish.

**West Bengal: Govt gives compensation to family of man killed by tiger**

<https://www.outlookindia.com/newscroll/wb-govt-gives-compensation-to-family-of-man-killed-by-tiger/1967893>

"West Bengal government Saturday handed over Rs two lakh as compensation to the next of kin of the fisherman who died of tiger attack in the Sunderbans a day before, an official said. Jayanta Naskar, MLA of Gosaba constituency in South 24 Parganas district handed over the compensation along with one months ration and clothes to the widow of Sasanka Mondal who was mauled to death by a big cat on Friday. Mondal and two other fishermen from Lahiripur village had gone to catch crabs in a canal near Sajnekhali range office on Friday. He was attacked by a tiger as soon as he got off the boat and was killed on the the official said. None of them possess valid documents required for catching crabs or fish in the protected area, he added.

### **West Bengal: 12km march to protest delay in river cleansing**

<https://www.telegraphindia.com/west-bengal/12km-march-to-protest-delay-in-river-cleansing-in-basirhat/cid/1795113>

"Over 1,000 fishermen and nature activists from four blocks of Basirhat took out a 12km march on Sunday to protest the alleged administrative apathy to begin the long-awaited cleansing of the polluted Bidyadhari river. The protesters said the National Green Tribunal had last year ordered the cleansing of the Bidyadhari, along with 351 other polluted rivers. Despite the approval of a grant by the Centre, the work is yet to begin. Fishermen from Sandeshkhali, Hansnabad, Minakha and Haroa blocks gathered at Malancha on the Basanti Highway under the banners of the Bidyadhari Nadi Bachao Committee and the Dakshingan Matsyajibi Forum to start the march, which concluded at the Kulti crossing near Haroa.

The fishermen said it had become a serious livelihood issue for them as the alleged pollution caused by the Bantala leather complex had been depleting several kinds of fish from the river. "Around 10,000 families in the four blocks are solely dependent on fishing. But because of the pollution in this long stretch, several species of fish have disappeared, said a fisherman from Haroa who joined the protest march. An approximate 40km stretch of the Bidyadhari, from Haroa to Sandeshkhali, is polluted largely because of the alleged draining of industrial waste from the leather complex. "The leather complex authorities never realised. they had been draining the poison into the river, not only endangering the riverine life forms but also robbing these people of their livelihood, said Gopesh Patra, a Trinamul Congress leader who is also the convener of the committee. Last year, the National Green Tribunal directed state governments to ensure cent per cent treatment of sewage before release into river streams. The tribunal also directed the state government to begin installation of such treatment plants for sewerage and connecting drains by March 31, 2020 "After the order of the tribunal, the Centre had sanctioned Rs 4.5 crore for the work on a 20km stretch of the Bidyadhari. The state government was supposed to carry out the work, which is yet to begin, said Patra.

"We came to know that the state public health engineering department would do the work, he added. A public health engineering department official in Calcutta said the detailed project report for the work has been finalised and sent for vetting. "We are hopeful of being able to begin the

work soon. A spokesperson for the Calcutta Leather Complex Tanners' Association dismissed the allegations as “baseless. “We have been adhering to the standard operating procedure from the state government and the state pollution control board. Had we not done so, they would have shut us down by now, he said. Rakhal Halder, a fisherman from Haroa, said: “We want the state government to take care of the issue and ensure the work begins at the earliest, to save the river, to help us overcome the livelihood crisis.

### **West Bengal: Fish market suffers Rs 1.3 crore fraud during lockdown**

<https://timesofindia.indiatimes.com/city/kolkata/fish-market-suffers-rs-1-3cr-fraud-during-lockdown/articleshow/78264534.cms>

"The Patipukur fish market, one of the biggest wholesale markets of fish in the city that was shut for days after being hit by the Covid crisis, has now suffered another blow. An FIR has been lodged against the cashier and his henchmen for duping them of Rs 1.3 crore during the pandemic period. The accused was initially pulled up in November last year and warned of consequences. Finally, when one of the traders wanted to settle the dispute during the pandemic, the cashier allegedly threatened him and even attacked him with help of his associates. Based on the complaint filed by fish trader Pradip Das, Tallah police has registered an FIR. According to Das's complaint, he had appointed the accused then merely a 17-year-old in 2005 to maintain the accounts of his fish supply business at the Patipukur fish market. In November last year, the complainant detected that the accused cashier had begun misappropriating money. By the time the market was temporarily shut down during the lockdown, the accused allegedly siphoned Rs 1.3 crore.

The book of accounts was found to have been allegedly doctored. The misappropriation has not only affected Das's business, the future of many fish traders, who run their businesses as a cooperative with Das, are at stake. “This was for his wrongful gain and thereby cheated the complainant. While the complainant kept trying to recover the amount, the accused allegedly threatened him with dire consequences. On August 30, around 6 pm, the accused along with at least 10 of his associates came to the shop of the complainant and physically assaulted him with a sharp object and a stick. He has since been threatened often, the FIR stated. Das had to be hospitalized after the attack. A case under criminal breach of trust, defraud and cheating has been registered at the Tallah police station. “We are investigating the case. The victim has so far being claiming that he is being framed with a number of motives. We are taking help of a few experts who will help auditing the documents. We are also not ruling out the business rivalry angle, said an investigating officer.

### **West Bengal: Climate change and reduced freshwater supply have put Sundarbans on the ‘endangered’ ecosystem list**

<https://scroll.in/article/973345/climate-change-and-reduced-freshwater-supply-have-put-sundarbans-on-the-endangered-ecosystem-list>

"The Sundarbans mangrove ecosystem in India is evaluated as "endangered by a global team of researchers using the International Union for Conservation of Nature's Red List of Ecosystems framework. The clearing of mangroves dating back to the 1800s and declining fish populations were the main historical threats. Ongoing threats such as climate change and reduced freshwater supply may further imperil this ecosystem, they said. Researchers from India, Australia, Singapore and the United Kingdom evaluated the Indian Sundarbans ecosystem using the Red List of Ecosystems framework developed by the International Union for the Conservation of Nature to assess an ecosystem's risk of collapse. The framework is analogous to the Red List of Threatened Species. .

"Despite this seemingly bleak outcome, there is cause for cautious optimism because of the slow down in historically high rates of mangrove clearing, and recently stabilising tiger populations. The researchers write in a study that with the stabilisation in mangrove extent over the last decade or so, tiger numbers are slowly increasing, and analysis of mangrove condition highlights that only a small proportion of the forest is classified as degraded. "There are still ongoing threats to the ecosystem, which can still cause widespread degradation if not properly managed, study co-author Michael Sievers told Mongabay-India.

"Reduced freshwater and sediment supply to the ecosystem is an ongoing concern. Temperature, salinity, freshwater flow, nutrients and tidal amplitude are key drivers of mangrove ecosystem productivity and diversity. Natural factors such as increased wave action due to storminess and human-induced changes such as the reduction in sediments due to upstream dams are the major drivers of permanent loss of land (and mangroves) to water in the Sundarbans. Study co-author Anwesh Ghosh, who works on marine microbial ecology, said the loss of forest cover is an immediate issue. "I fear that fast-changing river dynamics, seawater intrusion, and rainfall patterns could cause rapid changes to the ecosystem, said Ghosh.

"We might lose the high species diversity that we see now. The Sundarbans in the Bay of Bengal are the most extensive continuous mangrove forests globally, straddling India and Bangladesh. The United Nations Educational, Scientific and Cultural Organization World Heritage Site and biodiversity hotspot harbours diverse species including the royal Bengal tigers. Four million people rely on the ecosystem services of the Sundarbans, with wild fisheries the second biggest employment source within the region. Key threats The evaluation describes key threats to the mangrove ecosystem ranging from agriculture and aquaculture, biological resource use (such as honey collection, hunting, and poaching of tigers), climate change (such as enhanced salinisation due to sea-level rise, the severity of cyclones and drought), natural system modifications (dams, barrages, embankments), pollution (including accidental spills during oil transportation), as well as residential and commercial development (continued mangrove clearing). However, Sievers,

of the School of Environment and Science, Griffith University, Australia, underlines that there has been a “huge amount of great management and conservation efforts in the Sundarbans.

“These significant efforts need to be celebrated. We don't want an assessment of ‘Endangered’ to suggest these efforts are not being successful, Sievers said. Andy Large, field-based physical geographer, who was not associated with the Red List of Ecosystems evaluation said the cause for optimism, is “refreshing, referring to among other things “recently stabilising tiger populations and that the “mangrove extent has stabilised. “This would indicate that the authors are not claiming that the entire ecosystem is stabilising and that there remain various causes for serious concern such as for example, declining fish populations, Large, director, UKRI Global Challenges Research Fund's Living Deltas Research Hub, told Mongabay-India.

“It is an important differentiation to make so as not to miscast the message of the paper. Ritesh Kumar, director, Wetlands International South Asia, not associated with the study, notes the discourse on water management seldom takes into account water requirements for coastal ecosystems resiliency – rendering ecosystems such as Sunderbans vulnerable. “While it is okay to be cautiously optimistic, Sunderbans remains subject to threats related to freshwater flow decline and pollution, Ritesh Kumar told Mongabay-India. “With Sunderbans designated as Ramsar Site, there is a need to put in place an integrated management plan for maintenance of ecological character of the site – and addressing drivers of adverse change. Long-term, hands-on, and novel monitoring programs such as the Sundarbans Biological Observatory Time Series are crucial, the researchers note in their evaluation.

Funding and capacity issues remain crucial barriers to achieving monitoring management goals. Co-author Anwesha Ghosh adds that the ecosystem shows signs of degradation, but also that it is trying to bounce back. “There is a lack of extensive information at both spatial and temporal scales, Ghosh told Mongabay-India. “From the information that is available at hand, such as the Sundarbans Biological Observatory Time Series datasets, we see the system is trying to recover or the extent of the damage is less than we had previously estimated. “We hope that continued effort and stopping malpractices should help the Sundarbans revive faster from the degradation it is now facing, Ghosh said.

Through the Sundarbans Biological Observatory Time Series program, set up by Indian Institutes of Science Education and Research-Kolkata, researchers Punyasloke Bhadury and Anwesha Ghosh are looking at changes in microbial community structure and stability in the Sundarbans estuaries to track changes in freshwater flow that could have implications for the sustainability of fisheries. Risk of ecosystem collapse Sievers explained that the Red List of Ecosystems assessments involve collating various data sources across multiple indicators relevant to the ecosystem of interest; in this case, the Indian Sundarbans. “Indicators are variables that can be used to evaluate the risk of ecosystem collapse, Sievers said.

“For instance, we assessed the mangrove area, levels of mangrove tree degradation, and mangrove tiger populations, among others. In the Red List of Ecosystems assessment, the authors define the “collapse threshold as when a population reaches zero or the extent of the cover of habitat also reaches the same (zero) extent. For example, when tiger abundance is one of the indicators of disruption of biotic processes or interactions, the population decline to zero is a collapse threshold, as per the evaluation. However, ecologist and environmental scientist Jack O'Connor argues that that collapse per se will occur before this – at a point where a system cannot recover to a previous, more healthy state.

O'Connor who was not involved in the RLE assessment elaborated that some writers in the scientific literature have referred to a phenomenon termed ‘flickering’ whereby variation (eg of nutrient concentrations in small water bodies) is seen around a level that is a harbinger of subsequent collapse over a threshold – beyond which a system moves to an alternate, degraded, stable state from which it is difficult to recover. “Away from the Sundarbans this phenomenon has been recorded for freshwater ponds and given the dependency of rural populations in the Sundarbans on these sweet water resources, the implications of further degradation of the Sundarbans environment for the rural poor is also clear, O'Connor, a scientist at United Nations University's Institute for Environment and Human Security, told Mongabay-India. “In summary, this study presents a useful effort to use the Red List of Ecosystems to assess ecosystem-scale risk, added O'Connor. “The approach is still new, but we feel it is a promising tool to try and encapsulate such large-scale, complex processes.

“While the authors provide some good information on the status of the Sundarbans, gaps remain to be filled given, for example, quantitative risk assessment in the paper is ‘NE’ ie not evaluated. Red List of Ecosystems assessment study co-author and IISER-Kolkata scientist Punyasloke Bhadury acknowledged that for some of the parameters information was not adequate and that all stakeholders working in Indian Sundarbans including the forest department, West Bengal government should be taken on board to address those parameters. “Moreover, restoration strategies can be implemented on an experimental basis such as vegetation restoration in Indian Sundarbans which can lead to the recovery of declining components of the overall ecosystem, Bhadury told Mongabay-India.

Mangrove, tigers and fish Populated since the 8th century, intensification of land use and mangrove clearing escalated from the late 19th century and continued throughout the 20th century. Historically, the area of mangroves was estimated to be 6,588 sq km in 1776 and 6,068 sq km in 1873. These estimates suggest that the extent of mangroves has declined by 71.9% from 1776 to 2016, classifying the ecosystem as “endangered, according to the study. Study co-author Radhika Bhargava said the Sundarbans (both in India and Bangladesh) lost 24.55% of mangroves (136.77 sq km) due to erosion over the past three decades. The loss of land due to erosion is leading to a direct loss in the mangrove forests. “Since 1987, the declaration of the

area as a World Heritage Site, along with other management and conservation tools, has helped to stabilise the mangrove area, said Bhargava.

“The threats to mangrove forests have not completely gone away but they have reduced in the last 50 years. “So, we have to be cautious about how we manage the current threats, said Bhargava. Recent research based on satellite data indicates that the number of mangroves in the Sundarbans, spanning India and Bangladesh, has not reduced significantly in the last 30 years. However, there is evidence of a decline in the health of about 25% of the mangrove trees. And those areas will be more exposed to harm in the future, especially if extreme events such as cyclones become more common. The assessment flags concern over the continuing declines in juvenile fish populations. Fishworkers' unions have blamed depleting fish catch for affecting the livelihood of the traditional fishing communities and fueling migration to the west coast of India in recent years. Fish catch has reduced mainly in the rivers, creeks, and estuaries, while the marine catch in the Bay of Bengal has not been affected, a section of researchers have said. Elaborating on the fisheries, Bhadury underscored the significance of mapping of the nursery grounds of coastal fisheries in Sundarbans while determining visible signals of climate change such as food availability for nursery fisheries.

“There are a number of areas in which information seems to be inadequate such as the long term effects of salinity changes on mangrove vegetation and resulting consequences for higher trophic levels, Bhadury told Mongabay-India. “Moreover, coastal acidification and effects of the same on the biodiversity and ecosystem services of Indian Sundarbans are not fully understood and these need to be thoroughly studied. The latest “Status of Tigers, Co-predators and Prey in India Report points out that the tiger population in the Sundarbans landscape “seems to be at stable density. Together with Bangladesh, Sundarban holds about 200 tigers that have uniquely adapted to the mangrove forests. The report by the Indian government notes that it is important that this transboundary population is managed as a single population. According to the latest data, the tiger count in the Sundarbans in India for the year 2019-2020 rose to 96, from 88 in 2018-2019. However, the report cautions that despite efforts by forest departments of both countries, joint patrolling and joint management activities have yet to commence. “In our rush to use waterways for economic transportation, we have to be careful that these do not become barriers to tiger (and other wildlife) dispersal.

Andy Large maintained that if there is a slight increase in the tiger population this is to be welcomed from a conservation and biodiversity point of view, but much more work needs to be done on correlating tiger populations to changing habitat status over a longer period before any conclusion as to population trends/threats. “We would generally avoid using the term ‘stabilizing’ in relation to the Sundarbans though as it is, by definition, a truly dynamic system and one that instead should exist in a state of ‘dynamic equilibrium’. Large said. “The issue today is the proximity of the Sundarbans ecosystem to a range of tipping points or thresholds which it is vital to avoid crossing.

## **West Bengal: Fish farming: Push to use biofloc technology**

<http://www.millenniumpost.in/kolkata/fish-farming-push-to-use-biofloc-technology-418868>

"The state Panchayats and Rural Development department is laying special emphasis on fish farming through biofloc technology with the objective of livelihood support amidst the COVID -19 pandemic situation. West Bengal Comprehensive Area Development Corporation (CADC) under the aegis of the department which is executing and pushing for biofloc to be adopted by the SHG groups across the state has set the ball rolling by setting up an infrastructure of fish cultivation through biofloc at its own office at Mrittika in Salt Lake. It is expected to be readied by this week.

"Biofloc is a technology using which one can produce fishes significantly in large quantities (in a small volume of water) as compared to the traditional form of aquaculture in large ponds. It is easy to monitor the fish movement, their behaviour and abnormalities as they will remain within a tank which in turn will facilitate taking the corrective measures immediately," said a senior official of CADC. Probiotic and molluscs are used to eliminate chances of food particles and excreta of the fishes in polluting the water. These components produce planktons and prevent the production of ammonium nitrate which is toxic for the fishes. An aerator is used to add oxygen to the water. "We will be creating a biofloc model in each of our 23 projects in the state and accordingly training will be provided. The seeds will also be supplied by us. The interested SHGs will have to bear the other costs. However the scheme can also be taken up under MGNREGA in which the government will bear the entire cost," said the official. The technique is already being practised at Tamluk in East Midnapore, Ayodha Hills in Purulia and in some semi arid zones in Murshidabad, Jhargram and Birbhum.

Air-breathing fish rearing in cement tank by 60 farmers in Kolaghat has already seen success. Every 8 feet by 6 ft tank were provided with 500 seeds on an average each costing Re 1. In three to four months each tank produces 25 kg on an average (koi, singi, magur,) whose average price is Rs 250 to 300 per kg. The income from each tank is around Rs 7000 a month so for 60 tanks the income is Rs 42,0000. A wide variety of fishes can be cultivated through this technology like Koi, Magur, Singi, Telapiya, Pabda and even prawn.

## **West Bengal: First consignment of 12 ton Bangladeshi Hilsa arrives in Bengal**

<http://www.uniindia.com/first-consignment-of-12-ton-bangladeshi-hilsa-arrives-in-bengal/east/news/2162319.html>

"Much to the gastronomic delight of the Bengalis of this part, first consignment of 12 ton Bangladeshi Hilsa arrives the state. Thee trucks carrying 12 ton of Bangladeshi Hilsa out of 1,450 ton promised by the neighbouring country arrived in Bengal late on Monday evening through the Petrapole border here in North 24-Parganas district. The Sheikh Hasina Government

had last week announced that it would export 1,450 ton of hilsa to India as a Puja goodwill gesture.

The remaining will arrive through the Petrapole border, around 71km from Kolkata, in phases by October 10, officials and agents said. Sources in Petrapole said the unloading of Hilsa from the Bangladeshi trucks began Monday morning. Packed in thermocol boxes with ice, the fish was then loaded onto Indian trucks. For the first time since 2012, when Bangladesh had banned the export of Hilsa fish to India, the government of the neighbouring country has given special permission for the export of the much-loved delicacy to India. The export wing under the Bangladeshi commerce ministry on Thursday last approved nine private agencies in the country to export around 1,450 MT of Hilsa to India. The first consignment of 12 tonnes, the largest consignment in recent times, headed for Kolkata soon after its arrival.

“More such consignments will come by October 10. We are thankful to the Bangladesh government for responding to our letters to their commerce ministry, a member of West Bengal Fish Importers' Association said. “We have been trying for this since 2012. Hopefully, the price of Hilsa would be now within the reach of fish lovers, said Syed Anwar Maqsood, secretary of the West Bengal Fish Importers' Association. “The price of Bangladeshi hilsa would come down to Rs 1,200 per kg for bigger sizes and Rs 800 per kg for smaller sizes, weighing 700 to 800 grams, he added. Meanwhile, exporters and wholesale fish traders in Kolkata and Howrah said they were relieved and expect the Hilsas to be readily available in another day or two. Ganga and sea hilsa are being sold in Kolkata markets at between Rs 1,500 and Rs 1,800 per kg. The production of Hilsa has been declining over the years. However, Bangladesh has been able to check the declining Hilsa population by banning fishing during the breeding period and establishing sanctuaries for the fish.

### **West Bengal: Fingerlings distributed among Sunderbans fishermen to keep them away from tiger habitat**

<https://www.outlookindia.com/newscroll/fingerlings-distributed-among-sunderbans-fishermen-to-keep-them-away-from-tiger-habitat/1935707>

"The West Bengal Forest Department on Monday distributed fingerlings among villagers in Sunderbans in South 24 Parganas district to dissuade locals from venturing into creeks, adjacent to core forest area, to catch shrimps, crabs and collect firewood. Chief Wildlife Warden V K Yadav told PTI, hundreds of fingerlings were given to villagers in remote areas for raising fish in local ponds so that they do not negotiate the creeks crisscrossing the forest and fall prey to tigers. It takes about 7 to 10 days for the spawn to grow upto fry stage. As soon as the fry grow up to 10-15 cm size or roughly equal to the size of a finger it is known as fingerling. Fingerling is the proper size for stocking in table fish production ponds.

""We are organising such programmes in collaboration with World Wildlife Fund (WWF). We will cover 26 joint forest management committees (JFMC) who will dig 20 ponds in each village,"" Yadav said. Mostly Rohu fingerlings will be grown by a group of villagers, associated with a particular pond, and sold in markets. Fishermen were also provided with small ovens fitted with LPG cylinders to stop them from collecting firewood from the reserve forest. As options are limited in the Sunderbans - the world's largest mangrove forest intersected by rivulets and creeks - fishermen often anchor their boats on the banks and enter the jungle to collect wood. Many of them are mauled to death by tigers. As many as 100 LPG-run ovens were supplied to the fishermen and another 500 would be covered under the scheme in the coming days, he said.

State Forest Minister Rajib Banerjee, who was present at a programme at Kumirmari village, said that the government wanted to ensure zero casualties in tiger attacks by providing means of livelihood so that fishermen need not go to forests. The Forest Department has already planted over 2 crore mangrove saplings in Sunderbans, while another 3 crore will be done within December this year, he said. ""As wished by Chief Minister Mamata Banerjee we need to offset the damage due to cyclone Amphan as the mangrove cover plays an important role in saving the Sunderbans delta, a Unesco World Heritage site, and south Bengal from the fury of cyclones,"" he later told reporters. Mangroves are salt-tolerant trees, especially of the family Rhizophoraceae, forming dense thickets along tidal shores and have well-developed aerial roots.

### **West Bengal: Diesel price hits trawl for hilsa**

<https://www.telegraphindia.com/west-bengal/diesel-price-hits-trawl-for-hilsa/cid/1791928>

"Fishermen's associations in South 24-Parganas and East Midnapore are citing the hike in diesel prices as the chief cause for a "notably low hilsa yield this year, the claim coming in the wake of scores of fishermen either ending their catching season early or curtailing expedition duration for "unsustainable fuel rates. Functionaries of the West Bengal United Fishermen Association said they had written to the offices of Prime Minister Narendra Modi, Bengal chief minister Mamata Banerjee and several senior ministers at the Centre, requesting them to exempt diesel surcharges for the fishing community but were awaiting a formal reply. "We have written to these offices at least twice since July, requesting them to exempt the surcharge collected by the government on fuel. But no one has heeded our plea yet.

As a result, fishermen have reduced their time out at sea and consequently, hilsa yield has turned out low this year, said Joykrishna Halder, general secretary of the association. Sources in the

fisheries department said fishermen in South 24-Parganas had caught 940 tonnes of the coveted fish since June this year, which is about one tenth of last year's yield during the same period. "In 2019, a total of 9,112 tonnes of hilsa were caught in South 24-Parganas but this year, it is only 940 tonnes. It goes without saying that the figure of the last year can't be met in the coming one month, said Jayanta Pradhan, assistant director (fisheries), South 24-Parganas. Fishermen in both the districts have claimed that the problem of rising fuel costs is not new, rather, the hike this year made the situation untenable. Sources said in August last year, the price of diesel per litre was Rs 61.25, whereas it is around Rs 76 this year.

A common complaint among fishermen was that their range of exploration had been curtailed by the "restrictive fuel prices, a major handicap when it comes to migratory fish like the hilsa. "This year, we had to await positive confirmation of a flock before we could afford to move, said a Contai-based fisherman. "In the case of the hilsa, fishermen can catch more fish if they roam freely. As the price of diesel rose, our trawlers' range accordingly depleted. A fisherman who used to pour 1,200 litres of diesel into a trawler now uses 800 litres. As a result, we reduced our time to catch the fish and the production of hilsa is poor, said Satinath Patra, a secretary of the Sundarban Samudrik Matsyojibi Shramik Union. Fishermen said the knock-on-effect of rising fuel prices was the higher cost of hilsa in the markets, necessitated by the pre-existing lockdown economy conditions. "Because of the Covid-19 pandemic, there is no train service to ship loads of the fish and so, people from other states or north Bengal are buying hilsa in lower quantity, Patra said. "Neither the Centre nor the states are thinking about our situation at all. We are avoiding unnecessary hunts to reduce our loss from fuel cost, said Shyamsundar Das, a secretary of the Digha Fishermen and Fish Traders' Association.

#### **West Bengal: Hilsa fish farming resumes in Bhatar villages as part of Unlock 4**

<https://newsable.asianetnews.com/india/west-bengal-hilsa-fish-farming-resumes-in-bhatar-villages-as-part-of-unlock-4-dbr-qgv1r>

"Bengalis have to wait to get the taste of sea Hilsa fish. Fishermen bring fish from the sea to the port. From there it is supplied to different parts of the state. People make a crowd in the markets to buy Hilsa fish. The cost of Hilsa is very high. Therefore, to survive from this situation, the state agriculture department started cultivating Hilsa in the pond. From now on, Hilsa fish will be found in the ponds of rural Bengal. Hilsa fish farming has been started in the village ponds of Bhatar in East Burdwan. The name of this type of Hilsa is Pengba or Manipuri Hilsa. The taste and smell are almost the same as in sea Hilsa. Hopefully, the price of this Hilsa will be less than sea Hilsa. In order to alleviate the shortage of Hilsa in Bengal, Hilsa fish farming has been started in the village ponds with the initiative of the Agricultural Information Advisory Centre and the Department of Agriculture.

According to the officials of the Department of Agriculture, the Manipuri Hilsa looks a lot like local Puti fish. However, its size is much larger. With the initiative of the Department of Agriculture, the cultivation of Hilsa fish has already started in Mangalkot, Bhatar, Memari, and other blocks of East Midnapore. Officials said that big fish have to be fed every day. But for Manipur Hilsa cultivation, the Hilsa can survive by eating plant particles in the pond. The Agriculture Department is hopeful that this Manipuri Hilsa will become acceptable to the common people in the upcoming days.

### **West Bengal: Already struggling, Bangladeshi fishers cannot find hilsa in peak season**

<https://scroll.in/article/972380/already-struggling-bangladeshi-fishers-cannot-find-hilsa-in-peak-season>

"“Half the season is gone. Where are the hilsa? asked Abu Jaher, a 40-year-old fisher from Samraj in Bangladesh's coastal district Bhola. “There was a 65-day ban on fishing, he said. “Now it is over, the rivers have enough water, but hilsa is not available. “I am worried. If we do not get hilsa, we will not be able to feed our families, let alone repay our loans, said Jaher. Hilsa is the most prized fish in Bangladesh and adjacent West Bengal in India. It lives in the sea, but during the June-September monsoon in South Asia, it travels to rivers to breed. It is a valued catch all along the coastline of Asia and up the rivers, from the Yangtze to the Indus. Gastronomes are willing to pay high prices for hilsa caught in the Bay of Bengal and, as they travel upstream, the Meghna, Ganga, Brahmaputra and their distributaries in Bangladesh and India. Overfishing had decimated Hilsa stocks in this part of the world until the Bangladeshi government imposed a ban in March and April, when the juvenile fish are growing up and moving out to sea.

Over half-a-million fishers in 16 of Bangladesh's coastal districts are involved in fishing Hilsa at sea. This year, the Covid-19 pandemic struck while the ban was on. Despite the pandemic, fishers started to go out at the beginning of May, only to be hit with another ban from May 20 to July 22. Since 2019, small artisanal fishers have been included in the ban. Since July 23, fishers have been scouring the sea and rivers for what is considered the king of fish West Bengal and Bangladesh. They are hardly netting any, including in the rivers famous for hilsa – the Padma, Meghna and Tetulia. Hilsa prices have gone sky-high in local markets. Most of the Hilsa now being caught are out of reach of the average person in Bangladesh and are being exported to Gulf countries, North America, Europe and Australia – all big markets for the fish. In neighbouring India, most of the Hilsa in the markets are from the Narmada estuary on the country's western coast. The high prices in markets abroad do not help the Bangladeshi fishers, who are so indebted that they are forced to sell at a pre-fixed price.

“I repaired my boat and fishing gear ahead of the season, Nuruddin Majhi, a fisher from Dhalchar – an island just off the coast in Bhola – told The Third Pole. “I took a loan with high interest. “For us, hilsa is gold, Majhi said. “When we get Hilsa, our families get food. If there is

no Hilsa, we starve. “Every season we go to the dadondar [a local money lender] and NGOs for loans, Majhi said. “Now I do not know how to repay my loan. Majhi had borrowed Bangladeshi taka 200,000 (\$2,360) to repair his trawler. With the end of September and the peak season approaching, he has only been able to sell hilsa worth 70,000 Bangladeshi taka (\$826). Local traders are just as badly hit. Sharif Saudagar, a trader in Dhalchar, said he had invested 8 million Bangladeshi taka (\$94,400) in 18 fishing boats but has been able to earn only 250,000 Bangladeshi taka (\$2,950) so far this season.

Mehedi Hasan Liton, a trader in Matihat on the banks of the Meghna in Laxmipur district, said he was expecting to get Hilsa worth 10,000 Bangladeshi taka-15,000 Bangladeshi taka (\$120-180) per boat this season, but was getting only 1,000 Bangladeshi taka–2,000 Bangladeshi taka (\$12-24) per boat. “I do not know what will happen next, he said. Where have the hilsa gone? Most of the hilsa caught this season have been found in the sea. This has led experts to opine that increasing siltation at river-mouths has blocked the fish's migration routes. The hilsa needs river-mouths to be around 12-metres deep in order to move upstream. It also needs fresh water. While the strong monsoon flow flushes out most of the pollutants from the rivers, it cannot completely eliminate out the very heavy pollution load from cities such as Dhaka. The capital of Bangladesh is on the banks of the Buriganga, which flows into the Meghna via the Dhaleshwari.

Some observers blame the increased movement of ships for the Hilsa shortage, while others allege that the authorities did not enforce the last fishing ban effectively. And there are commentators who say a shortage every few years is part of the natural cycle. Dams and barrages also obstruct the upriver migration of the fish, though this problem is more common in India than in Bangladesh. Anisur Rahman, senior scientific officer of the Bangladesh Fisheries Research Institute, told *The Third Pole* that the shortage was due to a combination of siltation and pollution. He pointed out that the further upriver the hilsa swim, the more polluted the water, forcing the fish to stay away.

However, the Bangladeshi government has taken many steps to increase hilsa production, Rahman said, adding that he expected the catch to increase by the end of the season. Kazi Ahsan Habib, chairman of the Department of Fisheries Biology and Genetics at Sher-e-Bangla Agricultural University, said, “If the water quality of the river is conducive and the current is right, hilsa is produced. “Water flow and optimum water quality, oxygen level, salinity level, these are the big factors, he said.

“Hilsa start coming upstream when they find a suitable environment. “Disruption in their natural breeding environment may impact their migration, he said. The ban and the pandemic Hilsa stocks have been rejuvenated by the fishing bans, but the repeated bans are crippling for most of the fishers, who are totally dependent on their daily catch. Abdul Jalil Hawlader, president of the Pirojpur District Small Fishermen's Association, said fishing in coastal areas stopped for much of this year. And when it was allowed, lockdowns due to the Covid-19 pandemic meant there were

no storage or shipping facilities. Amrit Jaladash – from a traditional fishing community of about 6,00,000 people in Chittagong district – said, “We could not go fishing for six months this year. “We do not have any other income, Jaladash said. “We are in an extreme crisis.

“Our debt burden has increased, he said, Coast Trust, a Dhaka-based NGO, carried out a recent survey in Cox's Bazar, Lakshmipur, Bhola, Patuakhali, Khulna and Bagerhat districts. It found that the ban had left about 80% of the fishers without any means of earning a livelihood. The survey showed around half the fisher families were unable to afford three meals a day. The government distributes 43 kg of rice to each fisher family every month during the ban, but only if the fisher has an identity card. Many fishers complain they have not got their identity cards despite fulfilling all requirements. The survey by Coast Trust showed 34.2% of fishing families did not get the rice despite having identity cards. Half of those who got the rice got it a month late. However, Farhana Lovely, district fisheries officer for Chittagong, told The Third Pole that with over 26,000 registered fishermen in the district, “we have given rice to 26,575 people as rehabilitation assistance during the ban. Azharul Islam, district fisheries officer for Bhola, said there are 130,996 registered fishers in the district. “80,000 families were initially given 40 kg of rice a month for four months, he said. “Later another 1,70,008 people were given 58 kg more. Experts estimate that even during a fishing season with a good catch, a fisher family spends 10,000 Bangladeshi taka to 12,000 Bangladeshi taka (\$120-140) per month while earning around 10,000 Bangladeshi taka. So they keep getting deeper and deeper into a debt trap and do not have the education or skills to earn an income in any other way.

### **West Bengal: Sunderbans billed ‘endangered ecosystem’, mangroves show signs of climate-resilience**

<https://www.hindustantimes.com/india-news/bengal-s-sunderbans-billed-endangered-ecosystem-mangroves-show-signs-of-climate-resilience/story-sixh1ndTydSFSbP3WLhSxM.html>

"The Sunderbans in West Bengal – a UNESCO world heritage site and home to the only tiger that lives in mangroves – has been categorized as an ‘endangered ecosystem’ by a team of scientists from four countries. But there is a silver lining too. The researchers have found that the world's largest mangrove system, which has been degraded because of unbridled human activities in the past, is showing signs of stabilization and is gradually becoming resilient to climate change.

“The Sunderbans, which has seen much degradation in the past, has been categorized as an endangered ecosystem according to the International Union for Conservation of Nature's The Red List of Ecosystems. Felling of trees for human settlement over the past few centuries which has degraded the mangrove to a large extent and the declining fish population were the two primary reasons to tag the delta as an endangered one. Ongoing threats, including climate change and reduced freshwater supply may further impact the delta, said Punyasloke Bhadury, who

heads the Centre for Climate and Environmental Studies at the Indian Institute of Science Education and Research.

The IUCN's Red List of Ecosystems (RLE) is a global standard for assessing the risk of ecosystem collapse. The Giant Kelp Forest in Alaska, the tidal flats of Yellow Sea in east Asia and Lake Burullus in Egypt also fall in the endangered category. The Gnarled Mossy Cloud Forest in Australia and Gonakier forest in Senegal are two critically endangered ecosystems. The Aral Sea which has dried up has been tagged as a collapsed ecosystem. “However, mangrove extent has since stabilised, tiger numbers are slowly recovering and analysis of mangrove condition highlights that only a small proportion of the forest is classified as degraded. We are cautiously optimistic about the future of the Indian Sundarbans, said Michael Sievers, a scientist with School of Environment and Science at Griffith University in Australia and the corresponding author of the research paper. The study was done by researchers from various institutes including the Oxford University and Griffith University in four countries – India, UK, Australia and Singapore. The findings have been published in the latest issue of Biological Conservation-- a journal of the Elsevier group.

The Sunderbans sprawls over 10,200 sq km. While 4200 sq km lies in West Bengal in India, the remaining 6000 sq km is in Bangladesh. Around 200 tigers have adapted to this mangrove and hence have acquired global importance. The scientists have analysed data of past five decades till March 2020, which means even though they have included the effects of Cyclone Aila in 2009 and Cyclone Bulbul in November 2019, they missed out the devastation caused by Cyclone Amphan in May 2020. Cyclone Amphan had devastated almost one third of mangrove forest, top forest officials had said. The scientists have warned that despite the positive signs, several threats remain. Impacts from hydrological modifications and salinity alterations, from climate change and sea level rise, and from coastal erosion and reduced sediment supply all need to be properly monitored and managed where possible.

The findings have been shared with authorities of the state pollution control board and the forest department. “We are planting around 50 million saplings of mangrove species in the Sunderbans to cope with the loss which the delta has suffered during Cyclone Amphan. The tiger population has increased from 88 to 96 in the past one year. A series of measures such as generating jobs through MGNREGA are being taken for the villagers, said VK Yadav, chief wildlife warden of West Bengal.

### **West Bengal: Crab catcher killed in tiger attack in Sunderabans**

<https://www.outlookindia.com/newscroll/crab-catcher-killed-in-tiger-attack-in-sundarabans/1930622>

"A crab catcher was killed by a tiger in West Bengal's Sunderbans on Sunday, the second such incident in three days. A senior forest official said Gopal Baidya (57) was fishing in a creek

along the mangrove forest, when the tiger pounced on him, grabbed him by the neck and dragged him deep into the forest. "Baidya became motionless right before the eyes of his companions -- all of them residents of Satjelia village in South 24 Parganas district," the official said, adding that his body could not be recovered. Two days ago, Maniruddin Gazi (32), a resident of Hemnagar from North 24 Parganas, district, was killed in a similar tiger attack in the Sundarbans. Gazi's half-eaten body was recovered from the forest only a day later.

"We have been trying to convince the villagers not to go fishing near earmarked tiger habitats. We will also have to verify if the deceased, in both the cases, had proper permits," the official added.

### **West Bengal: Is the Managed Retreat Plan for the Sundarbans Misguided?**

<https://thediplomat.com/2020/09/is-the-managed-retreat-plan-for-the-sundarbans-misguided/>

"The authors of the Delta Vision 2050 who are proposing managed retreat from the Sundarbans see other challenges to their vision including the unwillingness of the islanders. While we would argue that any plan for managed retreat should pay attention to what people want, what is perhaps less obvious is the diversity of desires, which development workers often read as the failure of consensus building. Sometimes residents are forging different paths, often from within the same neighborhood. The very few local elites of the region are managing their own retreat and have increasingly begun to acquire two bases: a home in the Sundarbans and another in towns neighboring Kolkata such as Canning and Sonakhali.

Yet, Piyali Mondol, an unmarried woman and one of four daughters who collect crabs for a living in the mangrove creeks opposite her home, cannot afford to move. Nor does she want to. It was only last year that Mondol managed to save enough money to convert her mud hut into a brick home. Cyclone Amphan cracked the roof of her house and will potentially send her into a cycle of debt. Most of the population in her island share her fate – they are landless fishing communities and some only have squatter's rights. They don't have independent means to leave the Sundarbans or buy lands on higher ground.

If the government were to ever come to buy them out for relocation, they will have no land to offer – deepening their precarity even further. The biggest threat Mondol faces is the Forest Department. Wildlife and conservation laws, starting with the Wildlife Protection Law of 1972, have transformed residents of the Sundarbans into encroachers for inhabiting areas designated for the protection of the Bengal tiger. Intensive policing has turned Mondol from being a custodian of the forest to a trespasser there. These attempts to fence off the forest are both detrimental to the foresters and simultaneously compromise biodiversity.

Such conservation methods tend to ignore that forests are also products of human labor and interaction. In the past decade, in order to “wean Mondol off her “forest-dependency, several conservation NGOs have given her free chickens and ducks to rear. On the receiving end of a series of development projects, Mondol must negotiate between the “good livelihood of raising chickens versus the “bad choice of going to the forest. Planned retreat would discipline such patterns of forest dependency by relocating Mondol to a peri-urban location. Mondol is well aware of the crossroads that lie ahead of her. With the onslaught of more cyclones and storms to come, she says, “No, I do not want to leave. I like it here... the city, with its cars and sounds make me want to vomit.

She only wishes to escape the surveillance of the Forest Department and remain in the mangroves. As her neighbor points out: “It is not the tiger that is killing us, it is the fear of the Forest Department that forces us into the mouth of the tiger. Upon asking Mondol about potential future storms that might do even more damage than Amphan, her response echoes that of several others, including Bimla Sarkar. She replied: “let another storm come... we were born here and will die here ... what we can do? Our life is cheap. They [the government] haven't even built us a hospital here.

No one is yet asking what futures in the Sundarban would look like if provisions for basic services and infrastructures were brought to the islands. The majority of Sundarban residents have an attachment to home, a community of relatives and neighbors, and the daily rhythms of life alongside a forest and the accompanying village festival calendar. Taruq Mistry, on the other hand, imagines his future differently from Mondol and Sarkar. He is in his mid-30s with two young children and makes a living by working as a daily wage field laborer. Mistry desires a different home elsewhere – but one with access to a livelihood.

With a stable source of income, he hopes to be able to provide a better education to his children than the one he had access to while growing up. With relation to planned retreat, he responded by saying, “The government would never do that, but if they did, I would go... I don't want to live here anymore. There are more jobs in [the southern Indian states of] Kerala and Tamil Nadu, here we have no jobs. But leaving is not that easy for Mistry either. While he is drawn to the life in the city and its opportunities for work, he was aware that his wife desires no such move. The last time they were in the city for a medical visit, commuting on a train or bus made her sick, and

the food, water, and air in the city didn't suit her. Besides, the two have ailing and elderly parents in the Sundarbans who would not be able to leave the moist airs of the mangroves for the smog of the higher grounds.

Yet no one knows if the next cyclone might be the one that shifts Mondol's desires and make her want to leave. Likewise, one cannot ever discount the fact that after a few years on a factory shop floor in Tamil Nadu, Mistry might want to return to his village. What we heard was not the lack of consensus building or the awareness of climate threats, but a crucial and overlooked aspect of the lives of residents of the Sunderbans: the provisioning of basic infrastructure for a dignified life. A thread that runs through the residents' aspirations is that they want to escape from the lack of basic necessities as much as if not more than they want to escape the rising waters.

If Mondol wanted hospitals, Mistry wanted opportunities for work and access to better education for his children none of which they felt the government would grant them in the delta or elsewhere. Moving People Independent India is familiar with mass displacement of population in the name of development.

India's experiment with industrial modernization meant homelessness for thousands of people in independent India, who were forced to remake their lives in urban and peri-urban areas "housed in furnace-like metal shacks and remade as laborers in a wage economy. Sundarban itself is no stranger to the violence of displacement. The memory of the 1979 massacre in an island named Marichjhapi is all too alive. The island of Marichjhapi was being used by the Forest Department for coconut plantations when lower-caste refugees from Bangladesh, who were promised and then denied resettlement by the West Bengal Left Front government, began making a home on the island. In 1979, the West Bengal government decided to forcibly clear the island of the new settlements. Recounting the massacre from oral histories of survivors, the number of people killed and thrown into the Rai Mangal river is in the thousands, in contrast to the Indian government's official estimates that put the death toll in the dozens. This tragedy shows how the state gave primacy to ecology and revenue generation over people. Is planned retreat again pitting the health of the forest against its custodians?

There have recently been experiments with managed retreats globally, often led or lobbied for by the Dutch. The Dutch Room For River Project, which was conceived in 2007 and completed in 2015, has been hailed as a pioneering success in managed retreat. With a budget of 2.2 billion euros, the Dutch began to protect flood plains and create spaces for the river to flood. In the process, they moved away from policies of raising the dykes in some parts of the floodplains in and around the town of Nijmegen. While not every resident whose house was demolished was happy about the outcome, the project has been hailed a success and is now being either replicated or considered in many parts of the world threatened by floods. The Indonesian President Joko Widodo's announcement to move the capital away from the sinking space of Jakarta is the latest

managed retreat. Nineteenth-century Dutch colonialism created the water crisis for Jakarta and now contemporary Dutch global water governance brings it the solution.

In some instances, retreat has been the product of collective organizing as in the low-lying Beachwood community in Staten Island, a predominantly white borough, which lobbied the governor of New York to have their homes bought out by the government and allow them to relocate elsewhere. This began the process of unbuilding the South Shore as a floodplain for future storms. Managed retreat in North America is a story of race too. While there has been successful community organizing for retreat, predominantly in white floodplain communities, that is not the case for instance in the disappearing marshlands of Isle de Jean in New Orleans, which was destroyed by the oil industry, and whose inhabitants are mostly members of the Biloxi-Chitimacha-Choctaw tribe. Tribe members want to remain and hold onto their way of life in the marshes, even though they have to gradually raise their homes as the waters steadily rise. They would rather have the oil companies retreat so that they can continue with their marshy lives. The conflict here is not simply between the sinking marshes and rising waters, but between two economic arrangements of space: flourishing from subsistence fishing and foraging versus profiting from fossil fuel extraction.

Climate policy discussions often fail to substantially engage with the economic arrangements of subsistence versus capitalist growth and productivity when it comes to spaces like the low-lying Tuvalu in the Pacific. Carol Farbotko, who is a cultural geographer by training, has termed climate policy discussions over Pacific islands as “wishful sinking. The Pacific Islands have become sites of global climate anxiety and experiments projected onto an uneven economic geography. Their disappearances index both the evidence of climate change for climate deniers in Northern nations as well as the tragedy unfolding for the global commons.

When the Water Comes Planned retreat in the Sundarbans will funnel fishers, foresters, and honey-collectors into the dust-laden air of the neighboring city of Kolkata, to become low-wage workers in the building and construction industry. The real-estate boom in Kolkata, which is fast gobbling up the critical wetlands on the edge of the delta, will further devastate the mangroves by altering the hydrological structure of the region. A different future is possible in the Sundarbans if we carefully listen to Piayli, Tarqu, and Sarkar. We have to rethink governance as a community asset: Whereby Sundarbans residents can be given the capacities to maintain their own embankments, build houses attuned to their own knowledge systems, and use the fruits of the forest through ideas of collective ownership.

There is a long history of people who saw the landscape as flood dependent, rather than a flood risk. They knew how to move with the river, cultivate newly formed fertile alluvial mudflats, and sustain themselves from the thriving mangroves. Climate change has offered us a frame to make sense of the mobile landscape as one vulnerable to the furies of wind and tides. But land here has been moving for a long time, perhaps at a slower pace than our current moment. For instance, it

did not escape the notice of 19th century British geologists who marveled and shuddered at how land in the Bengal delta is in a constant state of flux sculpted by the moods of the river and the sea. Farmers often call their flooded paddy fields teeming with fish life jami jalajanta in Bengali – land brimming with life. Rhythms of the sea, the moving mangroves, and the river define their relation to the land and shape their livelihood.

The forest of the Sundarbans is known by residents who live alongside it as “Ma'ar Khamor, which literally translates into “mother's pantry – the mother here is the forest goddess Bonbibu and her forest is thought of as a “commons in times of need. When we begin to treat islanders as custodians and not invaders of the forest, the paradigm of retreat would need to focus on the real threats to the delta – our carbon intensive livelihoods of concrete, cement, luxury cruises, fishing trawlers, and coal plants. If Bimla Sarkar states after surviving a series of cyclones that the Sundarbans is where she was born and this is where she will die, could it be the case that her willingness to die in a certain way goes alongside a particular commitment to life? This is not just an idea of staying alive, but of living a fuller form of life, within her structural constraints, defined by her own parameters of what it means to live well and live autonomously.

### **West Bengal: Sunderbans fishermen look for safer life and better wages**

<https://www.telegraphindia.com/west-bengal/sunderbans-fishermen-look-for-safer-life-and-better-wages/cid/1791190>

"Several fishermen from North and South 24-Parganas, who lived off the fish netted from rivers and creeks adjacent to the Sunderbans, are migrating to Kerala and Tamil Nadu, driven by tiger attacks and depleting catch at home. Thousands of fishermen from Hingaljanj, Basanti, Kakdwip, Kultali, Mousuni, Gosaba and Namkhana, among others, look southward for a safer life and better wages. The threat of tiger attacks is a constant. On Sunday, fisherman Gopal Baidya, 54, was mauled by a tiger in Jhila-Jungle (number 6) of Gosaba in South 24-Parganas. Baidya, a resident of Satjelia-Thakurantala, was eating in his boat when a tiger pounced on him and dragged him away into the forest. He remains traceless. In the past week alone, at least four fishermen were mauled to death by tigers.

Right now, around 3 lakh people from these two districts are involved in catching fish with trawlers and mechanised boats. But that the trend of migrating fishermen was very much in vogue came to light when some thousand fishermen from the southern states contacted the district administrations for help to return home in the early stages of the pandemic-induced lockdown. A member of the Dakshinbanga Matsyajibi Forum said: “We don't have an exact number of such fishermen (who have migrated). But it appears to be around 10,000. They have been working in the same profession in Kerala, Tamil Nadu, and even Odisha. Rakib Biswas of Hingaljanj and Shyamal Das of Kultali, along with hundreds like them from the Sunderbans migrated to Kerala to work with marine fish catchers. Das, 42, said: “Repeated tiger attacks forced many of us to quit fishing here.

“There is also an increased level of salinity in rivers and creeks of the Sunderbans (causing fish shoals to deplete)... These factors, besides better wages, encouraged us to move, added Das, who left in February after selling off his mechanised boat. “Now I earn around Rs 15,000 a month. I never made half of that before I left for Kerala. Fishermen said the commonplace fish varieties such as parshey, bhanganal, bekti, tangra, khorkul, kashkel, foli, chela and datney, once available in abundance, have depleted “alarmingly. Tanmay Sannyal, an expert in fisheries and limnology teaching in the zoology department of Krishnagar Government College, explained why rivers and creeks were more salty and inhospitable for fish. “The many cyclones caused tidal waves, resulting in hyper-salinity of the water in creeks and rivers in the Sunderbans. Fish normally available in these rivers and creeks have natural salinity resistance. But tidal waves turned water hyper-saline, making it difficult for fish to survive, said Sannyal. “Such hyper-salinity, coupled with the felling of trees, damaged the plankton community on which the fish survive.

“Pollution in the rivers has also seriously hampered the reproduction of fish besides damage from the use of micro-hole nets resulting in the catch of juvenile fish. Acknowledging the crisis, Hingalganj's Trinamul Congress MLA Debesh Mandal said: “We will try to explore alternative scope for fishermen to earn a living. Otherwise, such migration will only turn bigger in the future. Bankim Hazra, chairperson of the Gangasagar-Bakkhali Development Authority, said: “We will talk in detail and try to find a way out for the fishermen here.

### **West Bengal: Depleting fish catch forces Sundarbans fishers to migrate to southern states**

<https://scroll.in/article/971784/depleting-fish-catch-forces-sundarbans-fishers-to-migrate-to-southern-states>

"Sankizahan in Kultali area of the Sundarbans, the world's largest mangrove ecosystem made of islands, rivers and creeks, used to be a village of fishermen who hunted on traditional and motorised boats in the local rivers and creeks and on trawlers in the Bay of Bengal. It is now a village of migratory fishermen who fish in India's coastal states of Kerala and Karnataka, that house part of the western coastline and Tamil Nadu to the south, for the better part of a year. Sankizahan resident Rakhil Das, a 38-year-old fisherman, recalled that the situation used to be different a decade ago. In 2015, when one of his two brothers informed him of his plan to migrate to Kerala to work in trawlers engaged in marine fishing and insisted that he too should do the same, Das had resisted.

He didn't want to leave home. His bother Nikunja was convinced that the gradually declining fish catch around Sundarbans had left them with no other alternative. Nikunja left for Kerala. Banamali, his other brother, followed Nikunja the next year. And from 2017, Rakhil Das, too, has been working in Kerala from the beginning of the winter to the onset of the monsoon. The three brothers have to earn for a family of 15, including their elderly parents. “My father never faced a shortage of fish during winter. I have been fishing for nearly 20 years. The situation was

not like this even 10 years ago. But now fishing in the winter hardly helps. The haul starts reducing from November, Das said.

About 500 fishermen from Sankizahan now migrate west and southwards to work in other coastal states. Most of them work there from November-December to June, while some work there throughout the year. And Sankizahan is only one of the many villages in Kultali, Kakdwip, Gosaba, Basanti and Namkhana administrative blocks in the Sundarbans region that underwent this transformation over the past five-six years, as depleting fish catch in the rivers and creeks affected their livelihood. “We knew that some fishermen from the Sundarbans were migrating to other coastal states but had no idea about the extent of their migration until they started contacting us from the end of May, in their hundreds, for help returning home, said Milan Das, general secretary of Dakshinbanga Matsajibi Forum.

“Now, we estimate that about 10,000 fishermen from this area work in those coastal states. Kultali’s Communist Party of India (Marxist) legislator Ramsankhar Halder echoed him. In the west coast (west of Sundarbans), fishworkers can earn up to Rs 15,000 per month. Working in the Sundarbans, it would be less than half. Some people have sold off the traditional boats they owned and have become a full-time worker in trawlers on the Arabian Sea, he said. For years, fishing and aquaculture have been the backbone of the economy of the ecologically fragile Sundarbans region. The migration of the fisher people started about five-six years ago. “Over the past two years, many fishermen simply abandoned their boats and left for the west coast to work in trawlers, said Joykrishna Halder, a former member of the West Bengal Legislative Assembly and president of South Sundarban Fishermen and Fishworkers’ Union.

Local fishworkers’ associations estimate there to be nearly 4,000 small to large trawlers and about 50,000 traditional and motorised boats that are engaged in fishing in the sea, the rivers and the creeks. However, Sourabh Kumar Dubey, a researcher who has been following the changes in the Sundarbans region for several years, pointed out that the fish catch has reduced mainly in the rivers, creeks and estuaries, while the marine catch in the Bay of Bengal has not been affected. “Trawler owners are not migrating or abandoning the business, said Dubey. “Number of trawlers have sharply increased. It’s the traditional fisherfolks who fished in the rivers and creeks who have been hurt and are migrating.

Members from the fishing community, scientists and researchers referred to multiple factors, including impacts of climate change and human interventions, which led to this migration. One of the impacts of climate change has been rising sea level, resulting in increased salinity in river water. The other is increased frequency and intensity of cyclones that keep hampering the usual flow of life. “The catch reduces in the winter because the water level goes down in the rivers, resulting in increased salinity, which in turn affects the habitat of the fish species that prefer lesser saline water, said Suman Bhusan Chakraborty, an associate professor in zoology at the

Calcutta University who specialises on endocrinology. “Besides, pollution is also decreasing the reproduction capacity.

For increasing water pollution, the dumping of industrial waste in the rivers and canals in the Sundarbans' northern neighbourhood has been generally blamed. Many families depend on prawn seed collection along the banks, a practice that also leads to the destruction of juvenile fishes of other species. Photo by Snigdhendu Bhattacharya. Pradip Chatterjee, an environmentalist and convener of National Platform for Small-scale Fishworkers (Inland), referred to a study conducted in 2009, which interviewed fishers in nine places in nine different blocks adjacent to the Sundarban Tiger Reserve.

According to the study, 97% of the fishermen that responded to the survey complained of declining fish catch and 86% of them had blamed trawlers fishing close to the mouth of rivers, 71% blamed the use of micro-hole nets, 54% mentioned water pollution and 14% had mentioned increase in the population dependent on fishing. Organisations of fisher people also cite the gradually decreasing area within Sundarbans Biosphere Reserve where fishing is still allowed. Collection of tiger prawn seeds by dragging fine-mesh nets along river banks has also be blamed for the destruction of many other species of fish. However, they blame trawlers most – for trawling along the mouths of rivers and also for the use of fine-mesh nets.

According to Tuhin Ghosh, a professor at the department of oceanographic studies, Jadavpur University, human interventions had more to do with this migration than climate change. “More people joined fishing over the years, increasing competition, while the use of the fine-mesh net by trawlers resulted in the netting of juveniles and led to the depletion of the fish population, he said. Bankim Hazra, chairperson of Gangasagar-Bakkhali Development Authority, however, blamed climate change as the main reason behind migration. “Increasing cyclones have left the local people an anxious lot, he said. For some fishermen, like Sankizahan resident Paramesh Das who has been working in Kollam of Kerala, the prospect at home is so gloomy that they did not return despite the lockdown, hoping to resume work once trawlers started moving into the Arabian Sea.

**West Bengal: With depleting fish catch, Sundarbans fishers migrate to other coastal states**

<https://india.mongabay.com/2020/08/with-depleting-fish-catch-sundarbans-fishers-migrate-to-other-coastal-states/>

"Sankizahan in Kultali area of the Sundarbans, the world's largest mangrove ecosystem made of islands, rivers and creeks, used to be a village of fishermen who hunted on traditional and motorised boats in the local rivers and creeks and on trawlers in the Bay of Bengal. It is now a village of migratory fishermen who fish in India's coastal states of Kerala and Karnataka, that house part of the western coastline and Tamil Nadu to the south, for the better part of a year. - About 500 traditional fishermen from the Sankizahan village in the Sundarbans region migrate to

other coastal states in India for the better part of the year. - This migration, that seems to have happened over the past five or six years, is fuelled by the depleting fish catch that is affecting the livelihood of the traditional fishing communities. - Human intervention, including harmful fishing practices and pollution along with climate change are among the reasons attributed for the depleting fish stock. Sankizahan resident Rakhil Das, a 38-year-old fisherman, recalled that the situation used to be different a decade ago. In 2015, when one of his two brothers informed him of his plan to migrate to Kerala to work in trawlers engaged in marine fishing and insisted that he too should do the same, Das had resisted. He didn't want to leave home.

His brother Nikunja was convinced that the gradually declining fish catch around Sundarbans had left them with no other alternative. Nikunja left for Kerala. Banamali, his other brother, followed Nikunja the next year. And from 2017, Rakhil Das, too, has been working in Kerala from the beginning of the winter to the onset of the monsoon. The three brothers have to earn for a family of 15, including their elderly parents. “My father never faced shortage of fish during winter. I have been fishing for nearly 20 years. The situation was not like this even 10 years ago. But now fishing in the winter hardly helps.

The haul starts reducing from November, Das said. About 500 fishermen from Sankizahan now migrate west and southwards to work in other coastal states. Most of them work there from November-December to June, while some work there throughout the year. And Sankizahan is only one of the many villages in Kultali, Kakdwip, Gosaba, Basanti and Namkhana administrative blocks in the Sundarbans region that underwent this transformation over the past five-six years, as depleting fish catch in the rivers and creeks affected their livelihood. “We knew that some fishermen from the Sundarbans were migrating to other coastal states but had no idea about the extent of their migration until they started contacting us from the end of May, in their hundreds, for help returning home.

Now, we estimate that about 10,000 fishermen from this area work in those coastal states, said Milan Das, general secretary of Dakshinbanga Matsajibi Forum. Kultali's Communist Party of India (Marxist) legislator Ramsankhar Haldar echoed him. In the west coast (west of Sundarbans), fishworkers can earn up to Rs. 15,000 per month. Working in the Sundarbans, it would be less than half. Some people have sold off the traditional boats they owned and have become full-time worker in trawlers on the Arabian Sea, he said. For years, fishing and aquaculture have been the backbone of the economy of the ecologically fragile Sundarbans region. The migration of the fisher people started about five-six years ago. “Over the past two years, many fishermen simply abandoned their boats and left for the west coast to work in trawlers, said Joykrishna Haldar, a former member of the West Bengal legislative Assembly and president of South Sundarban Fishermen and Fishworkers' Union.

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One of the impacts of climate change has been rising sea level, resulting in increased salinity in river water. The other is increased frequency and intensity of cyclones that keep hampering the usual flow of life. “The catch reduces in the winter because the water level goes down in the rivers, resulting in increased salinity, which in turn affects the habitat of the fish species that prefer lesser saline water. Besides, pollution is also decreasing the reproduction capacity, said Suman Bhusan Chakraborty, an associate professor in zoology at the Calcutta University who specialises on endocrinology. For increasing water pollution, the dumping of industrial waste in the rivers and canals in the Sundarbans' northern neighbourhood has been generally blamed.

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### **West Bengal: Lockdown, Amphan trigger rise in Sunderbans man-tiger conflict**

<https://timesofindia.indiatimes.com/city/kolkata/lockdown-amphan-trigger-rise-in-sunderbans-man-tiger-conflict/articleshow/77709495.cms>

"The Covid-induced lockdown and cyclone Amphan seem to have resulted in dependency on natural resources in the Sunderbans. The number of persons killed in tiger attack this year so far points to it. While some have initiated efforts on the ground to check the conflict, others say this phenomenon is noticed every time a disaster strikes the region. Animals, too, would be experiencing a new normal, especially if they stay close to human habitats; some of the stress that humans are feeling because of the disease and the lockdown would have a spin-off effect on animals. Responsible behaviour and an extra dose of care and caution can mitigate this impact. With four months still to go in 2020, 15 fishermen have already been killed in tiger attack in the mangroves two more than the number of persons killed a year ago in 2019. This is the official data; the actual number may be higher.

In the latest incident a few weeks ago, 40-year-old Haripada Mandal a jobless villager of Bali island was killed in tiger attack in the forest of Pirkhali while had ventured into the woods with two others, who had reportedly returned to the Sunderbans from another state during Unlock 1. Interestingly, more than half of these incidents 8 have been reported after May 20, the day Amphan hit the swamp. In another such incident in the Jhila forest, the victim a jobless labourer had reportedly returned to the Sunderbans a few days before the incident. Keeping an eye on the pandemic and rising conflict situation, city-based NGO Society for Heritage and Ecological researches (SHER) has identified 100 licenced fishermen in the mangroves to provide them with portable LPG cylinders.

"The fishermen with their boats registered with the forest department leave for fishing inside forest for days where they need to cook on their earthen stove on boat. The traditional earthen stove run on dry firewood forces a villager to venture into the swamp to collect the firewood. Moreover, in the wet and humid condition of the landscape, it is tough to get dry fuelwood for cooking. This makes both the human and tiger vulnerable to engage in conflict. It is already known that tiger attacks people mostly whenever human enters the forest, said Joydip Kundu of SHER. Sunderbans Tiger Reserve field director Tapas Das said that the plan was in place for a long time, but it was finally executed recently.

"We handed over the cylinders with customized tough metal cases to avoid the toppling over of utensils on choppy waters to 25 licenced fishermen in Basirhat range in the first phase, he added. On rise in dependence on natural resources during lockdown and post Amphan, Das said that there's a possibility. "In a tiger attack case reported from Jhila 3 recently, the victim was a migrant labourer who had just returned to his home in the Sunderbans, Das added. Anurag Danda, senior visiting fellow with Observer Research Foundation, has his take. "Dependence on natural resources increases whenever a disaster happens. The trend was noticed during Aila, too. And more the fishermen get exposed, more there are cases of tiger attacks. Moreover, due to the

pandemic situation this time, those who usually don't venture into the woods to collect fish or crabs are also doing so.

Hence, there is rise in accidents this year, Danda added. The eight post Amphan tiger attack cases that also coincided with return of migrant labourers were mostly reported from Pirkhali, Jhila and the forests of South 24 Parganas division. In the incident at Jhila 3 in Basirhat range, villagers were even seen recording the entire process of the victim's body being retrieved from inside the forest.

### **West Bengal: Recurrent capsizing of fly ash laden ships and barges in river Hooghly DMF moves National Green Tribunal**

"Everyday hundreds of Barges, mostly belonging to Bangladesh, carry fly ash from the Indian ports of Kolkata and Haldia in West Bengal to Bangladesh ports like Khulna, Mongla or Chattagram. Fly ash from India feeds cement factories in Bangladesh. The navigation route of cargo vessels cuts across Sundarban mangrove forests in both India and Bangladesh - the largest nursery of fish in Bay of Bengal and the only mangrove tiger habitat on this planet. Indian Sundarban has seven conservation regimes on it.

Sundarban's water area harbours prime estuarine fishing grounds. Besides stretches of Hooghly river falling in the cargo navigation route have been declared as Hilsa Sanctuary. In Indian side at least 100 thousand small scale and artisanal fishing communities are dependent upon the fisheries in River Hooghly and the Sundarbans for their survival and livelihood. Fly ash is a well known toxic and hazardous industrial waste that arises out of burning of coal in thermal power plants and other industries. Capsizing of ships and barges laden with fly ash pollutes a large water area adjacent to the place of capsizing and not only that, it is always related with oil spill from the sunk vessels. Moreover, the capsized boat and associated rescue activities make the area inaccessible for fishing.

The sunken structures continue to damage fishing nets and boats by entanglements and collisions. Frequent sinking of the ships and barges indicates that the vessels are not seaworthy. They are old and mostly over their operational life. Dakshinbanga Matsyajibi Forum (DMF) had repeatedly moved the Inland Waterways Authority of India, Kolkata Port Trust, Government of West Bengal and the State Pollution Control Board with the following demands - - Immediate hauling up of the fly ash laden sunken ships from the river; - Taking precautionary measure against dumping of fly ash loaded in the ship into the river; - Assess the damage inflicted to water environment and fish resources and make the concerned shipping company pay for it; - Compensate the fishers whose livelihood has been affected by the ship or barge capsizing; - Take immediate measure to stop sailing of old and non-seaworthy ships or barges in the Indo-Bangladesh navigation route; - Stop cargo ship navigation through eco-sensitive zones like Hilsa Sanctuary and Sundarban and make alternative arrangement for cargo transport. Failing to get any appropriate response from the concerned authorities Dakshinbanga Matsyajibi Forum (DMF)

was compelled to move the National Green Tribunal (NGT) by preferring an application under Section 14 read with section 15 of the National Green Tribunal Act, 2010 raising substantial questions relating to the environment which affects the community at large as defined under Section 2(m) of the National Green Tribunal Act, 2010.

DMF gratefully acknowledges the legal counselling and support given by the Legal Initiative for Forest and Environment [LIFE] in filing the case in NGT. DMF also acknowledges the inputs provided by Avli Verma and Shripad Dharmadhikari of Manthan Adhyan Kendra in developing necessary understanding of the issues related to inland waterways.

### **West Bengal: Fishermen observe fewer shrimp and fish deaths by pollution this year**

<https://india.mongabay.com/2020/08/west-bengal-fishermen-observe-fewer-shrimp-and-fish-deaths-by-pollution-this-year/>

"Around mid-April, when Siddik Mollah, a fisherman at a village called Boyarmari, located in the district of North 24 Parganas in West Bengal, found that day-by-day shrimps were growing unhindered on his Bheri (embanked water body with shallow water), he was pleasantly surprised. By the end of April, Mollah's Bheri had a healthy population of shrimp. Yarul Islam Mollah, another fisherman at Boyarmari, also had a similar experience. This year, nearly 90 percent of shrimps survived on his Bheri. For almost the last ten years, every year, the picture was different. The end of April would come with scenes of dead shrimp floating on Bheris at Boyarmari. On average, between 50-80 percent of the shrimps would die in about 30-35 days of releasing larvae in the water body.

This year, almost 95 percent of the shrimp survived, said Mollah. - At Boyarmari, a village in West Bengal, on an average 50-80 percent of the shrimps being cultivated would die in about 30-35 days of releasing larvae in the water body. This year, almost 95 percent of the shrimp survived, report individual fishermen. - With factories, especially tanneries, in the nearby areas remaining shut or working only in limited capacity for the last four months, pollution in the river is controlled and fishermen and researchers claim the cleaner water helped fish survive and breed. - With less pollution, this year, there are expectations that fish stock across West Bengal will rise. Fishermen are yet to see higher fish production turn into profits as, due to western disturbance, not many fishermen could venture into sea for fishing this year. Small canals connect Bheris at Boyarmari to a river called Bidyadhari, a saline water river, suitable for shrimp cultivation. The river flows through the district of North 24 Parganas to the Bay of Bengal through the deltaic Sundarban region. Bidyadhari receives saline water under tidal effect from the sea.

However, it also acts as a conduit to Kolkata's sewage and effluents released from various factories, including tanneries, garment, plastic and glass factories. "Effluent from tanneries is the main reason for the contamination of water. Since the last ten years, as the number of tanneries

started increasing, water turned more and more contaminated and shrimps started dying, said Mollah. Now, with factories remaining shut or working only in a limited capacity for the last four months due to the nationwide lockdown, anecdotes from fishers claim cleaner water has helped fish and other aquatic species to survive.

Salinity, pollution puts livelihoods at stake About 25 years ago, most of the existing Bheris were rice fields. As shrimp from West Bengal started gaining popularity in the export markets, farmers saw profitability in shrimp cultivation. They started converting agricultural land into Bheris, and the state government too supported this drive. Shrimp cultivation became a booming trade, not only at Boyarmari, but also in large parts of North 24 Parganas. However, after Aila, a devastating storm that hit coastal West Bengal in 2009, many Bheris turned unfit for shrimp cultivation due to excess salinity. In normal circumstances, this salinity should have normalised naturally in the course of two to three years.

However, increasing river pollution never let the perfect condition for shrimp cultivation to prevail again. Shrimps were subject to a disease called White Spot, a bacterial infection, which kills hundreds of shrimp in one go. Contaminated water is one of the major causes of this infection. As a result of this continued dip in shrimp production, many fishermen migrated outside West Bengal in search of jobs. Rising river pollution In March 2019, hundreds of farmers from North 24 Parganas staged a protest at Basanti Highway, a major road in the district, against the rising pollution level in Bidyadhari. They claimed contaminated water of the river was destroying their crops, fish, shrimp and causing health problems in children. Effluents from a large number of tanneries in and around Kolkata fall in Bidyadhari.

“Tannery industries are listed as the most polluting activity due to the wide type of chemicals applied during the conversion of animal skins into leather. Chromium salts, phenolics, tannins, organic matter, among other products, are constantly released to the environment in tannery wastewater. These pollutants offer environmental risks to the aquatic life and human health, states a 2018 research article. Kolkata has historically been a hub for leather production. It is home to more than 500 tanneries, which were once concentrated in Tangra, Tiljala and Topsia areas in the eastern fringes of the city. As the city expanded, these areas became densely populated localities, and the pollution on account of the tanneries created havoc for residents. In 1995, the Supreme Court ordered 538 polluting tanneries in the areas to relocate to the outskirts and also set guidelines for leather waste treatment through effluent plants. In 2005, the West Bengal government set up a new leather hub, the Calcutta Leather Complex, at Bantala, outside Kolkata in North 24 Parganas.

The complex included an effluent treatment plant. At present, there are about 375 tanneries operating in the complex. According to Ramesh Juneja, president of the Calcutta Leather Complex, 150 new tanneries have come up in the complex in the last ten years. “The complex had a capacity of treating 20 million litres of effluent a day, and it was sufficient for existing

units. The complex would add additional capacity of treating 20 million litres of effluent a day soon, as a number of new tanneries are expected to open establishments in the complex in the coming days, said Juneja. In 2018, a Comptroller and Auditor General (CAG) report observed that as of April 2017, 49 tanneries out of 376 tanneries in the leather complex were not connected with common effluent treatment plant (CETP). As a result, untreated effluents were discharged into the nearby river without treatment, leading to pollution. Juneja claimed illegal tanneries outside the complex were the source of river pollution.

“About 200 illegal tanneries are still operating in Tiljala and Topia region, and they are the source [of] pollution in the river. Tanneries in the leather complex have proper treatment plant and adhere to all norms, he said. “We need to seriously take up the issue of river pollution to save and improve the livelihood of the people engaged in shrimp cultivation. Water is an important factor in fishing and higher level of oxygen in the water makes a big difference in the quality and quantity of fish. Shrimp has potential to provide employment to a large number of people, including migrant workers in the region. Uncontrolled and unethical practices of releasing effluents in the river is a major threat to their livelihoods, said Aniruddha Dey, chairperson, Professional Institute for Development & Socio Environmental Management (PRISM), an NGO.

Silver lining in fish production this year More than 100 kms away from Boyarmari, at Tribeni, a town on the banks river Ganga in the Hooghly district of West Bengal, Arindam Chakraborty, a researcher in the field of fisheries, spotted fish like chital and aar floating alive in good numbers on the banks of the river. Other years, the shore would be populated with dead fish. For years, an old shipwreck just, about 100-150 feet away from the bank of the river has been a nesting ground of several sweet water fish that grow in parental care. The nooks of the shipwreck provided safe shelter for the fish to breed, as it remained out of bounds of fishing nets. However, when industrial effluent from nearby paper factories mixed with water, the fish would die a natural death and were found floating on the banks. But this year, they were mostly alive. “Clean water, less industrial effluents helped the fish survive, said Chakraborty. With less pollution, this year, there are expectations that fish stock across West Bengal will rise.

“Due to less pollution, the distribution pattern of fish is better this year. They could migrate till long distances in the river from the sea. Also, during lockdown as fishing activities had come to halt, the population of riverine fish was higher, said B K Mahapatra, principal scientist at Central Institute of Fisheries Education, Kolkata. However, fishermen are yet to see higher fish production turn into profits. Due to western disturbance, not many fishermen could venture into sea for fishing this year. But they do anticipate a good fish stock.

“This year, the production of fish like Vemmani Shrimp and Pomphlet was better than last year. However, it will take some time to assess the overall production, as fishermen could hardly venture into the sea due to bad weather. We do expect better fish production this year, said Bijon

Maity, secretary of the West Bengal United Fishermen Association. While profits from fishing remain doubtful, fish are surely breathing again in West Bengal.

### **West Bengal: The Sunderbans in Crisis**

<https://www.epw.in/journal/2020/34/letters/sunderbans-crisis.html>

"The COVID-19 outbreak has caused a huge public health crisis throughout the globe. While imminent health concerns have naturally taken priority, the impact of certain other consequences of the pandemic is yet to be fully appreciated. One of these other consequences includes the unplanned migration of a mostly unorganised labour population in the developing world. To understand the consequences of such a migration on the lives of labourers and wildlife, let us look at the present situation in the Sunderbans in India. The Sundarban Biosphere Reserve, India (9,630 sq km) is situated within the world's largest delta and is the only abode of mangrove tigers. About 4.6 million people live in the Sunderbans and their lives are intricately intertwined with the forests around them.

Accordingly, being the largest contiguous mangrove patch in the world, the area has been heavily regulated by the Government of India for its conservation. Traditionally, the livelihood of the residents of Sunderbans is dependent primarily on agriculture, fishing, tiger prawn production, seed collection, wood and honey collection, and ecotourism. Approximately 60% of the total productive population of the area is dependent on agriculture and 88% is dependent on fishing. There was a consistent increase in total agricultural land from 1990 to 2006 (16.9% to 20.93%) and ecotourism grew at 101% from 2003 to 2009.

However, there was a sharp decline in these occupations in the following years due to rising sea levels and climate change. The total agricultural land declined to 16.36% in 2013 due to rising sea levels and the supercyclone Aila 2009. Likewise, the residents who have been dependent on fishing for sustenance are finding it increasingly hard to catch fish due to the excessive saltwater intrusion in the inner delta and the overexploitation of common pool resources. This has resulted in a situation wherein 34% of all the people residing in 54 out of the 102 islands in the area are under life-threatening poverty. All of this has resulted in the seasonal migration of men from the Sundarban area to other parts of India in search of better livelihood opportunities. At present, the situation has become so dire that one member from 75% of all families in the area is required to migrate and work in other parts of India to sustain their family.

Earlier this year in May, another super-cyclone Amphan caused massive devastation throughout the Sundarban amidst the COVID-19 lockdown. Officially, 28% of the Sundarban area had been damaged by the disaster and 1,200 sq km (out of the total 4,263 sq km) of forests had been destroyed. With seasonal labour migration halted due to the lockdown and the dropping rates of ecotourism, the socio-economically marginalised population has once again resorted to agriculture as their only means of sustenance. However, given the high levels of saltwater

intrusion caused by the rising sea levels and the flooding of the Sundarbans by the cyclone, agriculture does not seem to be a viable option. Accordingly, reduced income opportunities due to COVID-19, destruction of properties due to Amphan, and low productivity of agricultural land due to climate change have pushed the marginalised population of the Sundarbans to the brink of survival. The combined impact of these issues has forced the population to resort to illegal means to sustain a living.

Thus, there has been an increase in the illegal exploitation of mangrove resources and tiger poaching activities. While local relief efforts have temporarily managed the situation in the remote Sundarban islands, it may take decades for the islands and islanders to heal. The economic austerities brought about by the pandemic will further delay this recovery. There is a serious need to introduce alternative green-livelihood options for the marginalised and vulnerable populations of the Indian Sundarbans. Some of the possible livelihood options could be the introduction of grocery shops, development of local transport, pond re-excavation, organic farming, handicrafts works, small-scale aquaculture, poultry farming, and plantation of fruit-producing trees. These alternative livelihoods can replace community livelihoods like fishing, aquaculture, agriculture, ecotourism, non-timber forest product collection, etc, which have been adversely affected due to migration of labourers and poaching in conserved forest areas and the shrinking market due to lockdown.

With reduction in income sources, vulnerability from natural disasters, and the dangers posed by the COVID-19 pandemic, the marginalised island communities can rely only on sporadic and uncertain relief efforts to conserve the largest delta in the world and the last abode of the charismatic mangrove tigers. It is imperative that the concerned state governments should pay heed to this issue and provide alternative means of sustenance for the people living in the Sunderbans.

### **West Bengal: Rise in catch may bring down hilsa retail price**

<https://timesofindia.indiatimes.com/city/kolkata/rise-in-catch-may-bring-down-hilsa-retail-price/articleshow/77533526.cms>

"Prices of hilsa promise to dip due to a dramatic rise in catch with the east-wind, accompanied by drizzling at the confluence of the river Hooghly and Bay Bengal, making hilsa Hooghly-bound. After a long dry spell, the catch of Hilsa started improving from Monday. On Wednesday, the catch was 55,000kg, the highest catch this season. The higher catch in the Bay of Bengal has its cascading effect in the city markets. For the first time hilsa's retail price has dipped, though not significantly, yet the bigger catch promised further dip in price, making it affordable for middle class Kolkatans to buy the fish.

On Thursday, hilsa weighing more than 1.5 kg each was sold at Rs 1,700-1,800 per kg. "Price of this size hovered around Rs 2,200 a kg throughout the season, said Amar Das, a fish trader at

Lake Market. Bijon Maity, secretary, Kakdwip Fishermen's Association, said, "Hilsa's catch completely depends on the right kind of weather condition - ilshe guri bristi (drizzle) and pubali haa (east wind). Since Monday, we have been experiencing these weather conditions that made fishermen rush to the confluence and the catch increased steadily. "If the catch was modest 2,000kg on Monday, it became 55,000kg on Wednesday. At Digha, where the catch was as low as 300-400kg a day, on Wednesday, it rose to 1,000kg. Significantly, the catch was also of remarkably bigger size - 800 gram to 1.7kg. Bigger the size, greater is the taste, he added. Partha Sarathi Kuti, a wholesale trader of Diamond Harbour's Nagendra bazar, said, "The size of catch is remarkable.

There is hardly any hilsa weighing below 700 gram. Majority of the catch weighed higher than 800 grams. Hilsa of 500 gram, which used to dominate the catch, is significantly less in the last three days. Bablu Das, a fish merchant at Maniktala Market said, "The hilsa market this year remained gloomy with shortage of supply and sharp drop in purchasing capacity. If middle class people cannot buy fish, there is no point running a business for miniscule rich people. Since hilsa controls the price of other fish, its unavailability also left fish varieties unusually dearer. "Since hilsa price was unaffordable, we looked for other varieties.

This has made fish across the spectrum costlier. Even a couple of days ago, a hilsa weighing below 500 gram was being sold at Rs1,100 a kg. I stopped buying Hilsa, said Rama Ganguly, a buyer at Gariahat market. According to fish merchants, if the weather conditions prevail like this and the catch remains high like on Wednesday, the Hilsa of bigger size (>800 grams, <1.5 kg) and tastier variety will dip to Rs 1,000-1,200 a kg.

### **West Bengal: Tiger kills fisherman in Sunderbans**

<https://timesofindia.indiatimes.com/city/kolkata/tiger-kills-fisherman-in-sunderbans/articleshow/77514611.cms>

"A 50-year-old fisherman was mauled to death by a Royal Bengal Tiger at a creek off Pirkhali forest in the Sunderbans early on Wednesday. Haripada Mondal, a migrant worker who had returned from Andhra Pradesh two months ago, was leading a team of five fishermen who boarded a boat that left their native Bali village in Gosaba on Monday. As the group was busy heaving their catch at the creek, the tiger leaped out of adjoining Pirkhali forest and dragged Haripada away. The others chased the animal with poles for a kilometre and managed to bring Haripada back to the boat, but it was too late. They returned to Bali village with his body. "We have sent a team to the village and will probe if the fishermen had passes to venture into the creek area, a forest official said.

### **West Bengal: LPG-run ovens to keep Sunderbans fishermen away from tiger habitat**

<https://www.outlookindia.com/newscroll/lpgrun-ovens-to-keep-sunderbans-fishermen-away-from-tiger-habitat/1913528>

"Fishermen in the Sunderbans region are being provided with small ovens fitted with LPG cylinders to stop them from collecting firewood from the reserve forest, where they often fall prey to tigers, a top forest official said on Monday. Chief Wildlife Warden Ravikant Sinha said 100 LPG-run ovens will be supplied to as many fishermen in Basirhat block of North 24 Parganas district, as part of a pilot project. ""We have plans to reach out to as many fishermen as possible in the forest belt after having determined the success and sustainability of this initiative. One cylinder can last up to 12 days, the time usually taken by the fishermen to complete one trip,"" he said. As options are limited in the Sundarbans - the world's largest mangrove forest intersected by rivulets and creeks - fishermen often anchor their boats on the banks and enter the jungle to collect wood. Many of them are mauled to death by tigers inhabiting the forest, Sinha said. ""We want to stop this practice as soon as possible. This new initiative, if successful, will reduce the incidence of tiger attacks on humans.

""On Saturday, 23 cylinders were distributed among the fishermen in North 24 Parganas, with assistance from NGO Society for Heritage and Ecological Research, and the rest would be doled out soon,"" he told PTI. Over the past two months, at least two villagers were killed by tigers when they ventured into the jungle looking for firewood in Kumirmari and Deulbari areas of Sunderbans. In both the cases, half-eaten bodies of the victims were found later, forest department sources said.

**West Bengal: Craving for Hilsa grows as poor catch fails to tickle palate**

<https://www.hindustantimes.com/kolkata/bengali-craving-for-hilsa-grows-as-poor-catch-fails-to-tickle-palate/story-ouhCTEwstSLGBl2dqCxCKM.html>

"Hilsa, the queen of fish, which millions of Bengalis crave for, is yet to keep its annual date with monsoon and West Bengal this year. "On an average, a Hilsa catch of 20,000-25,000 tonnes in a year is considered to be normal. The maximum yield comes during monsoon, when the fish migrates upstream into rivers from the Bay of Bengal to breed. But so far, the catch has been less than 100 tonnes this year. In recent times, 2016 was, undoubtedly, the best, said a senior official of the state fisheries department. In June, when the over two-month-long coronavirus disease-induced (Covid-19) lockdown restrictions were lifted, fishermen associations had exuded hope that this year could see a bumper Hilsa catch, as the Ganges and its tributaries were less polluted due to the lockdown coupled with bountiful rains.

"There is an annual ban to catch Hilsa between April 15 and June 14 during its breeding season. Fishermen had suspended work from end-March due to the lockdown. The rivers were also relatively clean, which made us optimistic that there could be a bumper catch this year. However, the insignificant catch mostly includes Hilsa, which are less than a kilogram (kg) in weight, said

Shyamsundar Das, joint secretary, West Bengal United Fishermen Association. Experts said that cleaner river water is not enough to attract shoals of Hilsa. Several other factors might have contributed to a poor catch, including siltation at the mouth of the rivers, poor flood pulse, inadequate rainfall and unfavourable wind pattern.

“Hilsa will migrate upstream into the rivers if they find a depth of 80–90 feet at their mouth. Unfortunately, prolonged siltation in some parts of the rivers have reduced their depth to less than 30 feet that are likely to go up to 60 feet during peak monsoon. Inadequate rainfall in the upper catchment basins has led to poor flood pulse, which could have led to a drastic shortfall in Hilsa catch this year, said Utpal Bhowmik, a Hilsa expert and the former head of the riverine fishery division at Central Inland Fishery Research Institute. “Perhaps, Hilsa is moving towards Bangladesh following tremendous resistance in our rivers and, as a result, is avoiding channels in West Bengal, said Pradip Chatterjee, convener, National Platform for Small Scale Fish Workers. However, all is not lost for Bengal Hilsa lovers, as hope springs eternal to tickle an inveterate Bengali's palate.

“There is still some time left, as the Hilsa season lasts until October in Bengal. A good monsoon in August-September will make up for the poor catch this year, said Das. On the contrary, rivers in neighbouring Bangladesh – the happy hunting ground for Hilsa – such as the Brahmaputra have good flood pulse because of heavy rains in their upper catchment areas. Fishermen associations in West Bengal said that Bangladesh has had a bumper Hilsa catch this year – one of the country's major exports to international markets. Bangladesh, like Bengal, had suffered a jolt in early 1990, when the country's Hilsa population had dwindled rapidly due to a raft of factors, including climate change, overfishing, and reduction in water flow in its rivers.

However, the Bangladeshi government strictly enforced seasonal ban on Hilsa fishing that led to a rebound over the past two and half decades. Earlier this week, the Border Security Force (BSF) personnel in North 24 Parganas district on the Indo-Bangla border had seized around 126 kg of Hilsa, while the consignment was being smuggled into the country from Bangladesh. A senior BSF official had said that it was the largest consignment of Hilsa seized in recent times and the first this year.

### **West Bengal: Dip in hilsa catch worries fishermen in Bengal**

<https://www.outlookindia.com/newscroll/dip-in-hilsa-catch-worries-fishermen-in-bengal/1910375>

"Belying promises of a bumper hilsa yield due to less pollution and the reduced economic activities in the seas amid the coronavirus crisis, the "silver crop" catch has dropped this season in West Bengal, an official said on Thursday. The dip in hilsa yield has cast a dark shadow on the fortunes of the fishermen as about 25 per cent of the projected catch during the July-August period was achieved so far, Digha-Shankarpur Development Authority vice chairman Akhil Giri said. "Around 800 trawlers have gone out to the sea from early July this year and most of them have returned empty-handed. About five days back, there was a negligible catch and this would be around 25 per cent of the projected hilsa yield in July-August," he told PTI.

As there was near-zero commercial activity in the seas and the rivers, and no industrial effluents were released into the water during the three-month hiatus, fish breeding, which is common during this season, was expected to pick up the pace, he said. Lack of wind from the east, which makes the fish swim from the deep sea to the coast to lay eggs, is the main reason why fewer hilsa in July has been caught, Giri said. "We keep our fingers crossed to recover part of the losses incurred in the current season," a fisherman said. Echoing Giri, Kakdwip Matso Unnayan Samity's general secretary Bijon Maity said the hilsa catch in July has dipped this year as compared to the haul in the corresponding period last year.

"Compared to the yield in the last 20 years, the hilsa haul has been the lowest between July 15 and August 5 this season. Fishermen could manage to net 5-7 metric tonne in August so far. The average catch in the Kakdwip belt is about 2,000 tonne for a season," he said. Fishermen of about 1,200 trawlers in the Kakdwip area in South 24 Parganas district are suffering losses this year, Maity said. The Hooghly River meets the Bay of Bengal near Sunderbans in South 24 Parganas district, and the confluence happens to be the breeding ground for hilsa, which moves from the sea to the river around this time of the year.

Asked whether the coronavirus scare is keeping fishermen from going out to sea in large groups in trawlers, Giri said the association of the traders has adopted all precautionary measures to contain the spread of the disease. "No one of 1,600 trawlers in the Digha-Shankarpur belt has tested positive for the disease. The dip in the hilsa catch cannot be linked to less number of boats venturing into the sea," he said.

### **West Bengal: Hilsa haul dips to '25-year low'**

<https://www.telegraphindia.com/west-bengal/coronavirus-outbreak-hilsa-haul-dips-to-25-year-low/cid/1788254>

"Fishermen and trawler owners in East Midnapore and South 24-Parganas have reported a "negligible hilsa catch six weeks into the fishing season. For the first time in almost 25 years a July monsoon proved so dry for the hilsa catch, sources said, attributing it to less rainfall and lack of easterly winds that help in the movement of the prized fish. Digha Fishermen's Association secretary Shyamsundar Das said he had been tracking this trade for 30 years, but for the first time was seeing a hilsa harvest that "you can literally count on one hand. Assistant director of fisheries (marine), South 24-Parganas, Jayanta Pradhan agreed that in July the hilsa catch "almost amounted to zero.

"Going by the record of the fisheries department this has been the lowest-ever catch in 25 years, he said. Hilsa trawlers, of which there are 3,500 in East Midnapore and 12,000 in South 24-Parganas, began fishing on the government-stipulated date of June 15 this year. Over a month and a half later, they say they have been "running at huge losses ever since. "The minimal hilsa that we have managed to catch has not fetched us even a fifth of the money spent on fuel and maintenance. We had a low yield in June but we were banking on a strong July monsoon which never came, said trawler owner Trilokesh Jana, who owns five vessels but has operated only three since June.

"We were bleeding in the lockdown. Our only hope was the hilsa, but even that was dashed, Jana added. Sources said that South 24-Parganas' fishing economy for trawler owners, fishermen and fishmongers was almost wholly reliant on July's hilsa season. In East Midnapore, sources said pomfret and prawn catches had kept operators' heads above water. "But we can't export them because of lockdown norms, and have to sell them dirt cheap in local markets, said a fisherman. To add to their woes, Tuesday's low-pressure formation over the Bay of Bengal that is likely to continue on Wednesday has led authorities to ban fishing activities over these two days. "This year has been a series of disasters, said a Digha fisherman. "Normally, we go on hilsa trips five times a month. Since June, we went only twice, and lost money. The average fisherman has not even made Rs 3,000 so far.

### **West Bengal: Corona-scared fishermen stay at home, leave city starved of hilsa**

<https://timesofindia.indiatimes.com/city/kolkata/corona-scared-fishermen-stay-at-home-leave-city-starved-of-hilsa/articleshow/77360686.cms>

"Monsoon has peaked, but the city still remains hilsa-starved this year. The prize catch of fish weighing a kilo and beyond has eluded us so far. Very few fishermen are bringing in hilsa supplies to the market and these are in the 350 grams to 500 grams range. Blame it on Covid and the weather, say fishermen, who go out to sea at this time of the year to bring in the silvery treasure. The Covid scare is keeping fishermen from going out to sea in large groups in trawlers. Usually, they go in groups of 19 people, who stay out in the mouth of the sea for a week and then come back with the catch, sometimes going beyond 14-15 quintals.

This year very few trawlers have left Kakdwip and Digha fishing centres, the two big hilsa hubs where the catch first arrives before being taken to the cold stores or markets. Fishermen, who go out in such large groups, make use of the trawls net and the gill net, which are hand-pulled and catch only hilsa. So, the market at the moment has become dependent only on the personal initiatives of fishermen's families, who go out in small boats early in the morning, fish throughout the day and come back by night. "Kukrahati to Raichak and Kolaghat are two stretches where such individual initiatives are high but the catch is not much. The problem is though the rule says that you have to use nets that have a minimum of 90 mm mesh so that the small fish or khoka (up to 600 grams) doesn't get caught, explained Suman Sahu, a key fisheries department official, who supervises hilsa fishing. Fisheries minister Chandranath Sinha, too, sounded worried.

"The Covid situation is so bad that we are insisting on social distancing everywhere and fishermen are not exempt, Sinha said.

### **West Bengal: Bengal: Tiger kills migrant worker turned fisherman in Sunderbans**

<https://www.indiablooms.com/news-details/N/63675/bengal-tiger-kills-migrant-worker-turned-fisherman-in-sunderbans.html>

"Many migrant workers, who lost their jobs amid lockdown, have turned to fishing to earn money, but owing to lack of survival skills in the dense mangrove forests they are becoming an easy pray for the tigers prowling the Sunderbans in the South 24 Parganas district. The novice fishermen are going to catch fish and crabs on boats in the rivers and creeks of the Sunderbans and have to give their lives. In another such incident, a fisherman, Sushanta Mandal (56), was killed in a tiger attack on Sunday morning. The incident took place near the Marichjhapi forest in the Sunderbans.

According to local sources, Sushanta went with three other villagers to catch fish and crabs. While they were fishing, a tiger suddenly came out of the jungle and pounced on Sushanta. Though his companions attacked the tiger with sticks to free him from the big cat's clutches, it managed to drag him away into the forest. Immediately, Sushanta's companions returned to the village and informed the villagers about the whole incident. They took a boat and went to the forest in the hopes of rescuing him. However, they spotted his headless body in the jungle and brought it back to their village. Later, the police sent the body for post-mortem. A pall of gloom has descended on the area due to this incident.

### **West Bengal: Flaws exposed in the Moyna aquaculture model**

<https://thefishsite.com/articles/flaws-exposed-in-the-moyna-aquaculture-model>

"Pradip Das is a fisherman from Moyna. The 50-year-old transformed his 150 acres of rice paddies into ponds for fish cultivation six years ago after hearing positive reports about the

Moyna production model, a system that was named after his village. He thought the switch would help him to increase his income and sustain his family but now says that the fish farming system has not been as effective as was projected by the local administration and state government.

“Fish farming used to be done in small water bodies along with the paddy cultivation in Moyna. But increasing losses in paddy due to floods every year forced farmers to switch over to fish farming, which was a more profitable affair, says Pradip. What is the Moyna model? The farmers living in Moyna have been combining fish farming with paddy cultivation for several decades. They utilised the small water bodies in the agricultural fields for growing indigenous species like tangra (black catfish), chital (clown knifefish) and tilapia. However, by the late 1990s they realised that fish farming brought them five times more profit than rice paddies. The farmers then began organised rice/fish cultivation, where some quantities of Indian major carp and exotic carp fingerlings were released, followed by the application of supplementary fish feeds, which started producing better results and more profits.

Slowly, large number of farmers began to switch over to fish farming and started digging out their paddy fields so they could hold more fish. The system soon spread to all 11 villages in the Moyna community block, covering an estimated area of 7,500 hectares under 200 farms locally called as “Khope, each ranging from 25 acres to 400 acres,. “The Khope are then leased by a novel system, by which the owners, around 50-60 agricultural farmers, form a committee and the water body is then leased to the highest bidder for three to five years. The water bodies are dried, ploughed with tractors and then lime is applied, says Abhishek Das, fishery extension officer for the Moyna development block.

“They are then filled with fresh water from a canal. Farmers then release 50g-100g fingerlings into the water at a density of 15,000-30,000 per hectare. The harvesting starts once the fish reach 500g, normally after three to four months. The fish are generally given organic feed such as rice bran. The farmers do not use many water conditioners or medicines. The buyers directly reach the village to buy fish, he explains. The Moyna model was typically adopted for water bodies of a minimum of 5 hectares and the river water was channelled into ponds for fish cultivation. West Bengal decides to implement the model in other districts early success in Moyna made the West Bengal government decided to roll out the model as the state's largest fisheries hub in 2017. The aim was not only to boost the aquaculture production sector but to also cut down the quantity of fish that Bengal imported from other states.

The government decided to bring water from the River Rupnarayan, which is located around 10km away from Moyna. According to state government officials, the 7,000 hectares under the system have the potential to produce 60,000 to 70,000 tonnes of fish annually if the farming is carried out year-round – rather than the seven to eight months it is currently restricted to, due to water issues. Describing the model as highly successful, the West Bengal government decided to

replicate the model in other districts, but due to the lack of such large expanses of water in other places they had to make do with smaller bodies – even 2 hectare water bodies were used.

Farmers express unhappiness with the administration despite the much-hyped Moyna model earning accolades from the government, many of those using it paint a different picture; farmers claim that administrative ignorance and unfulfilled promises are leading to them losing money. Over 150,000 farmers are involved in fishing in the Moyna block, spread across an area of 147km sq. The total area for fish production is around 7,000 hectares, while the remaining 500 hectares are used for prawn cultivation (fish cultivation is done in 4,465 ponds while prawn are cultivated in 929 ponds). The total fish production in the Moyna area stands at around 84,000 tonnes, the bulk of it taking place between April and October, with an average production of around 12 tonnes per hectare. Some of the fish species that are cultured here include bhetki/barramundi (*Lates calcarifer*), tilapia (*Oreochromis mossambica*), magur (*Clarias batrachus*) and Indian minor carp (*Labeo bata*). Farmers say that they are facing tough times, despite the government's praise for the Moyna model.

“The government had assured us a year-round supply of fresh water by pipeline from the River Rupnarayan. But the project is still to be implemented. As a result, fields close to the river get water while others face water shortages that prevent us from fish farming year-round, says Pradip, whose fields are located far from the river. Farmers have also complained about diseases in the water. “We face a severe shortage of water because of the lack of adequate water supply from the river, says Amit Pramanik, 42, a fish farmer in Moyna. “The same water where fingerlings are released is transferred to other ponds. It affects the quality of water, leading to the spread of severe diseases in fish.

I had to incur severe losses in the past two years because of the antibiotics in the water that killed huge amount of fish. We have now resorted to using organic feed like rice bran. No one from the administration has ever approached us to understand the situation. We are forced to fend for ourselves. Reduced quality Farmers complain that the use of chicken waste, coupled with the overexploitation of groundwater, has wreaked havoc with production. “Several farmers used chicken waste as food for the fish for several years, which reduced the quality of the fish taste. The fish no longer taste the same as before, says Sanjay Das, 27, a local fish farmer.

“The uncontrolled use of groundwater in farming and transportation of live fish has created severe water shortages. Fish were supplied to other parts of Bengal and even to the neighbouring states of Bihar and Jharkhand in packed containers with fresh water. But the depleting groundwater level has forced the government to put a ban on the use of submersible pumps for drawing groundwater, which has affected our business.

“We have been trying to create awareness of the use of organic feed supplement for fish farming, says Sk Najimuddin, development officer of Zelence, a startup selling organic fish feeds to the farmers, “but it is very difficult to convince the farmers because they have been using the

inorganic feed for a long time, as it is cheaper. But the excessive use of antibiotics and anti-parasite agents is not only harmful to the fish but also for human consumption. Apart from connecting Moyna with fresh river water, farmers demand that the government should set up a fully fledged laboratory and training centre for the fish farming community.

They are also pressing for a chilling plant for fish storage and making ice available for fish transportation, as well as the extension of bank credit on favourable terms. "The banks do not give loans to the farmers, as there are quite large number of defaulters. Besides, several youths have entered the trade which has led to an increase in competition. The marketing system needs an improvement for better connection between buyers and sellers, points out Tuhin Hait, 47, a fish farmer in Moyna. Conceding that farmers have been facing some issues, Das said their problems are being looked after by the government: "The water pipeline connection has been delayed due to the lockdown in the pandemic. It will resume soon. The farmers are being told to use organic feed for the fish but constant use of leather waste for the past several years has affected the fish quality and water. The use of groundwater has been stopped because of its severe shortage.

### **West Bengal: Fisherman Mauled To Death by Tiger in West Bengal**

<https://www.republicworld.com/india-news/accidents-and-disasters/fisherman-mauled-to-death-by-tiger-in-west-bengal.html>

"A fisherman was killed by a tiger in the Sunderbans in West Bengal's South 24 Parganas district, forest officials said on Saturday. Prafulla Sardar (45), a resident of Gopalganj in the Kultali area, went there along with two others to catch crabs on Friday, they said. The tiger pounced on him suddenly and dragged him into the jungle. The others fled the scene and when they returned along with more men, they found Sardar's half-eaten body. His head and a leg were missing when the villagers found the body, forest officials said.

### **West Bengal: Salt-tolerant rice, innovations help farmers deal with salinity in the Sundarbans**

<https://india.mongabay.com/2020/07/salt-tolerant-rice-innovations-help-farmers-deal-with-salinity-in-the-sundarbans/>

"A decade ago, Manirul Saha grew just one crop a year on his small farm in the Sundarbans, the sea-soaked land some hours south of Kolkata. The 40-something sowed rice before the summer monsoon and reaped the harvest at rains' end. A second crop was always unreliable: As the water evaporated in the post-monsoon months, more salt would rise to the surface of this coastal land, making the soil saline and retarding plant growth. Saha had to work as a day labourer to survive. Then, with the help of scientists at the Central Soil Salinity Research Institute (CSSRI), Saha adopted new farming techniques, including the use of improved salt-tolerant rice varieties and

water-saving techniques. That allowed him to expand to a second crop. “I hardly saved anything before, he said.

“Now I'm saving a lakh [rupees] a year. - Increasing salinity from rising sea levels, storm surges and declining river flow, threatens the livelihood of millions of paddy farmers in the Indian Sundarbans and other Asian deltas. - Scientists have been developing salt-tolerant rice strains to help farmers since excess salt can retard plant germination and growth. - Water harvesting and soil management are also needed to help farmers survive climatic and development pressures. Low-lying coastal regions like the Sundarbans, the mangrove-tipped edge of the Ganges-Brahmaputra delta that cradles eastern India and Bangladesh, are under threat from rising seas and more frequent storms, such as the cyclone Amphan that hit the region a few weeks ago.

But the climate danger is not just about sudden destruction or gradual submergence. Sea-level rise, storm surge, and coastal erosion also raise the risk of salinity ingress into wells, farms, and ecosystems. Excess salt can make water undrinkable, ruin soil, and hinder germination of seeds. Salinization of coastal lands threatens the livelihoods of millions of small paddy farmers that live in Asia's deltas. An estimated 16 to 20 million hectares of coastal land in South and Southeast Asia are already affected by salinity. In India, that figure is 3 million hectares, concentrated in the eastern states of Odisha and West Bengal. Research suggests that, for every unit of increase in salinity above a certain threshold, there is a 12 percent drop in rice yield.

The threat has pushed institutes like CSSRI to develop and disseminate new salt-tolerant rice varieties to help farmers over the recent years, along with improved farming techniques. The largest of these efforts is from the International Rice Research Institute (IRRI), which ran a project for Stress Tolerant Rice for Africa and South Asia from 2007-2019. According to Abdelbagi M Ismail, principal scientist at IRRI, the multinational effort improved research infrastructure, trained researchers, and helped get 1 million tons of stress-tolerant rice seeds for salinity, drought, and flood-produced and distributed to over 30 million farmers in Sub-Saharan Africa and South Asia.

“There is a need for new varieties that have higher tolerance than existing ones as the severity of the problem increases with time, he said. India's CSSRI, meanwhile, has developed 120 stress-tolerant rice varieties in the past decade, 40 of them with higher resistance to salinity. Some are suitable for the monsoon crop, others for the dry season, said Dhiman Burman, head of the CSSRI regional field station at Canning Town in the Sundarbans of West Bengal. There are also different kinds of salt-tolerant seeds for different types of land and rice consumption preferences. Seeds that are tolerant to multiple stressors—salinity as well as drought, for instance—are increasingly necessary, he said. “Salinity usually coexists with other challenges, agreed IRRI's Ismaili.

“The solution is to develop climate-resilient varieties that can withstand all these conditions, because it is not possible to predict what will happen in next season. But developing these seeds isn't easy. The process takes time and money. There are genomic boundaries to raising rice's tolerance to salinity though some researchers are cracking that with genetic modification. Getting them into a market dominated by commercial breeders is another hurdle. And there are limits to what technology can accomplish in landscapes shaped by complex human and natural pressures. “On the ground, there are many challenges, said Burman.

**Declining freshwater flow and salinity** Four million people live in the Indian Sundarbans, on land that lies just one to two metres above sea level. Farming has always been difficult here due to frequent flooding, paucity of freshwater and acidic soil. Most paddy farmers are small or marginal landholders; more than 40% of the population lives below the poverty line. Increasing salinity is adding to that challenge but is not only due to rising seas and storms. Upstream dams and other development pressures have drastically reduced freshwater flows in the rivers that braid the region. The pressures were evident on the road from Kolkata to Canning in February. Initially the landscape is dotted with large-scale brackish aquaculture farms that leak salt into surrounding fields and brick kilns that ruin the soil for agriculture.

Along the way are glimpses of the Matla River, which once carried water from the Ganges into the sea but is now largely fed by the monsoon and tides. Salinity in the Matla increased by around 32% between 1984 and 2013, according to one study. At Canning, the river is a brown ribbon of silt. The effects of rising salinity are already apparent in the ecosystem. Some mangrove species, including the ‘sundari’ that gave the area its name, are dwindling. The potential impact on farming was made clear in 2009 when Cyclone Aila hit the coast with a 4 metre storm surge. The inundation left an encrustation of salt on the land.

Thousands abandoned their fields and migrated to Kolkata and other cities for work. Even after ten years, the land has not fully recovered, said Sujit Mondal, a farmer in Rangabelia village on Gosaba Island. He still cannot grow chili, which was his most profitable crop before Aila. After Aila, local farmer-activists like Amales Misra in Sagar Island revived heirloom rice varieties that had been side-lined after the Green Revolution. These flourished in newly saline soil where commercial seeds failed. CSSRI also collected 63 traditional varieties, some of which they used to create new ones. Traditional varieties are hardy, said senior scientist SK Sarangi, but low in yield. And the grain shape and texture is often not what consumers want. The challenge for scientists like Sarangi is to create seeds that satisfy diverse requirements.

**Diverse requirements** On Gosaba, farmers say they prefer tall, long-duration rice for the monsoon when fields are submerged for four months. Yield and texture are less important because monsoon rice is for home consumption. But in the dry season, they want high-yielding salt-tolerant breeds that produce long fine grain that sells well on the market; a variety called Laliminikit is popular here. Soil and water conditions can be hyperlocal: Gosaba has enough

fresh water for farmers to sow a second rice crop; the neighbouring island of Bali does not. Finally, said Sarangi, these rice varieties can't require too much fertiliser or pesticides.

“The farmers can't afford to spend much, he said. For that reason, CSSRI and NGOs like the Tagore Society for Rural Development are promoting water harvesting, drip irrigation, soil management and crop diversity, alongside better seeds. In Rangbelia, Mondal has started growing grass pea, or laythra, along with rice in the dry season. He has a small pond to store water for irrigation and cultivate fresh-water fish that supplements his income. Dry straw mulching can be seen on some fields to protect soil moisture. CSSRI is also promoting ridge and furrow land-shaping techniques the furrows help with drainage and the less-saline ridges can be used to grow vegetables.

Better farming methods along with improved seeds can increase crop productivity by half a ton per hectare in this saline land, said CSSRI's Burman. At least for some farmers, that has been true. Panchanan Saha, a farmer near Canning, has seen his income almost double in recent years. He has expanded from one crop a year to three the last a harvest of beans, cucumber and bitter gourd. He used to go to Kolkata several months a year to supplement his income by working on construction sites. Now, he said, “I don't have to go to the city anymore.

### **West Bengal: Indian Coast Guard swings into action, rescues 15 fishermen from sea**

<https://www.timesnownews.com/india/article/indian-coast-guard-swings-into-action-rescues-15-fishermen-from-sea/620317>

"The Indian Coast Guard rescued 15 fishermen on Saturday night in a swift operation in rough sea conditions. 15 Indian fishermen onboard a fishing boat named Krishna Kanaiya were stranded in Kakdwip in West Bengal. Indian Coast Guard ship Vijaya picked up a distress call from the Krishna Kanaiya while it was on operational duty. Realising the gravity of the situation and given the adverse sea condition, the Indian Coast Guard vessel immediately re-navigated its course for undertaking the rescue operation. - 15 stranded fishermen rescued by the Indian Coast Guard late on Saturday night - The propeller of the fishing boat had broken due to the rough sea condition - Indian Coast Guard ensures safe return of the fishermen to Kakdwip in West Bengal Taking into account the direction of the wind and sea condition, the operation was conducted swiftly under the command of DIG Vijay Singh on locating the distressed fishing boat.

Even a slight delay in locating the boat could have been catastrophic as the boat could have drifted into foreign waters and been grounded or could have broken down given the rough sea condition. The captain of the fishing boat informed that the boat had lost its propellers in the rough sea and had drifted about 15 nautical miles in the last 24 hours due to the strong gusty wind. With no help at sight, the fishermen were exhausted and were unable to steer the fishing boat. The Indian Coast Guard swung into action to rescue the fishing in challenging sea conditions. The Coast Guard Ship- Vijaya showed grit in towing the crippled fishing boat to a safe location near the coast of West Bengal. The Coast Guard station at Frazergunj also informed the fishing boat owner who arranged for two boats to receive the fishermen at sea from the Indian Coast Guard ship. Today at around 8:15 am, the rescued crew was safely handed over to other boats arranged by the Fisheries Association for their return to Kakdwip.

### **West Bengal: South 24-Parganas and East Midnapore fishermen stare at losses**

<https://www.telegraphindia.com/west-bengal/weather-tweak-makes-hilsa-scarce-in-bengal/cid/1786189>

"Bengal's quintessential monsoon romance with the hilsa is in for a rude shock this year. Shoals of hilsa have dwindled sharply, fishermen in coastal South 24-Parganas and East Midnapore aver. Their estimated catch since nearly a month of active fishing is a fraction of the average 40,000 tonne annual haul. Hilsa yield in Bengal starting June 15 when fishing officially resumed has been less than 50 tonne. Usually, it is over 400 tonne in the same time. The numbers are a shock to fishermen and traders associations who had anticipated a higher yield this year owing to calmer waters in the coronavirus-induced lockdown. "We had thought that the lockdown's lack of industrial activity would induce higher numbers of hilsa to flock to shallow waters, but it turns out there has been a significant shift in the monsoon pattern this year that drastically affected the catch, said South 24-Parganas assistant director of fisheries (marine) Jayanta Pradhan.

"Seasonal wind this year has been west-bound rather than the traditional east-bound and light drizzles are largely missing. We don't know if this is because of Amphan. But this weather change is affecting hilsa yield, he added. Association sources added that owners of over 3,000 trawlers 2,800 in South 24-Parganas and 200 in East Midnapore halted fishing expeditions in disappointment. "Our average hilsa yield during a week-long fishing expedition is between 500kg to 1 tonne. This time we barely made 40kg and so decided to discontinue, said fisherman Sujit Kar, adding that maintenance and operational costs overtook profit. "A yield of about 500kg per expedition is our minimum just to break even, he added. The highest revenue that fishermen like Kar made over the past month was Rs 40,000. Usually, it is Rs 1.2 lakh. Fishermen association sources in Digha said the development was especially taxing in the wake of months of lockdown-induced uncertainty.

“This is the latest blow amid the raging pandemic. We don't know why the weather changed this year, but it is affecting hilsa yield and thousands of fishermen adversely, said Digha-Sankarpur fish traders' association secretary Shyamsundar Das. Das explained that while trawlers had without exception returned to harbour, motorised boat operators were still going to the seas in the hope of making a catch. Kakdwip fishermen's welfare association secretary Bijon Maity said this was the worst season they have had in a long time. “We are also unable to get into deeper waters now because of the unusual wave patterns. But still we do what we can as fishing is a question of survival for many, he said.

### **West Bengal: Digha catch may reduce hilsa price**

<https://timesofindia.indiatimes.com/city/kolkata/digha-catch-may-reduce-hilsa-price/articleshow/76842969.cms>

"A week ago, hilsa from Diamond Harbour had hit city markets. On Tuesday, the first catch of hilsa reached the Digha Mohona wholesale fish market with the offloading of two tons of Bengalis' favourite fish from fishing trawlers that docked at the Digha coast in the morning. Over the last one week, the price of hilsa in the city markets like Gariahat and Manicktala has been steep. Consumers have been shelling out Rs 850 a kg for hilsa weighing 500-700 grams. The price of hilsa weighing 700-800 grams is Rs 1,000 and Rs 1,500 for hilsa weighing 1kg to 1,200 grams. So far, the catch from Diamond Harbour has yielded only a small quantity of hilsa in the 700-800gram weight category and an even smaller amount in the 1kg to 1,200 gram category.

“Bad weather is coming in the way of supply of hilsa in city markets, said Amar Das, a fish trader and fish market secretary of Lake market. “The price of hilsa is too high and the size of the fish on sale is also very small, said Sampriti Sarkar, a buyer at Gariahat market. All this may soon change. “The average size of the 2-ton catch that arrived on Tuesday, weighs between 800 grams and 1 kg, said Shyam Sundar Das, Digha Sankarpur Fishermen and Fish Traders' Association secretary. Those in the trade are now hoping that the increased supply would pill down the price.

### **West Bengal: Export of seafood gains momentum**

<http://www.millenniumpost.in/kolkata/export-of-seafood-gains-momentum-412049>

"Seafood export from the state including prawn that resumed from the middle of April is gaining momentum with the export in June being a little higher in comparison to the corresponding month in 2019. Bengal accounts for 12 per cent of fish export from India and the turnover from marine product export from the state in 2019-20 was over Rs 5,300 crore with 1.25 metric tonne of fishes being exported. Among the seafood exported from the state, more than 70 per cent are prawn varieties.

""The lockdown did not have much effect on sea food export from Bengal as restrictions in export of fish was lifted in the middle of April and soon all the 52 processing centres spanned across North and South 24 -Parganas, East Midnapore and Howrah started functioning adhering to the health protocol,"" said a senior official associated with seafish export from Bengal. Bengal saw 8 per cent growth in sea food export in 2018-19 compared to the previous fiscal. Fishes are mainly exported to the European countries and some quantity in Japan and China too. Among the prawn varieties – shrimp accounts for 70 per cent export while the other fishes that are exported are other prawn varieties, pomfret, octopus and some other sea fishes. ""Majority of the export from Bengal takes place through waterways and only a little export to Bangladesh happens through road,"" said Archiman Lahiri, Deputy Director Marine Products Export Development Authority (MPEDA), which regulates export of marine products in the country. Around 80 to 85 per cent of prawn cultivated in the state is exported and only 15 per cent is used for domestic customers.

The International Seafood Processing Centre at Chakgaria in South 24-Parganas that has 10 processing units with modern facilities like quality control, water treatment plant, laboratory, cold storage, ice plant, affluent treatment plant has also started full fledged operation from the unlock period. Interestingly the employment generated by this seafood processing centre is nearly 15,000. The brackish water prawn cultivation has been badly hit by the devastating cyclone Amphan that hit the state on May 20. Heavy rainfall that lashed the state on the fateful day contributed to saline water getting mixed with sweet water and vice versa. ""We have identified the waterbodies where the water had become unsafe for pisciculture. Potassium permanganate and quicklime is being used for purification of water so that cultivation can start afresh,"" said an official of the state Fisheries department.

### **West Bengal: Stop fleecing small scale fishers: provide duty free fuel for small fishing boats**

""The price of Diesel, Petrol and Kerosene has skyrocketed in the past three months. While the price of Diesel and Petrol per litre has either crossed or about to cross Rs. 80, the price of non-PDS Kerosene has attained a high of more than Rs. 70 per litre. The small scale fishers who, with their motorised non-mechanical boats venture into the sea, rivers and other water bodies to fish for livelihood, are facing dire problems due to the abrupt increase in the cost of fuel. The poor fishers deserve due sympathy and humanly dealing from the Government. The situation demands immediate relief. The small scale fishers must be provided with duty free fuel. Diesel and Petrol used as fuel for motorised non-mechanical small fishing boats should have no Exide Duty or VAT and Kerosene used as fuel for motorised non-mechanical small fishing boats should be supplied at PDS rate.

The fuel subsidy for fishing boats should be provided exclusively as livelihood support for small scale fishing in marine or inland fisheries adhering to strict 'Sustainability Criteria'. Fuel subsidy should not be provided to larger fishing boats that fish mainly for commercial purpose and cause

overfishing and destructive fishing through their large capacities and aggressive gears. As such to maintain sustainability criteria, only motorised non-mechanical fishing boats [as indicated by Merchant Shipping (Registration of Indian Fishing Boats) Rules, 1988 under the Merchant Shipping Act, 1958] should be provided with fuel subsidy in the Marine Sector. In the Inland Sector there may not be any differentiation for fuel subsidy as only small motorised non-mechanical boats operate. The fishermen's cooperative societies may be entrusted with the responsibility to distribute subsidised fuel to the small scale fishers. National Platform for Small Scale Fish Workers have written to the Prime Minister as well as MIC Finance; MIC Petroleum & Natural Gas alongwith MIC & MoS Fisheries, Animal Husbandry and Dairying to take immediate steps for supply of duty free fuel to small scale fishers.

### **West Bengal: Pricey diesel extends Bengal's wait for Hilsa**

<https://www.thestatesman.com/bengal/pricey-diesel-extends-bengals-wait-hilsa-1502904391.html>

"With regular hike in diesel prices during the past three weeks and economic uncertainty caused by Covid-19 pandemic have badly hit fishermen to ply trawlers to catch Bengali's most coveted Hilsa fish in the sea. Aggrieved with the dual crisis most of the fishermen at Kakdwip, Namkhana, Raidighi, Frezerganj and Diamond Harbour in South 24-Parganas are sitting idle along with their thousands of unused trawlers at this time of high season for catching Hilsa. And this has kept the Bengali fish lovers away from the Hilsa that costs minimum Rs 1,000 per kg. On 14 June, around 3000 fishermen of Sundarvans area along with their trawlers had gone to deep sea to catch fish but most of them had come back because of the inclement weather. "They fishermen got frustrated and came back with small quantity of Hilsa. Each trawler carries around 15 fishermen and it costs around two and a half lakh rupees for a week-long trip to the sea. The charge includes costs of diesel, meals for the fishermen and huge quantity of ice required to preserve the hilsa, said an owner of a trawler at Kakdwip.

"Diesel price hike has aggravated the situation. Most of the trawlers are lying used and trawler owners are unwilling to operate their vehicle in the deep sea because of nonavailability of Hilsa from Bangladesh and Myanmar respectively. This year, it was a congenial environment for breeding of huge quantity of Hilsa because of low pollution in sea water, said some members of West Bengal Fisherman Association. "Economic uncertainty caused by Covid-19 pandemic and regular fuel price increase have made the situation worse this year affecting all fishermen, traders and Hilsa lovers in our state. Cash-strapped won't like to buy Myanmar Hilsa coughing up around Rs 1000 to Rs 1200 per kg in the market at this time economic crisis, said Syed Anawar Maqsood, secretary at West Bengal Fish Importers Association. "About one month ago, 1,000 tonnes of Hilsa imported from Myanmar, were lying at the wholesale markets and it had taken more than two weeks to sell to consumers, he added. "We had placed the orders for hilsa before the lockdown. There are no buyers because nobody is ready to pay the price for Hilsa. People are

preferring fishes that are low priced. They are not keen to spend more, he said. While Hilsa is not finding its place on the platter of the fish lovers, a new variety of fish ~ white dotted gizzard ~ is being imported from Middle East countries ~ Oman and UAE ~ to cater to fish eaters.

### **West Bengal: After Amphan and coronavirus lockdown, residents of Sundarbans struggle for a livelihood**

<https://caravanmagazine.in/environment/with-scarce-government-relief-residents-of-sundarbans-pin-hopes-on-monsoon-for-a-living>

"My son and I were home the morning when Amphan arrived gushing torrents of rain followed by gusts of winds, Bhaba Shankar Patra, an elderly resident of G-Plotan island in the Patharpratima block of the Sundarbans said on 7 June. Bhaba was recounting the events of 20 May, when Cyclone Amphan swept West Bengal and ravaged the deltaic mangrove forest region of Sundarbans. "We were perched atop our hut, trying to save the roof. But we couldn't withstand the storm's fury for more than two hours.

As our tiles and walls were swept away by the winds, we saw sheets of asbestos flying in the distance, like birds, he said. The family sought refuge at a neighbour's pucca house, made of permanent materials. "We lost everything we had, Bhaba said. "Everything, except what we are wearing, he added, while gesturing to the clothes a lungi and a gamcha, a bath towel he was wearing and the sari that his wife Kajal Patra, who was standing next to him, had draped. Kajal listed all that they had lost to the cyclone. A crop of ripened paddy on their small farm, on whose seeds they had spent Rs 2,100, and from which they could have earned enough to feed the family for a good three months. Their hut, on whose reconstruction they had spent Rs 60,000 a couple of years after it was damaged by Cyclone Aila in 2009. Their cowshed, re-constructed only last year after it was damaged by Cyclone Bulbul in 2017. Their sole cow, which was in the shed, and was crushed under the weight of the cowshed when it was pulled down by the torrential winds. Vegetables in their kitchen garden, which would have been sufficient for them and a few other families for almost a month. And all their belongings, including a bed and a couple of steel trunks that were battered by collapsing walls, under a caved-in roof.

The Patras were among several residents in the Amphan-hit areas of Sundarbans who told me how they had lost their livelihoods to the cyclone when I travelled through the South 24 Parganas and North 24 Parganas districts between 30 May and 9 June. Residents said that they did not expect much assistance from the government as it had not even carried out a comprehensive assessment of their losses to provide them with compensation. Many of them had pinned their hopes on the upcoming monsoon season, which would bring in some income from agricultural activities. It seemed that the residents of Sundarbans were faced with the challenge of rebuilding their lives, amid the novel coronavirus pandemic, almost completely by themselves. Seventeen days after the cyclone hit G-Plot, its residents were busy taking their first gingerly steps towards recovery. That evening, in the island's Krishnadaspur area, I saw several residents, including

women and children, work to rebuild their homesteadsfixing tarpaulin sheets or clay tiles on broken roofs, repairing damaged mud walls, pumping out rotting, brackish water from ponds and farms that were lush with produce before Amphan struck.

Others were ploughing fields from where the seawater had evaporated, preparing for the monsoon. Several residents were milling about on narrow, muddy pathways, fetching water from those tube wells that were still gurgling out sweet water, some buying fish seeds to sow in ponds purified hurriedly with bleaching powder, lime and potash only a day or two earlier. A few men were repairing a part of a mud embankment, located along the periphery of G-Plot, which had been washed away by the surging tides that had accompanied the cyclone. A stretch of the embankment, about nine hundred metres next to the broken section, was reinforced with bricks and concrete and topped with a wide road. As it had been constructed after Cyclone Aila, it was locally known as “Aila bandh. Many villagers were walking or sitting along its length, mired in discussions or staring into the horizon, whereas groups of fishermen were repairing their nets and other equipment, preparing for their first voyage into the deep seas after a two-and-a-half-month hiatus on account of the nationwide lockdown to contain the novel coronavirus.

When I asked people on the Aila bandh what they had lost to the cyclone or how much it was worth, most responded with a blank expression, followed by vivid accounts of how the cyclone pummelled away at everything in its path for close to twelve hours. They spoke of how the winds brought in swirls of salty seawater deep into the island, inundating large swathes, flattening or washing away homes, roads, electricity poles and high-tension towers, betel vines, and acres and acres of paddy and vegetables awaiting harvest once the lockdown was relaxed. Only some gave specific details about the losses they had personally endured. Like the Patras, Subhash Shitt, a fish farmer, said he had lost means to sustain himself due to the cyclone. “Seawater rose above the embankment and swept into my pond and all the Rohu, Katla and Sol fish in it died within two–three days, he said, before adding that he had to throw away five crates full of fish. The cyclone had damaged the roof and walls of Shitt's house, which was located along the embankment. When I spoke to him, he was reinforcing the periphery of a small pond adjacent to his house, which was flooded with rotting water. He estimated that it would cost him Rs 3,000 to pump out this water from the pond, an amount that he could ill afford. He said he hoped that the monsoon would herald better times. “At least, we can grow and eat some vegetables. All we eat now is rice and mashed potato, he said.

Many other farms and freshwater ponds across Patharpratima were still inundated with brackish water. Owners of five such ponds and farms said they did not have the means to pump out the waterlike in other blocks I travelled to, electricity was yet to be restored, and they could not afford diesel-run pumps, running which cost Rs 50 per hour. They said it would cost them between Rs 2,000 and Rs 3,000 to clear out saltwater from their farms and ponds. They hoped that it would fill up with monsoon rains in the coming days, and gradually, begin producing crops and fish, providing families with much-needed sources of livelihood. Among them was

Tapas Tikadar, a man in his mid-thirties from Krishnadaspur. “It's impossible for us to arrange this amount under lockdown when no work is available, he said. The cyclone had wrecked the mud walls and asbestos roof of his hut.

When I met him, his family of four was living under a sheet of tarpaulin strung over the rickety frame of the roof, along one of the partially-damaged walls. Tikadar told me his family was surviving by doing odd jobs for richer villagers who lived in pucca houses. “We clear the debris off their compounds, clean up salinated ponds, re-construct broken sections of their houses. In return they give us food, and only sometimes, a little money, he said. Due to low demand and restrictions on movement, people are not able to sell produce that they held on to during the lockdown. Rabindranath Das, a rice trader from G-Plot Island, said he had been unable to buy paddy from his regular farmers as all rice mills in the area, where he used to sell the produce, were shut. “Even though many of them managed to save their stocks from the cyclone and are keen to sell it as the lockdown is being relaxed, I can't buy it from them, as rice mills are unlikely to start operating anytime soon. Besides, there is an acute shortage of transport options, he told me, over a choppy mobile connection on 13 June.

Tarak Sardar, a tourist guide and resident of Basanti block in South 24-Parganas, told me that residents were looking at a grim future and struggling to find employment. “A large number of people here have small businesses in Kolkata, or work in shops and homes there. They have been unable to travel to the city or find work during the lockdown, Sardar said. “Those who work on other's farms in the islands are also in bad shape, as those residents who own land and have money around ten out of every hundred people on an average are not employing locals for fear of contracting the virus. Then there are shopkeepers, vehicle and boat owners, drivers, hotel staff and guides like me who are completely dependent on tourism for our livelihood. Although tourists were allowed to visit our area two days ago, none have turned [up] till now, Sardar told me on 20 June.

G-Plot was among the two islands I visited which does not feature in the government's list of inhabited islands in the Indian Sundarbans. The other island, Sulkuni, located in the North 24 Parganas district's Minakhan block, had also been severely hit by Amphan. Amphan had washed away about five hundred metres of an embankment along the Dansa river in the Purba Para area of northern Sulkuni and submerged several neighbourhoods of the island. Its residents had sought refuge in tents pitched on pucca roads around flooded areas. Initially, the residents said, they used strips of tarpaulin that they had managed to salvage from inundated homes to make the tents. Later, the local panchayat provided them with some sheets of tarpaulin. Around sixty–seventy families were crammed into a long line of tents pitched on one side of the broken section of the embankment. Most of them subsisted on farming and fishing in small freshwater ponds in the village in pre-Amphan times. Salty seawater had damaged their crops and killed all the fish in their ponds.

When I met them on 3 June, most were either making or repairing nets and baskets that they could use to catch fish. Several villagers said they were still counting their losses at the time. Among them was Manas Mondal, who owned a houseboat which used to be hired by tourists for cruises on rivers and tidal channels. The storm had ripped apart the upper deck of his houseboat. His family was living in its lower deck, which was still intact. Mondal said he had invested Rs 12 lakh on getting it made five years ago, and reckoned it would cost him Rs 5 lakh to repair the boat and get it up and running. Even then, he did not know if tourists would come “because of the fear of corona.

The residents were livid with the slow pace of repair work on the broken embankment and feared more water would gush in from the sea through the breach during the subsequent full moon and new moon nights. “Our houses and farms are under knee-deep water. Yet, not a single panchayat member or political leader has come to us or conducted a survey to assess what we are losing, Bharat Sau, a middle-aged farmer, said. Some residents of the island told me that they did not expect any government relief to reach them, echoing the concerns expressed by people in the Patharpratima and Kakdwip blocks of South 24 Parganas.

A few residents said that political affiliations determined who received relief. A government school teacher in the Patharpratima block, who did not wish to be named, said that an all-party committee had toured all panchayats in the area on foot after Cyclone Aila, assessing losses and fixing compensation amounts. “This time, only those willing to sign up for the ruling party the All India Trinamool Congress “are receiving relief materials and compensation, he said. “There is no transparency, no effort whatsoever to conduct a survey. I spoke to Samir Kumar Jana, the member of legislative assembly representing the Patharpratima Vidhan Sabha constituency, about these allegations. “There are 281 booths, 15 gram panchayats, 45 panchayat samiti and two zilla parishad seats in my constituency. Gathering accurate information about damage due to a cyclone over such an expansive, densely populated area is a very difficult task, he said. Jana denied that party affiliations were a consideration while giving relief.

“Since we're used to facing cyclones, we have a system in place to gather data. It is not perfect, but it has helped us arrive at a fair estimate of damages due to Amphan. We are using that to provide relief to everyone, irrespective of their party affiliation. We are also probing allegations of corruption, and in 60 percent cases, we find that they are arising out of situations where we have provided relief to the father but not to the son, or to one brother but not another. Jana said the government was also trying to ensure equity in relief disbursal. “We are trying to provide relief first to those whose betel plantations or farms suffered extensive damage after Bulbul, but were not provided any compensation then. After Bulbul, we identified around 36,000 families whose houses were damaged by the cyclone, and the process to provide them with financial assistance under central and state schemes was underway when Amphan struck. We are not selecting such families for the compensation for damaged houses that we are providing now, even if their houses are damaged, as our resources are very limited, he said.

But the lack of faith in elected representatives echoed through the Sunderbans. In all the affected blocks, local government bodies were struggling to respond to the crisis and reach relief to people in interior areas. Local leaders and elected panchayat members were only visiting sites where repair work, mostly on broken embankments, was underway. I saw trucks carrying asbestos and tarpaulin but this seemed inadequate compared to the scale of destruction. According to multiple accounts, immediate relief following Amphan from government departments was patchy at best. Civil society groups, NGOs and individuals pitched in with urgently needed supplies, including dry ration, tarpaulin sheets, mosquito nets, torchlights, sanitary pads and clothes, despite a severe strain on their resources.

The residents stressed the damage wrought by Amphan was higher, more intense and more long-term than that inflicted by Aila. They said that as it rained heavily for several days before the arrival of Aila, their fields were already inundated with fresh water from the rain. The seawater that flooded their farms during the cyclone did not cause much damage, apart from destroying standing crops. It rained heavily for a few days after Aila passed as well, they said, but there were no rains before or after Amphan to save their crops. Most residents I met said that their livelihoods were likely to be severely threatened owing to the combined effect of the Amphan and the pandemic. The possibility of finding well-paying work in big cities and industrial clusters seemed virtually absent. During my trip, I overheard a group of people at a tea stall in G-Plot discuss that the migrants who were returning to the island might also not be able to go back to work in big cities due to the pandemic.

According to a strategy report on Building Resilience for Sustainable Development of the Sundarbans, published by the World Bank in 2014, more than seventy percent families in Sundarbans were engaged in agriculture in the monsoon months, between mid-May and mid-September. Non-agricultural labour and trading, including in milk and dairy products, occupied a higher share during the rest of the year, the report stated. Residents I spoke to during my reporting feared they would not be able to farm or fish in flooded plots and ponds for the next onethree years. The sluggish pace at which the islands seem to be recovering indicates their apprehensions are well-founded. After my return from the Sundarbans between 9 June and 18 June villagers and representatives of relief groups, like Amphan Relief Network and Bengal Relief Collective, told me that large patches of land were still inundated with brackish water.

Embankments remained under repair in several places, allowing more seawater to gush into low-lying areas through breaches. Ferry services and movement of vehicles were still irregular due to the pandemic and often halted for hours or days in the wake of unconfirmed reports of coronavirus positive cases in the vicinity. Opportunities for daily-wage work were largely absent, barring the odd order for repair of ponds and roads issued under the Mahatma Gandhi National Rural Employment Guarantee Act. Markets and procurement channels were barely functional, and farmers were delaying sowing even seasonal vegetables, fearing they will not be able to sell their produce.

“The micro-economy of Sundarbans has been completely destroyed first by the lockdown, which brought thousands of migrant workers back to the islands, then Amphan, Avik Saha from Swaraj India, a political party, who is engaged in carrying out relief work in the Sundarbans, said. “This will create massive pressure on land and other natural resources in the area over the next six months. There will be intense competition, and a poor versus poor battle. He added, “The impact of this over the long term may be worse than we can imagine. Sardar, too, had said that the local economy has been destroyed. On 17 June, he called me to ask if some relief could be arranged for people in his area. Three days later, when we spoke again, he said, “Most people don't have any income, so there is no expense on anything, he said. “Things look extremely bad for the next few months.

### **West Bengal: Fisherman dragged away by crocodile**

<https://www.theweek.in/wire-updates/national/2020/06/24/erg2-wb-fisherman.html>

"A fisherman was dragged away by a crocodile into a river in West Bengal's South 24 Parganas district on Wednesday, police said. The incident happened in Patharpratima area around 6.30 am when Bishnupada Santra (68) was fishing at Gobdia river, a police officer said. Officials of Patharpratima police station started a search operation but the fisherman could not be traced, he said.

### **West Bengal: 3 fishermen held for illegally fishing in Sundarbans**

<https://unb.com.bd/category/Bangladesh/3-fishermen-held-for-illegally-fishing-in-sundarbans/53417>

"Forest department officials detained three fishermen from the Sundarbans in Harbaria area of Mongla upazila for catching fish illegally from a canal using insecticides on Saturday night. The arrestees are Belal Hossain, 25, son of Ishak Hawlader of Joymonirghol village, Kamrul Islam, 32, son of Kashem Fakir, resident of Sundartola village of Mongla upazila and Israfil, 30, son of Ruhul Amin, resident of Paschim Dangmari village of Dakope upazila. Mohammad Belayet Hossain, divisional forest officer (DFO) of Sundarban East Department, said on information that a group of fisherman entered the Sundarbans illegally for catching fish they conducted a drive in the area. Later, they arrested the fishermen while they were taking preparation for catching fish. They also seized six bottles of insecticides, seven nets and a trawler from their possession. A case was filed against the trio in this connection.

### **West Bengal: 3,000 trawlers are returning to shore from the sea due to weather changes**

<http://www.uniindia.com/3-000-trawlers-are-returning-to-shore-from-the-sea-due-to-weather-changes/east/news/2042316.html>

"As the weather changed, all the trawlers began to return to the coast from the deep sea. About 3,000 trawlers from the South 24 Parganas district have set sail for the deep sea since June 15 this year after the 82 days lockdown and government ban. But due to the stormy winds and waves, the trawlers are being forced to return to the coast from the deep sea. Currently all the trawlers are stationed on Kendodwip, Bagherchar and Chaimaridwip. Satinath Patra, secretary of the Sundarbans Samudrik Fishermen's labour Union, said, ""There is no warning of bad weather at the moment. But due to the rough seas, all the trawlers have started returning to the coast. Until the weather changes, trawlers will be on the coast for the next few days. "" However, the fishermen are worried about such incidents at the beginning of the season.

### **West Bengal: Fish wholesale market in Siliguri shut for 7 days as COVID-19 cases spike**

<https://www.indiatvnews.com/news/india/siliguri-fish-market-shut-for-7-days-coronavirus-covid-19-cases-625538>

"In view of COVID-19 positive cases linked to the Siliguri Regulated Market, the Darjeeling district magistrate has ordered to shut down the fish wholesale market here for the next seven days. ""Because of the coronavirus, the fish market here has been sealed for one week. We are facing problems that the stocks may get decayed in one week,"" Deep Nayan Mahato, a fish seller said. ""Fish from here is transported to far-flung places like Patna, Guwahati, Madhya Pradesh etc,"" he added. The Regulated Market is one of the biggest perishable goods market of North-east India situated in Siliguri.

### **West Bengal: With cleaner rivers after lockdown, Bengal expects big Hilsa harvest**

<https://www.hindustantimes.com/india-news/with-cleaner-rivers-after-lockdown-bengal-expects-big-hilsa-harvest/story-oLX7JuorYlqSto6hIgrzfI.html>

"The 84-day lockdown may prove to be a boon for millions of fish-loving Bengalis, who eagerly wait for this time of the year for the queen of fish - the Hilsa - to arrive from the sea. Experts said that as pollution in the river Ganga and its tributaries is less this year because of the lockdown, it could attract schools of Hilsa to migrate upstream to breed. "This year we are expecting a good catch. All the industries were shut because of the lockdown and pollution is down in the River Hooghly. This could attract schools of Hilsa. Also the rains and other conditions have been favourable, said a senior official of the state fishery department.

HT had earlier reported that for the first time in many years, several stretches of the Ganga including Kolkata were conforming to Central Pollution Control Board's (CPCB) standards for the quality of river waters. The biological oxygen demand was less than 3 mg/l, dissolved oxygen was more than 4 mg/l and ph 6 to 9. The biological oxygen demand is the oxygen needed by the river to sustain life. The Hilsa, which usually spend their lives in the sea, migrate into the rivers to breed during this time of the year. If they don't find good waters in the Hooghly (a

tributary of the Ganga) they head for the rivers in Bangladesh skipping Bengal. In 2012 Bangladesh had imposed a ban on export of Hilsa to India. The ban was lifted in 2019.

“Cyclone Amphan, which has left the state devastated, may also boost the Hilsa harvest. Cyclonic storms churn up minerals from the sea bed which would help in plankton production. Plankton being a fish food helps in attracting more fish, said Utpal Bhowmik, a hisla expert and the former head of the riverine fishery division at Central Inland Fishery Research Institute. Every year major fishing activities remain suspended between April 15 and June 14 to protect the fishery resources and biodiversity during the breeding season. This year the ban was from March 25 when the countrywide lockdown was announced.

“The extended fishing ban because of the lockdown will surely boost fish production. The fishermen are all ready to venture into the sea within a day or two. The ban has been lifted but the sea is rough because of bad weather. We are just waiting for the weather to clear, said Abdar Mallik, secretary of Sagar Marine Matsya Khuti Cooperative Society, a fishermen forum in south Bengal. But there is an irony. Fishermen in the coastal districts of the Bengal pointed out that even though they are expecting a bounty this time because of the lockdown, cleaner water and good rains, cyclone Amphan has left them devastated. “Thousands of fishing boats have been damaged in the storm. We know there is a bounty out there in the sea but there are not enough boats to venture out. Many people have lost their boats, said Pradip Chatterjee, convener of National platform for small scale fish workers. More than 8,000 fishing boats have been damaged in the cyclone of May 20, while 37,711 fishing nets have been damaged, according to government estimates. The administration is providing Rs 2,600 to the affected fishermen for damaged nets and Rs 5,000 who have lost their boats.

**West Bengal; COVID-19 pulls fishermen back to Bengal, Amphan forces them to reconsider**

<https://www.downtoearth.org.in/news/natural-disasters/covid-19-pulls-fishermen-back-to-bengal-amphan-forces-them-to-reconsider-71751>

"If the lockdown to curb the spread of the novel coronavirus disease (COVID-19) forced migrant fishermen to come back to West Bengal from coastal states, the impact from cyclone Amphan is forcing them to reconsider their decisions. Close to 60 per cent of the nearly 40,000 migrant fishermen have either just returned to West Bengal or are in the process of returning. Many, however, have begun to weigh options to go back to the fishing harbours in other states. Amphan has not just shrunk their employment opportunities in Bengal, but has also forced them to look for urgent money to help rebuild their damaged homes.

A large proportion of the migrant fishermen live within Kakdwip and adjoining Namkhana blocks the areas affected the most in the Sundarbans, as cyclone Amphan had landfall close to the area. Of the 2.4 million fishermen in West Bengal, two million work inlands in rivers and

wetlands, while 400,000 are involved in trawler-driven marine fishery. Fishermen primarily migrate to western coastal states like Karnataka, Kerala and Maharashtra and Tamil Nadu on the east, as the fish catch dwindled in Bengal, according to specialists in the fisheries sector. Fishermen stuck in coastal states and a few other western states wanted to come back after the lockdown was extended, as their income dried up, Pradip Chatterjee, convenor of the National Platform for Small Scale Fish Workers told Down To Earth. “We took up the issue with the respective governments, including West Bengal.

They finally started to return through trains and buses, he said. Chatterjee alleged the migrant fishermen are yet to get privileges mandated by the International Labour Organization (ILO). The impact from cyclone Amphan did force fishermen into thinking of going back to the states they were working in, according to Chatterjee. “Most people had migrated because they did not get much work due to comparatively less fish catch for several reasons. Amphan has made their lives tougher, he said. The fishing season continues for 10 months in coasts across the country, barring mid-April to mid-June in the east coast and June and July in the west coast to allow uninterrupted breeding among fishes. In 2020, the ban was reduced by 15 days to accommodate losses accumulated during the lockdown period.

“Amphan happened when many returned after several arguments with boat owners who were not keen to let them come back, said Milan Das, general secretary of the Dakshinbanga Motsojyibi Samity, a fishermen's collective. “Amphan, however, changed the equation overnight and a few actually started to ask about the possibilities of returning even before reaching home, he added. Gopal Das, a fisherman from Kakdwip, said he was ready to go back to Kerala before the next fishing season from August 1. “I have more or less finalised my return with my boat owner and captain, said Das, who needs money to repair his damaged house. Other fishermen, like Mithun Das and Ripon Das, are eager to go back, as the fish catch is much more in southern states, according to them. The return of migrant fishermen is also important for fishing boat owners in most southern states, as there has been a shortage of workers.

Nearly 100,000 migrant workers work in Karnataka, Kerala and Tamil Nadu are mostly from Andhra Pradesh, followed by West Bengal. Fishermen from Bengal are involved in ancillary work as well. Milan Das said most fishermen in southern states earn through profit-sharing of their fish catch with boat owners and other crew, who are around nine in every boat. The share for fishermen comes to not less than Rs 15,000 per month on average. “We can send at least Rs 10,000 per month back home, which has improved our families' standard of living, said one fisherman. Not all fishermen, however, want to go back. “I have decided to work in my state and will not go back after all that has happened, said Abhiram Das, who claimed to have been beaten up in Kerala while leading a protest demanding arrangements for coming back to Bengal during the lockdown. Such fishermen, however, are exceptions rather than the rule.

## **West Bengal: Amphan damper for hilsa-bounty hope**

<https://www.telegraphindia.com/states/west-bengal/cyclone-amphan-damper-for-hilsa-bounty-hope/cid/1781201>

"Rized delicacy hilsa is likely to be in short supply this year, dashing the hopes of a better catch in cleaner rivers because of the lockdown. Hilsa fishing formally resumed on Monday here after the annual two-month ban from mid-April to promote breeding but only around 15 per cent of the trawlers could hit the sea. Most trawlers of East Midnapore and South 24-Parganas fishermen are damaged by cyclone Amphan that hit the state on May 20. Though the state government compensated fishermen with damaged trawlers, repairmen are in short supply. So most trawlers are docked.

A fisherman from Kakdwip, in the coastal belt in South 24-Parganas that was devastated on May 20, said they anticipated more hilsa which lives in the sea but goes to the river to spawn to flock to the rivers this June as the Covid-induced lockdown meant less effluents in the water. "But we can't take advantage of this when a bulk of our vessels and fishing nets are damaged by Amphan, the fisherman said. "We can't access the fish. "It is ironic that though there may be more hilsa near the shore because of calm waters during the lockdown, the cyclone dashed our hopes, said another fisherman from Namkhana. A source in the fisheries department in East Midnapore's Digha said only 10 per cent of the district's trawlers were seabound on Monday, the first day of the season. A source in the South 24-Parganas said 20 per cent of trawlers in the district had ventured into the sea on Monday. A member of the Digha fishermen's association said most repairmen were from Odisha and Andhra Pradesh.

"We are at a loss until there is a full unlock, he said. "Less than half the trawlers in the South 24-Parganas coastal zone are ready to sail. We can't do anything but wait. Sadly, the fish might be gone by then, added Kakdwip Fishermens' Welfare Association secretary Bijon Maity. Deputy director of fisheries (marine) Surajit Bag said: "We are set for another poor hilsa yield this year, though it could have been the opposite. The other major hurdle for fishermen is the decision to keep the Digha wholesale fish market closed till at least June 30. The market was set to open on Monday, but residents objected to it fearing the spread of Covid-19 from the 15,000-odd buyers from across Bengal and other states, who gather here to procure stocks, said a market committee member.

## **West Bengal: Fisheries sector buoyant of greater haul of Hilsa as lockdown curbed vessel movement and pollution**

<http://www.millenniumpost.in/kolkata/fisheries-sector-buoyant-of-greater-haul-of-hilsa-as-lockdown-curbed-vessel-movement-and-pollution-410413>

"The fisheries sector in the state is optimistic of a good haul of Hilsa fishes this year with the fishermen venturing into the deep sea from Monday after a hiatus of nearly three months because of the lockdown. Hilsa popularly known as Ilish is much more than gastronomy for a Bong. It's about identity, history and nostalgia. But over the years due to wanton exploitation, pollution and habitat destruction there has been a decline in the availability of Hilsa in both sea and river. 2019 was disappointing for the Hilsa lovers as feeble quantity hit the market. ""The lockdown may prove as a blessing in disguise with much less movement of vessels in the sea and river. The factories have remained closed so industrial wastes have hardly flowed into the river or sea making the water quality better this year. So we are hopeful that the fishermen will have a rich haul of Ilish this year,"" said Manturam Pakhira, Sunderban Development minister.

Bijan Maity, general secretary of Kakdwip Fishermen Association said: ""The time for breeding of Hilsa is from April 15 to June 14 when there is a ban in venturing deep into the sea for catching fishes. The period has been extended as lockdown was imposed from March 23,"" The catching, marketing and transportation of Ilish less than 23 cms is banned in Bengal. However, a section of fishermen often flout the ban and indulge in netting of khoka (small) Ilish that are sold in the market. However, this year no catching of small fishes have been possible till date because of lockdown.

""We have taken measures to ensure that fishermen from Odisha and Andhra Pradesh who accompany the local fishermen in trawlers and venture into the sea under normal circumstances are not allowed this time in the wake of COVID pandemic. Only our local fishermen will travel to the sea. Sanitisation of the trawlers have been carried out,"" said Akhil Giri, Vice Chairman of Digha Sankarpur Development Authority. A quarantine centre has been set up near the Digha Mohona close to the place of auction of fishes so that any fishermen, buyer or seller showing symptoms while thermal screening can be taken there for necessary action.

## **West Bengal: Fisherman dies in tiger attack**

<http://www.uniindia.com/fisherman-dies-in-tiger-attack/east/news/2036991.html>

"A fisherman was killed by a tiger attack. Eyewitnesses said on Saturday morning four fishermen from Deulbari area of Kultali police station in South 24 Parganas district went out on a boat to catch fish and crabs in the river. When they were fishing near the Chituri forest in the Sundarbans, a tiger suddenly came out of the jungle and jumped on Gostha Naiya(36). Gostha's companions immediately counter-attacked the tiger with sticks. The tiger then left Gostha and

went into the forest. However, Gostha was seriously injured in the incident. When he was being taken to the hospital in a boat, Gostha died due to excessive bleeding. However, according to forest department sources Gostha and his team went to cut down trees in the Sundarbans. Gostha was then killed by a tiger. A shadow of gloom descended in the area following the incident. Meanwhile, former CPI(M) minister Kanti Ganguly gave Rs 20,000 for Gostha's last rites and assured to take care of his children's education.

**West Bengal: OH! NO! So long, and thanks for no fish?**

<https://www.telegraphindia.com/states/west-bengal/bengal-is-heading-for-a-fish-scarcity-and-what-will-arrive-will-be-costlier/cid/1780684>

"very year at this time, fishermen get ready to set sail once the annual deep-sea fishing ban ends mid-June. The harbour at Digha in West Bengal's East Midnapore district is typically chock-a-block with expectant trawlers and motorised boats, nets are spread out on the ground and needles fly as everything has to be in working condition before the annual launch. Labourers stack the underground decks of trawlers with ice, drums of drinking water and food. But this is 2020; nothing is moving to plan. First the lockdown battered the fisherfolk of Bengal and then Cyclone Amphan brought them to their knees. Next, on May 25, came the revised deep-sea fishing ban order from the Centre. While the implications extend to all fisherfolk, they perhaps weigh heaviest on the small-scale fishermen. At the mouth of the chain that is the fishing industry lies the fishing sector. It is made up of three types of players large-scale, middle-scale and small-scale fishermen. Type 1 comprises fishermen who use mechanised trawlers. These vessels can travel up to 370 kilometres into the waters.

They stay at sea for a week to 10 days and then return. Of their catch, 75 per cent is exported. Type 2 uses motorised fishing boats. They too can do deep-sea fishing like Type 1 but cannot stay in the waters for so long and generally come back the same day or the next. These fishermen cater mostly to the Indian domestic market; only a fraction of their catch makes its way into the Bengal market. Type 3 is made up of small-scale fishermen. There are different categories of small-scale fishermen. While some have motorised boats, others use the dinghy or small boat. They fish in the shallow seas, in the inland waters, estuaries, lakes and reservoirs. Some of them do not use a boat and catch fish with fishing nets.

All these fishermen cater to the local market. Most of the fish that lands up at auction centres in Canning, Namkhana, and Contai are supplied by them. These small-scale fishermen supply 80 per cent of the fish that is available in markets across Bengal. Bengal's small-scale fisheries have an annual turnover of Rs 500 crore. The peak season for small-scale fishermen is between October and February and for large and medium-scale players it is between June and April. After Prime Minister Narendra Modi announced the nationwide lockdown on March 23, all fishing activity came to a standstill. The trawlers that were still at sea had to hurry back with their catch but the smaller players were left holding nothing. Fish travels from the fisherman to the arat, or

wholesale market. But all of April and May, Bengal's wholesale fish markets Sealdah's Baithakkhana Bazar and Koley Market, the Howrah wholesale fish market, the Digha Mohana storehouse and the Canning arat remained shut.

“We could not have the auctions as fish traders and wholesalers come in huge numbers from local markets and adjoining districts such as Howrah, Calcutta, Hooghly, Haldia as well as north Bengal; it is against social distancing norms, says Batakrishna Patra, who owns an arat in Digha. “There was no fishing activity except for those who fish manually during high tide, says Gobinda Das, another arat-dar from Canning. In such a scenario, cold storages were thrown open. In normal years too, the arats shut in summer. Patra says in April, May and June, local business is completely dependent on fish pulled out of cold storage. But with all fishing activity suspended due to lockdown this year, there will be only half the regular volume of fish in cold storage. “In the long run, the supply of fish will be hit and prices will be sky-high, says Pradip Chatterjee, who is convener of the National Platform for Small Scale Fish Workers (NPSSF). Chatterjee elaborates,

“The small-scale fishermen who go out to sea also contribute to the dried fish sector. According to Debasis Shyamal, who is national council member of NPSSF, while Midnapore processes dried fish that makes for 60 to 70 per cent poultry and cattle feed for the state, the supply from South 24-Parganas is almost entirely for human consumption as the quality of fish is better. Apart from its domestic use, dried fish is also exported to Bangladesh, Southeast Asia, the European countries and the US, and earns the state more than Rs 1,000 crore annually. Over and above the hurdles put forth by Covid-19, small fishermen are now having to grapple with the widespread spoils and ravages of Amphan.

Abdar Mallick, a fisherman from Sagar Island in South 24-Parganas, says, “The cyclone has destroyed our homes and property. Our fishing nets have been damaged. Our boats have broken into two. We are not in a position to go out fishing. According to the marine fisheries census conducted in 2010 by the Central Marine Fisheries Research Institute and the department of animal husbandry, dairying and fisheries, there are 188 marine fishing village panchayats in Bengal along four coastal districts. There are 76,981 “fishermen households in the state. Among these, 53,532 are families of traditional fishermen who are also small-scale fishermen. The maximum number of households are in South 24-Parganas, followed by East Midnapore. Says Shyamal, “We do not have the exact number of fishermen affected by Amphan. But 90 per cent of them have lost their homes.

The traditional fishermen live in houses with roofs made of tin, asbestos or clay tiles. They have nothing left now. The state government has promised a cash dole of Rs 10,000 to every small-scale fisherman in order to procure new boats and nets. It must be noted that the smallest fishing dinghy costs Rs 80,000 and a small gill-net comes for Rs 25,000. Not all of it is bad news though, at least not for everyone. Patra's mind wanders about the waters teeming with fish. He

says, “Hilsa will have arrived in huge quantity by the time fishing starts again, provided the monsoons are on time. Last year, it was almost September by the time we caught the first glimpse of the season's hilsa. After a pause he adds, “But hilsa or any other fish will be available in abundance, only and only if the ban is observed.

Patra is referring to the uniform deep-sea fishing ban that was introduced in 2015 by the department of fisheries, keeping in mind the time the sea fish need to grow and multiply. It was decided that, every year, fishing activity would be banned between April 15 and June 14 for the east coast, and June 1 and July 31 for the west coast. But this year, on May 25, the Centre issued a revised ban in order to offset the damage to business caused by the lockdown. According to it, the ban period for both coasts will be reduced by 14 days. Inland fisheries is fully managed by state governments, but marine fisheries is a shared responsibility of the state and the Centre. This ban includes each and every fisherman, large, medium and small. And there is a reason why the revised timeline is equally worrying for all.

“What has not been taken into consideration is that this [premature start to fishing season] is going to harm marine life immensely, says Chatterjee of NPSSF. Shyamal adds, “If we venture out to sea ahead of time, we will end up catching breeding fish and also destroy the seedlings and fish habitat at the bottom of the sea. If the trawlers sail out, they will catch the small fish as well. The small-scale fishermen will have to wait it out despite the waiver as they are not equipped to handle bad weather and angry waters. Sahodev Mondal, a small-scale fisherman based out of Nandigram in East Midnapore, agrees. He says, “Trawling means hauling the fish for several kilometres.

Most of the small fish are dragged along with large fish; they get killed in the process. I use gill-nets for fishing; I cast them into the waters and pull back after half an hour or so. This means only those fish would be hauled up that have got entangled. It does not damage the small fish as they can pass through the nets easily. The solution prescribed by Chatterjee is to have a 120-day ban for trawlers and a 90-day ban for all small players. He says, “It is the minimum time the sea requires recuperating and rejuvenating.

### **West Bengal: Cyclone and pandemic prove doubly destructive for shrimp farming**

<https://thefishsite.com/articles/cyclone-and-pandemic-prove-doubly-destructive-for-shrimp-farming-in-west-bengal>

"It was not a cyclone but a monster that had come to devour our lives and livelihood. Our mud houses are submerged underwater and floating polythene sheets and household items are the only remains of the devastation. We managed to survive nature's fury, but our source of income is gone forever. We have lost our shrimp farming for a very long time. We have to literally beg for survival, rued Jaba Mondal, 39, who broke down twice while recounting her ordeal. More than three weeks have passed since Cyclone Amphan, considered the most destructive storm storm to hit the Bay of Bengal in almost three centuries, devastated the eastern states of West Bengal and Odisha in India on 20 May, but the woes of the people are not yet over. In West Bengal 98 people lost their lives, and the livelihoods of many others were severely impacted due to salty water flooding many fields.

Severe losses for shrimp farmers Jaba, who lives in Tiapara village (part of the Hasnabad Community Development Block in Sundarbans, West Bengal), has been a shrimp farmer for over a decade. She had stocked shrimp worth around? 500,000 (US\$6,615) in her pond but the cyclone led an embankment to collapse, which resulted in an ingress of salty water from the nearby Ichamati River. "We were jolted out of our sleep by the noise of the water gushing inside our houses. We panicked on seeing the rising water level. We left everything and ran for safety. We survived but have lost thousands of shrimp, which were our livelihood, added Jaba. She might derive some solace from the fact that she is not alone in her plight. Nearly 8,000 shrimp farmers in Tiapara and its neighbouring 10 to 12 villages have lost their incomes to the cyclone. Because of the devastation in brought, they commonly refer to as the "monster. Several shrimp farmers living in the Sundarbans area – known for its mangrove cover and ecological fragility – said that they are used to natural disasters but had never witnessed or heard anything like Cyclone Amphan.

"We had released post-larvae worth around Rs1.2 million [almost \$16,000] recently, as the season began. We were aware of the approaching cyclone, but it's a common phenomenon here and people are used to them. But we were shocked. The speed of the winds almost pierced our ears. The salty water entered into our fields due to the collapse of the embankment. We lost all our shrimps. We had borrowed the money from a private money lender at higher interest for shrimp cultivation thinking of better returns but everything is gone, said Biswajit Das, 31, who runs a family shrimp farming business.

Similar to the practice of farmers in other parts of the state, the majority of farmers in Sundarbans have converted their agricultural lands into shrimp farming. The conversion to aquaculture has been a profitable venture for farmers here, as traditional farming is seasonal and relies on the monsoon. "Unlike other parts of the state, we do not have multiple cropping, as the ground water is saline. We depend on the monsoon for crops and rice is grown here. But switching over to shrimp has brought profits, as the margin is several times more than paddy, said Narendra Nath Mondal, 52, a shrimp farmer in the neighbouring Khapukur village, who also lost his shrimps in the cyclone. Feed suppliers and exporters also face difficulty The cyclone has

not only devastated farmers' businesses but also those of feed and shrimp suppliers and exporters. Across the region's shrimp sector, these heavy setbacks have been compounded by the coronavirus pandemic and the lockdown measures that have been put in place in response.

Farmers say that March and April would usually be the season for releasing shrimp into their ponds but both the lockdown and cyclone have made normal business operations impossible. “We have nothing left as our investments have been lost in the cyclone, said Balram Mondal, a shrimp farmer in Mondal Para village. “It would be virtually impossible to take on shrimp farming next year due to financial constraints and failure to repay the existing loans. Feed suppliers are also running up losses.

“The abrupt lockdown brought severe losses to the feed suppliers as majority of the farmers had stopped cultivation, said Gautam Patra, one of the major feed suppliers in the Hasnabad block. “Still, some were doing it. But the cyclone wiped out everything. The post-larvae traders in our area had done a roaring business in the last fiscal year, but the situation is grim this year. It's feared that the production of shrimp could drop to around 800 tonnes, from around 5,000 tonnes last year. West Bengal is one of the largest shrimp-producing regions in the country. In 2017-18 the state had produced around 76,534 tonnes of shrimp with 55,211 hectares of land under cultivation, according to the Marine Products Export Development Authority (MPEDA). But those connected to the trade feel that both production and acreage are going to take a big hit due to the combined effects of the lockdown and the cyclone.

“The lockdown had already caused enough damage, pointed out Nemai Das, 55, another feed trader in Hasnabad. “The cyclone and the breach in embankment have led to the entry of salty water in the fields. The situation will not improve unless the salty water is removed from the fields. It seems unlikely till the embankment is repaired and the farmers have money to resume farming. At present, the salinity of the water is 35-40 parts per thousand (ppt) which is much higher than the 12-20 ppt required for shrimp farming.

The land and production – both would be drastically hit. Shrimp cultivation is mostly done in three districts of West Bengal: North and South 24 Parganas (covering Sundarbans) and East Midnapore. Farmers in other parts of Bengal have suffered damage, mainly due to trees falling into ponds. “The leaves from the trees that fell on the ponds have severely affected the water quality, which is affecting the shrimp, said Pradip Chatterjee, president of Dakshinbanga Matsya jibi Forum (the South Bengal Fishermen Forum). “We have urged the state government, asking for the immediate compensation to the fishing community so that they can resume their livelihood. Shrimp exporters have expressed their concerns, saying that the market faces a double blow from the lockdown and cyclone.

“As the Indian government has relaxed the lockdown measures recently, the export market has started to recover, said Ronit Guha, director of NDM Seafood Processors and Exporters, which is based in Bengal. “People are now becoming attracted to frozen food because it is fully tested for

safe consumption and hygiene, while fresh food doesn't undergo several tests. The cyclone has added to the woes of the exporters but, thankfully, the scenario is not the same in the entire state. But the cyclone has led to an increase in the prices of shrimp of ₹100- ₹150 (approximately \$2) per kilo. Our biggest concern is to keep our labourers safe from Covid-19 to ensure the smooth and risk-free running of the business.

### **West Bengal: COVID-19: Siliguri fish market closed for a week**

<https://www.onenewspage.com/video/20200612/13109374/COVID-19-Siliguri-fish-market-closed-for.htm>

"The district administration decided to shut fish market in West Bengal's Siliguri from June 12. The market will be closed till next seven days amid coronavirus pandemic. The decision was taken by Darjeeling district magistrate to curb the spread of COVID-19. There are 5117 active cases of coronavirus in West Bengal so far.

### **West Bengal: Picking up the pieces**

<https://www.dailypioneer.com/2020/columnists/picking-up-the-pieces.html>

"While the rest of India and its neighbour Bangladesh might enjoy a full moon, the night of the poornima (full moon) with a luminescent lunar sky full of romantic fantasies in the Sunderbans, on both sides of the border, spells doom, death and destruction these days. After the fierce cyclone Amphan hit West Bengal, Odisha and Bangladesh on May 20, the huge delta region and the largest mangrove area in the world was hit the hardest, putting more than four million human lives on the edge yet again. The West Bengal Government alone estimated that the damages caused by the cyclone were to the tune of Rs 1 lakh crore. And in Bangladesh, there were reports of tens of thousands of homes damaged or destroyed and many villages submerged by storm surges in low-lying coastal areas like Khulna and Satkhira.

Most of the people in the Sunderbans live on the abysmal margins of the economy in congested ghettos across this beautiful landscape surrounded by water and dense green forests, with the man-eating Royal Bengal Tiger and crocodiles a constant threat, even in the so-called buffer zones. Every time a destructive cyclone or storm begins to form in the turbulent waters of the Bay of Bengal, due to the increasing high surface temperature of the sea, it triggers fierce cyclones, often catastrophic, like the cyclone Aila, which hit Bengal and the Sunderbans earlier. Despite the ravages being witnessed in the destruction of water bodies, forests and the expanse of the mangrove green belt due to man-made construction and appropriation of forest land, it is the Sunderbans which bears the brunt of these fast-moving, high-speed cyclones, mostly protecting the mainland and the plains in the rest of Bengal and Bangladesh by assimilating the wind and stopping its speed.

Repeated appeals by environmentalists and experts to stop big thermal power projects and other forms of construction activity have fallen on deaf ears. Protests in Bangladesh against a recent coal-based thermal power project with Indian assistance in the Sunderbans, and that too almost in the core area, have not yielded any results as yet. Protests have been literally banned in Bangladesh and activists in Khulna told this reporter two years ago that even peaceful demonstrations or pamphlet-distribution are not allowed by the Bangladesh Government. This is despite the fact that top professors and eminent citizens in Khulna and Dhaka University have repeatedly given evidence to the Government that the entire green zone of this ecological hotspot and a world heritage location is being seriously threatened, so much so that even the Royal Bengal Tiger will be forced into displacement.

Even journalists are not allowed to enter the area and report, close to Khulna. Indeed, the tide is a regular feature in this undulating expanse of backwaters, rivers and water bodies across the cluster of many islands, some doomed to disappear and some which reappear as new, tentative spaces of human civilisation. This is almost like the areas close to the Brahmaputra river in Assam after the annual floods, which destroys and submerges vast tracts of land and forests, numerous villages and human habitations. Now, locals say, when the tide arrives on a full moon night, those who are living in tarpaulins under makeshift shelters surrounded by water, will yet again be doomed as the waters will rise, submerging their fragile homes.

Volunteers and journalists, however, say that the West Bengal Government and the local administration, after initial lethargy, have moved in with great speed to undertake relief operations in the aftermath of the cyclone Amphan and the destruction it left behind as thousands of trees were uprooted in the gales and electricity and telephone lines brought down and houses flattened. Many of Kolkata's roads are flooded and its 14 million people were left without power for days after the cyclone. But after the initial hiccups, the entire Public Distribution System (PDS) has been effectively activated and rice, pulses and other essential commodities are being given in the ration shops. Several independent doctors and health workers have moved in from Kolkata to help the locals, as they did after Cyclone Aila hit the Sunderbans.

Besides, the Government, students, young professionals, voluntary groups and others have collected food, medicines, torches and so on and are reaching out to areas where relief has not reached. Anustup Roy, a young freelance photographer in Kolkata, for instance, organised all his friends and well-wishers and moved into many areas like Mohanpur and Sandeshkhali with relief material. The Jadavpur Commune of the Jadavpur University in Kolkata, which has been relentlessly working in the most remote parts of Kolkata providing dry rations, cooked food, sanitisers and medicines to cops, slum dwellers, homeless people, vendors and others since the lockdown, moved in from day one and travelled to Sunderbans to provide relief. The Bengal Relief Committee, in the first instance, almost immediately called for relief materials, such as tarpaulins, clothes, sanitary napkins, dry food, bottles of Zeoline, camphor, torches with batteries and so on.

They clearly stated that they wanted 10x12 feet tarpaulin sheets as a basic requirement. Several national and international NGOs have joined this effort by the Bengal Relief Collective, which also comprises students and teachers, including from JNU and other campuses. They used local fishermen, boatmen and others to move into north and eastern Sunderbans. They used launch boats while initially stocking the relief material at Hasnabad and Kwakdip. It has been weeks since cyclone Amphan ravaged the Sunderbans, and yet the trail of destruction it left behind is stark. Many islands, where people subsist on fishing, farming and catching crabs, are still submerged under saline water, which rises and recedes with every tide, finding its way inland through broken embankments. Where flood waters have evaporated, tall trees with decaying leaves and ravaged farms and fields stand testimony to the excessive salt which has left large swathes of land barren, unfit for agriculture for at least the next few years. Almost all mud houses are broken some have only a section of a wall, some just the pillars, and some, nothing at all except for a few broken, battered pieces of wood from frames. People in Sagar and Patharpratima islands said the fury of the storm was so massive, asbestos sheets and tiles of roofs were flying like birds.

Almost all of the Sunderbans is still under complete darkness. Electric poles and wires lie strewn around arterial roads, making movement of traffic difficult. Repair work began this week but electricity workers on ground said many of their colleagues have travelled back home during the lockdown, resulting in labour shortage, which would certainly delay restoration of power. Almost everywhere, panchayat pradhans and politicians are missing in action people in several islands said they have not seen them even once since the lockdown began.

In some villages, panchayat members have begun collecting identity documents from people who have lost homes and farms, so that they can be paid the compensation announced by the State Government. But allegations of corruption have also begun to surface at the same time. In some cases, ruling party cadres are accused of allegedly threatening Opposition party supporters who try to access relief or speak about corruption in relief disbursal. The BJP has done little on the ground except spread discontent against the State Government.

Several civil society groups like Bangla Sanskriti Mancha and Amphan Relief Network, NGOs like Mukti, Prameya and Praajak and individuals with near and dear ones in the Sunderbans have been working tirelessly through these last two weeks, distributing dry ration, tarpaulins, water, medicines and cooked food through community kitchens in numerous islands. “The big relief is that the Government is moving in with the public distribution system, distributing rice and basic food to the marooned locals. One hopes that this relief moves at a war-footing in the days to come, said a journalist reporting from 24 Parganas.

### **West Bengal: Tiger mauls fisherman in Sunderbans, drags body into jungle**

<https://www.dnaindia.com/india/report-west-bengal-tiger-mauls-fisherman-in-sunderbans-drags-body-into-jungle-2827122>

"In an unfortunate incident that happened in Sunderbans, West Bengal, a fisherman who went fishing in the river was attacked by a tiger and then dragged into the jungles. His body could not be found, leaving the family extremely distraught. The deceased fisherman has been identified as Uday Mistry, a 60-year-old male. At the time of the incident, Mistry was fishing in the river with another friend and then a tiger came out of the forests and attacked him. Then the tiger proceeded to drag him into the jungles. Uday Mistry's friend could not do anything to save him. In order to provide food for the family, the fishermen went to a river in the dense forests of Sunderbans to catch fishes. The family's loss was amplified by the fact that they could not perform the last rites as his dead body could not be found.

**West Bengal: Govt Will Plant 5 Crore Mangrove Trees In Sunderbans: CM Mamata Banerjee**

<https://www.republicworld.com/india-news/general-news/wb-govt-will-plant-5-crore-mangrove-trees-in-sunderbans-cm.html>

"The West Bengal government will plant five crore mangrove trees within a month in the Sunderbans area which has been devastated by super cyclone Amphan, Chief Minister Mamata Banerjee said here on Wednesday. ""There has been huge damage of the mangrove forests in Amphan. Our government has decided to rebuild the damaged forests by planting saplings,"" she said. On International Environment Day on June 5, there will be a small programme at Harish Park near her residence here to launch the project for planting five crore mangrove saplings in the Sunderbans, Banerjee said.

""The project will be completed within a month,"" she added. The chief minister said Bengal is a riverine state and the mangrove forests in the Sunderbans provide a lot of protection from natural calamities. The saplings will be planted to ensure that the forests remain intact in the Gangetic Delta that is criss-crossed by numerous rivers, tributaries and canals leading to the Bay of Bengal. Kolkata Municipal Corporation, Kolkata Police and West Bengal Police have also decided to plant saplings in the city and other parts of the state along with the state's environment department, she said. Thousands of trees were uprooted in the super cyclone in Kolkata alone, while causing similar or more damage in the coastal districts of South 24 Parganas, North 24 Parganas and East Midnapore.

Banerjee also announced a cash benefit of Rs 10,000 each to the fishermen whose boats have been completely damaged in the cyclone through the Fisheries department. ""Nearly Rs 17.22 crore will be given under direct beneficiary transfer scheme,"" she said. More than 8,000 small fishing boats have been damaged in the cyclone of May 20, while 37,711 fishing nets have been damaged, she said. A sum of Rs 2,600 will be provided per damaged net to the affected fishermen, while Rs 5,000 will be given to those whose boats have been partially damaged, Banerjee said. The chief minister said over Rs 37 crore will be distributed to the affected people whose livestock, including animals and poultry have been killed in the cyclone. ""Around 24,000

goats, sheep and other animals have been killed," she said. She further said Rs 6,000 crore has been released for repair and relief operations for the Amphan disaster, which has caused a loss amounting to Rs one lakh crore to the state.

Banerjee said different departments of the state government like public health engineering (PHE), irrigation, forest and power have worked very efficiently in dealing with the disaster caused by Amphan, while asserting that she will ensure that the West Bengal Power Development Corporation Ltd (WBPDC) gets opportunities to work in more areas in the state.

### **West Bengal; Fishermen to get Rs 1,600 for fishing nets and Rs 5,000 for damaged boats**

<https://www.telegraphindia.com/states/west-bengal/cyclone-amphan-in-bengal-more-aid-for-cyclone-hit/cid/1778272>

"Mamata Banerjee on Wednesday rolled out several initiatives to extend financial help to fishermen and people associated with animal resources development to overcome the losses they had suffered in Cyclone Amphan. "One-time financial assistance of Rs 10,000 would be given to 8,007 fishermen whose boats were completely damaged. The assistance is required as they depend on boats for their livelihood, the chief minister said at Nabanna during a videoconference with the authorities of 16 districts affected by the cyclone. Nearly 37,000 fishermen whose fishing nets were damaged would also get Rs 1,600 each.

Hundreds of fishermen will be paid Rs 5,000 each as their boats were damaged partially. Besides, the state government will provide Rs 30,000 each to those whose cattle had died in the cyclone. The government has earmarked Rs 37 crore for the purpose. "Primary reports suggest nearly 9 lakh cattle died in the cyclone. As a large section of rural populace depends heavily on their cattle to earn livelihood, the financial assistance was planned, said a senior government official. Moreover, the government will spend nearly Rs 15 crore to help affected poultry owners. "A total of Rs 10 crore will be spent on vaccination, feed and medicine for the cattle and poultry, said an official. The state government, the chief minister said, would go for planting of 5 crore mangroves in the Sunderbans.

"The forest department will start the project on June 5, the World Environment Day. On that day, small programmes with three-four participants will be held in all blocks to plant trees. In Calcutta, the civic body has also initiated a project to plant more trees to make up for the losses caused by Amphan, said Mamata. The state government had already announced compensation for farmers who had lost crops and those whose homes had been damaged in the calamity. Mamata praised a number of departments for carrying out restoration works during the post-Amphan period.

"The WBSEDCL has done well... The irrigation (department) has also done well in repairing damaged embankments. The PHE was also working to install tubewell in several areas, she said.

The chief minister has said there are some blocks in North 24-Parganas, South 24-Parganas and East Midnapore where supply of electricity could not be restored as many areas are still under water. "The WBSEDCL was facing problems to take poles to the affected areas because of stagnation of water. Moreover, there is a fear of electrocution in the stagnant water. The WBSEDCL would try to solve the problem at the earliest, said the chief minister.

### **West Bengal: Govt releases Rs 1,444 cr for cyclone Amphan relief**

<https://www.outlookindia.com/newscroll/west-bengal-govt-releases-rs-1444-cr-for-cyclone-amphan-relief/1853934>

"The West Bengal government has released Rs 1,444 crore to assist people as part of the rehabilitation process following cyclone Amphan, Chief Minister Mamata Banerjee said on Tuesday. The state government has already transferred money to nearly five lakh affected people for repairing their homes, besides crop damage assistance to 23.3 lakh farmers, she said. Financial assistance to two lakh betel farmers has also been provided, Banerjee said. ""While fighting the COVID-19 pandemic, Bengal witnessed a super cyclone Amphan, the fiercest storm in our recent memory. From the destruction of dwelling houses and physical infrastructure to disruption of fisheries and agriculture, the devastation has been unprecedented,"" the chief minister tweeted. Banerjee earlier announced that her government would release Rs 6,250 crore for Amphan relief measures.

"However, through the resilience of Bengal and its people, along with a determined effort by GoWB machinery, we have been able to kickstart major relief and rehabilitation work for the distressed, with an immediate announcement of a Rs 6,250 cr package as first tranche,"" she said in another tweet. ""I'm happy to share that GoWB has transferred funds to nearly 5L affected people for repairing their homes, released crop damage assistance to 23.3L farmers, apart from 2L betel farmers. We've released Rs 1,444 cr so far, against an initial estimate of Rs 1,350 cr,"" Banerjee added. Cyclone Amphan has claimed 98 lives in West Bengal and at least six crore people were directly affected by it. At least eight districts of West Bengal have been ravaged in the cyclone that hit the state on May 20. Prime Minister Narendra Modi had announced an immediate relief package of Rs 1,000 crore for the cyclone-hit state.

### **West Bengal: Sundarbans mangrove forests face existential threat**

<https://www.thehindu.com/sci-tech/energy-and-environment/sundarbans-mangrove-forests-face-existential-threat/article31715750.ece>

"The Sundarbans is a cluster of low-lying islands in the Bay of Bengal, spread across the coast of India and Bangladesh. It holds the world's largest mangrove forest with an area of about 10,000 sq km of which 60% is in Bangladesh and the rest in India. The mangroves of

Sundarbans provide sustainable livelihoods to millions of people and functions as a protective barrier for its inhabitants from natural calamities.

The degrading health of mangroves affects their resilience and recovery potential against climate change consequences. As the frequency and intensity of extreme weather events are expected to increase in the future, it is very important to conserve the mangroves of the Sundarbans.

### **West Bengal: Releases Rs.6, 250 cr. for Amphan damage**

<https://www.thehindu.com/news/national/other-states/west-bengal-releases-6250-cr-for-amphan-damage/article31707455.ece>

"Death toll in the cyclone increases to 96. West Bengal Chief Minister Mamata Banerjee on Friday announced the release of Rs.6, 250 crore for the damage caused by Cyclone Amphan. She said the number of deaths had increased from 86 to 98, based on the reports from the District Magistrates. She said five lakh families would get Rs.48, 000 each for house-building. Of this sum, Rs.20, 000 would be credited to their accounts and Rs.28, 000 would be part of their wages for 100 days of work under the Mahatma Gandhi National Rural Employment Guarantee Scheme. Ms. Banerjee said Rs.2, 400 crore would be spent for house-building across the State. A sum of Rs.300 crore was allotted, at the rate of Rs.1, 500 each for 20 lakh farmers. Another

Rs.200 crore was allocated for betel-leaf farmers. Of this sum, Rs.50 crore would be one-time grant and Rs.150 crore would be routed through the Mahatma Gandhi National Rural Employment Guarantee Scheme. The Chief Minister said Rs.2,900 crore was allocated for repairs to embankments, tube-wells and rural roads and electricity restoration. Chief Secretary Rajiva Sinha said the funds had been released. Electricity supply was restored to 70 lakh of the 88 lakh customers of the West Bengal State Electricity Distribution Company Limited.

### **West Bengal: ‘Our Sundarban Is Unrecognisable’: Life After Cyclone Amphan Wrecked the Island**

<https://thewire.in/environment/sundarbans-cycle-amphan-ground-report>

"“I have become a beggar now. All I had was a small hut, God snatched even that from me, 63-year-old Shabitri Midha of Pakhiralaya village in the Sundarbans said. In the last 30 years, Midha lost nine bighas (60,840 square metres) of ancestral land as the Bidyadhari river engulfed parts of the delta. Pointing to the waters, Midha said, “This river took almost everything we had. Now, this storm has just finished us. The Sundarbans delta is located around 100 km from Kolkata. To get there from the state capital, it takes at least four hours by car and then boat. The Wire visited the Gosaba block on Tuesday. This block was one of the worst affected in the Sunderban islands by Cyclone Amphan last week. “There is no prettiness here to invite the stranger in. Yet, to the world at large, this archipelago is known as the Sundarban, which means the beautiful forest, Amitav Ghosh had written in his novel *The Hungry Tide*.

Forget prettiness, after Cyclone Amphan, the Sundarbans have become unrecognisable. Just as we got down from a boat at the Gosaba ferry ghat, we spotted a wrecked launch boat on the right, half of it submerged. It seemed like the launch boat was preparing us for the devastation ahead. We went towards Rangabelia, about four km from the Gosaba market; we had been told much of the devastation was in this area. On reaching the river bank, just opposite Rangabelia primary school, we found high tides were slowly eating into the remains of the embankment. A group of 20-25 people were carrying tree trunks and sandbags, trying to fix the embankment as quickly as possible.

Hundreds of houses were wiped out in Rangabelia's Uttor Para, about one km from the primary school. Ananta Mondal, 67, lost three bighas (20,280 square metres) of farmland and is now living with his family in the local school, which is being used as a shelter house. "I don't know what we have done, why nature wants to punish us, Ananta said. Ananta and his family took shelter in the school on the afternoon of May 20. He is sad, though, that he could not save one of his calves. When asked about the storm, he said,

"I have witnessed many storms and floods since I was a child, but never seen such a storm in my life. At one point, I thought we were all going to die. Sukumar Mondal's wife Rekha Mondal started crying as she showed us their house. Almost fully submerged, only the house's roof can be seen. Sukumar has around two bighas (13,520 square meters) of land on which he grows paddy and three mid-size ponds, which now looks like they are a part of the river. Saltwater has inundated all the farmland in the village – creating another big concern for the villagers. "We can't farm on these lands in the next 2-3 years. Nothing will grow here, Sukumar said. Cyclones and floods have become a part of life for these villagers – the destruction barely shocks them anymore. "We have now accepted this as our fate. We will have to live this way until we die, Sukumar said, with a nonchalant expression.

A senior officer at the Gosaba Block Development Office said that the change in direction of Cyclone Amphan, and better preparedness, helped the Gosaba area, or else the destruction would have been far worse. "We have zero casualties in the block. Some of our major embankments were breached and thus, a lot of areas here were flooded. However, considering the intensity of the cyclone, the damages could have been far worse, he further said. Cyclone Amphan was the first super cyclone to form in the Bay of Bengal since 1999, and one of the fiercest to hit West Bengal in the last 100 years. As we moved to the interiors of the Rangabelia, the water was still waist-deep; this was six days after the cyclone made its landfall in Bengal's Ganga Sagar Island. When we reached the Gangamandir area, locals told us that that on the day the cyclone struck and the next, water was flowing 10-12 feet above their farmland.

Rangabelia's Uttar Para is caught between two rivers – Bidyadhari on the right and Gormor on the left. This further aggravated the scale of destruction in Rangabelia. A stretch of road from Gangamandir to Jotirampur ghat was completely washed away and looked like one vast lake.

Arjun Dey and Joynal Mistry, who are leading the embankment repair work in Rangabelia, said, “Around four km of road washed away. Currently, we are fixing embankments between Gangamandir and Jotirampur ghat on an emergency basis. Both Arjun and Joynal lost their houses in the cyclone. When asked how, even after their loss, they are working, Joynal said, “If we don't, who will? They are working from 4 am to 7-8 pm.

They don't even know how much the panchayat will pay them; they are working to save whatever is left. Speaking to The Wire, Jayanta Naskar, and Trinamool MLA from Gosaba in South 24 Parganas, said around 61,000 houses were destroyed in his assembly constituency alone. “I have never seen a storm like this in my life. Devastation is unimaginable. People here won't be able to farm in the coming years. Next, we moved to Haritala village in Amtali village panchayat, another affected region in the Gosaba block. The images here were the same as Rangabelia, with large areas still submerged and houses completely inundated. Hundreds of people are now living in Aamtali Binapani School, which was turned into a shelter home. We met 51-year-old Bhim Bhangi, who took khichuri (a broth made out of rice and lentils) in a small aluminium bowl and walked towards his home, which he was trying to fix. When asked about the storm, Bhim said,

“Never in our lives have we witnessed such a storm. My house was completely damaged; since this morning my son has been trying to fix it. Bhim told us that he had invested all his savings to lease three ponds. “Everything is gone. All I have now is over 300 kg of dead fish, Bhim said. Lakhan Dutta was sitting inside a makeshift tent, made of tarpaulin given by the panchayat. Just next to the tent, in a low-lying area, his house was still submerged. Lakhan told us that the first time he got a cooked meal was six days after the cyclone hit Bengal. “We were getting dry food from the camp. Today, for the first time, we got some food. Cyclone Aila, which had struck in 2009, devastated this eco-sensitive part of Bengal. Sundarban dwellers took several years to get back to their feet. Cyclone Amphan, which was more powerful and created widespread devastation, throws a larger challenge for the island people. Paritosh Mondal, a Gosaba Block Development Office employee, now in-charge of medical screening for those coming in from different states, told The Wire,

“Our Sundarban is unrecognisable. Thousands of people who were already impoverished now lost their houses and farmland. It's like a death knell for them. We saw hundreds of trees fallen, electric poles uprooted and overhead wires snapped across different areas of Gosaba, which cut off the island from other parts of the state. However, the most far-reaching consequence is the saltwater from the sea that entered agricultural fields, increasing the soil's salinity and likely reducing yields significantly for the next few years. Kamal Kanti Sen, former co-ordinator of tropical soil biology and fertility management at Jawaharlal Nehru University and a noted expert on the Sundarbans, said, “After Alia, life paused on the island. I fear a similar situation this time, or even worse. A major humanitarian crisis is in the offing; hectares of land will remain uncultivated for the next two years. “I am really concerned about the agricultural prospects in

the coming year, as almost 80-90% of farmland in my constituency is submerged in saline water. I am thinking of speaking to some agricultural experts and professors from Jadavpur University who can advise us on this. I am also open to engaging with top national and international NGOs who work in this sector. We all need come together for our poor farmers, Pratima Mandal, Trinamool Congress MP from Jaynagar, told The Wire.

As we headed back to Kolkata after a boat ride from Gosaba to Godkhali, we stumbled upon a rather tall man, wearing a red sleeveless t-shirt and blue shorts, carrying a big suitcase in his left hand. He was telling the medical check-up personnel that he was coming from Tripura. I struck up a conversation with him. His name is Tapan Sarad. He was working as a waiter in a restaurant in Agartala. He began his journey home a day before Cyclone Amphan struck Bengal. After walking for days and hitch-hiking when possible, he reached Godkhli only to learn from his cousin that their house was washed away in the cyclone. "The first struggle was to reach home. Then I find there is no home. Maybe this is destiny, Sarad said.

### **West Bengal: Floods and tears in Bangladesh a week after cyclone**

[https://news.yahoo.com/floods-tears-bangladesh-week-cyclone-130034215.html?soc\\_src=hl-viewer&soc\\_trk=tw](https://news.yahoo.com/floods-tears-bangladesh-week-cyclone-130034215.html?soc_src=hl-viewer&soc_trk=tw)

"Rezaul Islam wades through waist-high water, a sack of rice on his head salvaged from what remains of his home, a week after a cyclone savaged Bangladesh and eastern India. The strongest storm to hit the area this century killed more than 100 people, flattening entire villages, uprooting trees and ruining fish ponds in the Indian state of West Bengal, and south-west Bangladesh. ""We are trying to salvage whatever we can,"" 17-year-old Islam told AFP, his house still half-submerged in water left by storm surges unleashed by Cyclone Amphan. With homes destroyed or uninhabitable, more than 200,000 people in India and at least 100,000 in Bangladesh remain crammed into cyclone shelters -- often with little regard to coronavirus precautions.

The most damage caused by Amphan was from the accompanying storm surge, which wrecked several hundred kilometres (miles) of embankments that are supposed to protect homes and farms in low-lying coastal areas. Locals worked through the night when the cyclone hit, desperately trying to shore up levees with sandbags. It was mostly to no avail. Tens of thousands of acres of farmland, fruit plantations and farms have been devastated by the saltwater. - Roofs ripped off - In the Bangladeshi town of Koira, thousands like Islam have been trying for days to retrieve belongings from what remains of their homes in the now-desolate landscape. Many buildings had roofs ripped off by the 165-kilometre-per-hour (100-mile-an-hour) winds of Amphan. Wells for drinking water have also been polluted and locals are now reliant on the

army to deliver supplies. "I could not salvage anything. All valuable items and furniture have rotted," said wizened 71-year-old widow Nosimon Begum.

The devastation goes beyond destroyed homes. Shrimp and crab farming in the area are vital to the Bangladeshi economy -- second only to the manufacture of garments for global brands like H&M. Sanjay Mondol said even before the cyclone, he had lost almost \$1 million after the coronavirus pandemic stopped his exports of crabs to customers in China and elsewhere. The cooperative of around 300 farmers he belongs to saw more than 2,000 acres of washed away by the tidal surge. "This storm has now broken our backbone. We now have no choice but to beg in the streets," Mondol said, tears welling up his eyes.

### **West Bengal: Amphan aftermath: Crab trading hit, Sundarbans villagers left to fend for themselves**

<https://www.downtoearth.org.in/news/economy/amphan-aftermath-crab-trading-hit-sundarbans-villagers-left-to-fend-for-themselves-71407>

"Days after Cyclone Amphan ripped through south West Bengal on May 20, 2020 wreaking havoc across several parts, including in Sundarbans revival has been slow. One of the most severely affected communities has been that of crab farmers and traders. "We lost our livelihood to cyclone and the novel coronavirus disease (COVID-19) lockdown. How we will survive with collapsed houses and no income? Our children are sleeping hungry, said Swapan Mondal (37), a crab catcher at Deulbari village in Sundarbans' Kultali block.

He lives on the edge of river Makri, a tributary of river Matla. A portion of his house was washed down. "My crab collection records were washed away. It would be difficult to handle the business in the absence of records, he said. But Swapan is not alone. At least 90 per cent of the 8,000 villagers depend on crab catching and fishing for livelihood. Shibash Mondal (50), who resides in the same village, said the cyclone exacerbated the troubles caused by COVID-19 lockdown: "We stopped fishing after we were barred by the administration. We took a loan from private money lenders to feed our families and were waiting for the easing of restrictions. But the cyclone destroyed everything. Another farmer said he invested Rs 35,000 in farming,

"I was hoping for better returns, but saline water entered my agricultural land and damaged all standing crops. The vegetables are under water. The embankment that prevented the breach of saline water has to be repaired, said Joydeb Chapadar (65). Cyclone Aila and Cyclone Bulbul were less ferocious than Cyclone Amphan, according to villagers. "We have never witnessed anything like Amphan before, said Haripada Chapadar (60), a crab catcher. While local non-

profits have been distributing dry ration kits to villagers and offering livestock on loans, villagers are sceptical. “A crab farmer can earn Rs 14,000-15,000 during a single trip of 10 days to the forest. Such income is not possible in livestock rearing.

The local administration and non-profits have been visiting us with the proposal, but nothing can compensate our income from the forest, said Shyampada Naskar (50). The non-profits working in the area said the problem started in December, 2019, soon after COVID-19 spread in China. “The export market started suffering in China in December. It suffered a massive blow after the lockdown was announced. Crab catching is the source of livelihood for the people of Sundarbans, said Amitava Roy, general secretary, non-profit Lokamata Rani Rashmoni Mission. “Most of them took loans from private moneylenders at higher rates for survival. The cyclone came as a final nail in the coffin, Roy added. The forest department issued licences to around 4,000 locals of Sundarbans for fishing inside the forest without the use of mechanised boats. The people catch crabs and poach wild animals, pointed out Santhosha GR, divisional forest officer, South 24 Parganas.

“The permission is not for commercial purposes. But it is violated often, he said. He added that forest department started safe honey initiative, wherein bee boxes were kept inside the forest camps. Around 70 farmers joined the initiative and 44 tonnes of honey produced in the last three months. Such initiatives have to be taken on a larger scale to thwart people from venturing into danger areas of the forest and create alternative livelihood, he said.

**West Bengal: In Sundarbans, cyclones’ worst impact not on natural areas and inhabitants, but on non-indigenous and exotic**

<https://www.firstpost.com/india/in-sundarbans-cyclones-worst-impact-not-on-natural-areas-and-inhabitants-but-on-non-indigenous-and-exotic-8414271.html>

"Since 2001, every time a cyclone has made landfall in north east India, I am asked if the natural areas of the Sundarbans have been damaged, and in particular, if tigers have perished. In the aftermath of Cyclone Amphan too, it has been no different. Until 2009, I would respond to these queries by saying that I do not know, or give vague answers. I am neither a meteorologist nor a wildlife specialist but by 2009, I had spent nearly a decade living and working in the Indian Sundarbans, and had some knowledge of the contiguous mangrove forest on the other side of the border through visits and interactions with local residents and experts.

In May 2009, when Cyclone Aila hit the Sundarbans, I gained firsthand experience of the impact of the storm in human inhabited areas and the forest and the confidence to comment on the situation. Cyclones are so common in this part of the world that the term was coined in Calcutta. The term was introduced in the second edition of *The Sailor's Horn-book for the Law of the Storms*, by Henry Piddington in 1848. By then, Piddington had been studying storms and publishing articles on the topic in the *Journal of the Asiatic Society of Bengal* for 10 years. In

1853, he advised against building Port Canning because of the vulnerability of the location to storms. He did not live to see the port being built. Port Canning was devastated in 1867 by a storm, and abandoned.

This was not the first enterprise to be abandoned in this part of the world due to storms. In 1811, the project of clearing Sagar Island was initiated under commercial terms. After initial hiccups, reclamation commenced in 1819 with construction of embankments, clearing of land, digging of freshwater tanks and settling cultivators. Five settlements made considerable progress by 1833 when a cyclone struck in May and almost all was lost. Subsequent storms struck in June 1842, October 1848, and again in June 1852, when settlers pretty much abandoned the island. To encourage settlers to stay back, all taxes were abolished until 1863. As the tax-free period expired, surveys were conducted afresh for tax assessment but another cyclone struck on 5 October 1864 and wrought great havoc. Yet another storm struck in November 1867 that reduced the cultivated area on the island to about 440 hectares. Due to these repeated calamities it was proposed that the island be made revenue free for ever, and fresh grants of land, free of revenue, were made during 1875-77 for six settlements.

Colonial literature has detailed accounts of cyclones in this part of the world but there is no mention of damage to the natural areas of the Sundarbans. Either such damages did not occur or were not taken into account. It is unlikely that the latter was the case because by 1865 the Forest Act was in place for protection of forest for timber. Forest related legislation in the subcontinent, in general, view forests as production units and it is therefore safe to assume that cyclones cause limited or insignificant damage to the natural areas of the Sundarbans. Cyclone Sidr that struck Bangladesh Sundarbans in November 2007 was an exception. The Extremely Severe Clyclonic Storm had attained peak one-minute sustained winds of 260 km/h and ripped off mangrove vegetation over vast tracts.

Until 24 May 2020, there have been no reports of animal casualties in the Indian Sundarbans. This is unsurprising because forest dwellers, including humans, are able to read environmental changes very well and are able to protect themselves. Think of the Sentinelese of Andaman who appeared unscathed by the Indian Ocean tsunami of December 2004. It is the non-indigenous and the exotic that suffer from natural hazards the most. The flora and fauna of the Sundarbans are indigenous whereas the people are not. Moreover, cyclone damage is caused by either the storm itself or the surge, or both. In case of the natural areas even if wind speed is relatively high there is little damage to vegetation, and mangroves moderate the surge. The natural islands are higher than the settled islands, thus the height of inundation is lower and for shorter duration since water moves unrestricted, unlike (with) embanked islands. The embanked islands are not only lower in elevation but are also saucer-shaped whereas the forested islands are like upturned saucers, draining water quickly.

Cyclonic events cause upwelling of nutrient rich water and fisher folk usually report higher catch after such events. I do not find reasons to be concerned about the ecological well being of the natural areas and their inhabitants due to cyclones unless future events are significantly more severe. However, what is of concern is the decline of the terrestrial component of the ecosystem at an increasing rate, particularly on the Indian side. The Indian Sundarbans region is experiencing net land loss due to relative sea level rise and erosion. Modelling studies show that there will be a dramatic decline in suitable Bengal tiger habitats in the Sundarbans. Mangrove tigers are good swimmers but not aquatic animals.

The same applies for mangroves too; mangrove vegetation can withstand diurnal inundation but are not aquatic plants. Repeated storm strikes have shown that it is the human communities of the Sundarbans that suffer the most. The impact of Cyclone Amphan is no different. Rebuilding lives and livelihoods as they were prior to the cyclone is a missed opportunity because the gains of rebuilding are lost when the next cyclone strikes. While the interval between two such events is uncertain, the chances of a tropical depression forming in the Bay of Bengal and reaching severe cyclone stage is increasing, particularly during November, which accounts for highest number of intense cyclones in the region. The missed opportunity is on account of conventional rebuilding that does not make the lives and livelihoods any less vulnerable since the risks emanating from the interaction between climate-related hazards (such as cyclones) with the vulnerability and exposure of human and natural systems remain unaddressed.

Resilient rebuilding would involve rebuilding or creating new institutions, organisations, and systems to address, manage, and overcome adverse conditions now and in the future. This is expensive in terms time, effort and money, but social return on investment in the form of secured lives and livelihoods is also higher despite climate-related hazards, and returns accrue over the design life of the program, and beyond. Resilient rebuilding could also address risks to the natural system. This would involve: 1. facilitating silt and freshwater flow into Indian Sundarbans to keep pace with relative sea level rise, 2. halting withdrawal of groundwater, and 3. making space for mangroves to migrate further inland. The last action can be undertaken only if humans relinquish the space they currently occupy. Conventionally thought, this might seem improbable but if a carefully phased out, participatory capacity building and empowerment approach is pursued for poverty alleviation and risk reduction, moving away from high-risk areas towards better opportunities may appear as the most attractive option for the younger section of the population.

This approach would simultaneously improve prospects of human development and prevent avoidable loss of life and livelihood due to high intensity weather events such as Amphan, and partially reverse ecosystem degradation through mangrove regeneration on land relinquished by households moving to safer locations, and to a more secure future.

## **West Bengal: When the tiger ate her husband, the storm took away the employment, this is the story of the tiger widows of the Sunderbans**

<https://ourbitcoinnews.com/when-the-tiger-ate-her-husband-the-storm-took-away-the-employment-this-is-the-story-of-the-tiger-widows-of-the-sunderbans/>

"First a tiger, then a storm. Life in the Sundarbans of West Bengal was not easy already. Lack of basic facilities. The danger of the tiger attack on Kadam Kadam. And now the storm of Amfan on him made a life here more difficult. The 'tiger widows' of Sundarbans are forced to live a struggling life in such an environment. The woman whose husband was killed by the tiger. One such woman is Manjula Sardar. 45-year-old Manjula was destined to eat something for the first time after two days. That too a handful of puffed rice and jaggery.

The desperation of losing everything is visible on the face. Just looking at the pond that has been filled with salty water after the storm. The Amfan storm that hit West Bengal a week ago not only killed all the fish in Manjula's pond but also snatched the only livelihood from it. No first time a mountain of troubles has broken on Manjula. Seven years ago in 2013, the tiger killed her husband in the Gosaba area. Henceforth, fishes in the pond were the only means of earning. Nearby farms have also been ruined by the storm. Manjula and women like that are commonly called 'tiger widows'.

Even before the storm changed life Manjula told that earlier too the storm had changed her life. When the farms were destroyed due to Cyclone Aila, the husband was forced to start fishing. Meanwhile, the tiger attacked and killed them. After much struggle, a pond was allowed to be used for fisheries with the help of an NGO. Now Amfan also carried the storm. Many stories like Manjula More than 100 'tiger widows' of the Satjalia block of the Gosaba area lost their husbands to tigers in the last 15 years and the story is more or less the same.

According to official figures, at least 52 people have died in tiger attacks between 2010 and 2017 in the Sundarbans region. Sheeba Sardar (40) is another tiger widow from Satjalia. He fears hunger more than a cyclone or human-tiger conflict. She used to do poultry farming. 100 chickens and 80 chickens were washed away in the storm. She says that whenever a disaster occurs in the Sunderbans, we have to start afresh. Sulata's husband was killed by a tiger in front of his eyes Agricultural laborer Sulata says that after the Aila cyclone things had started to return to the track that the storm of Amfan ended everything. He said, 'Now we have to start everything afresh. There is no cultivable land left and I have no means to raise a family. ' In 2011, her husband was killed by a tiger in front of her eyes. She says that many women who lost their husbands in tiger, crocodile and snake attacks moved to the city and found work there. When contacted, West Bengal Sundarban Affairs Minister Manturam Pakhira said that the government would look into the case of Sundarbans widows.

### **West Bengal: Fish growers in neck-deep losses**

<https://www.telegraphindia.com/states/west-bengal/cyclone-amphan-in-west-bengal-fish-growers-in-neck-deep-losses/cid/1776140>

"Noor Ali Mollah was unable to fathom the losses he suffered as saltwater flooded his pond killing all fish. The Hansnabad resident was trying to cover the face to avoid the obnoxious smell of the dead fish. In several areas of North 24-Parganas and South 24-Parganas, a few lakh people attached to pisciculture are lost in despair since Cyclone Amphan triggered heavy tidal waves from coastal rivers and salt water inundated ponds and other waterbodies. While salty water has killed fish in the two districts, tree leaves and branches blown away by the cyclone landed on the ponds to adversely affect fish production in East Midnapore. According to a preliminary estimate, Bengal is likely to suffer a whopping loss of Rs 1,500 crore in fish production owing to Amphan.

Six days after the cyclone, people involved in the fish production in the three districts could not clear the waterbodies of rotten fish because Amphan derailed their lives. "I am confused about what to do now...The cyclone has robbed me of everything. I have no roof over my head. I have to reconstruct my house, Noor Ali said. People attached to fish production suffer huge losses in several areas of North 24-Parganas and South 24-Parganas every year as salty water gushes into 'freshwater' fishing zones. Canning, Gosaba, Basanti, Basirhat, Hingalganj, Minakha, Hansnabad and Nazat are main hubs of fish rearing in the two districts. An officer of the state fisheries department said: "The water in the rivers close to the coast is generally brackish in colour because seawater enters during high tides. When the salty water mixes with the freshwater of ponds and bheries because of tidal waves and inundation, fish that survives in sweet water dies. In many areas, thatched dams had been made to avoid such inundation.

Amphan has damaged a number of the dams, inundating several areas with salty water. The salt water not only killed freshwater fish varieties like rohu, katla and puti but also affected agriculture production. Arindam Ganguly, a fish trader in Basirhat, said: "It is a double blow for us. Fish rearing had to be suspended because of the lockdown and the cyclone has killed our entire production. Mangal Mandal of Sonakhali village near Basanti said: "All ponds in our area have been submerged with salty water. Rotten fish are now floating.

I have incurred a loss of Rs 50,000. According to a preliminary estimate, at least 4,397 tonnes of freshwater fish produced on 2,727 hectares of land have been perished in East Midnapore. The loss in East Midnapore district was largely because cyclone deposited leaves and tree branches in the waterbodies and spoiled the water. Prawn production has also suffered in the district. Pradip Khatua, a fish breeder in Deshapran block, said: "I had reared prawn in a four-acre waterbody. The prawn had matured but all have been killed. The oxygen supply system has also been damaged in the cyclone.

**West Bengal and Odisha: Cyclone Amphan destroyed homes, uprooted trees and flooded hundreds of villages**

<https://www.aljazeera.com/news/2020/05/amphan-aftermath-seawater-destroys-farmland-sundarbans-200525163714035.html>

"The Indian government has deployed soldiers to help with rescue and relief efforts after Cyclone Amphan hit the country's eastern coast last week. More than 20 rivers have breached their banks and seawater is seeping into farmlands in the Sundarbans mangroves region.

### **West Bengal: Amphan robs fisherfolk of their livelihood in Bengal village**

<https://www.thequint.com/news/india/cyclone-amphan-west-bengal-north-24-parganas-village-fisherfolk-have-lost-everything>

"As Cyclone Amphan ravaged through West Bengal on 20 May, the districts most affected were North 24 Parganas and South 24 Parganas in southern Bengal. As windspeeds crossed over 120 kmph, houses in these districts were destroyed, mud embankments and dams broken, and countless lives lost. The Quint visited the Atpukur village – a village of fisherfolk – like most villages in the Minakhan Assembly constituency of the North 24 Parganas district. What we saw was a picture of death, devastation and helplessness.

A three-year-old waits for his father a crowd of people stand outside Kalpana Mondol's small, thatched hut as The Quint's team approaches it. A side of the hut has been battered. Outside, Kalpana stands with her three-year-old son in her arms. On seeing us, Kalpana breaks down. Her husband, Gobindo Mondol, died on 20 May after a piece of asbestos slit through his neck during the cyclone. Gobindo, like most men in the village, was a fisherman who used to work as a daily wage labourer in Kolkata during the off-season. He'd returned to the village right after the lockdown as jobs became scarce in the city. Three days before the cyclone, on Sunday, 17 May, Gobindo had sent Kalpana to her parent's house. Kalpana was to return on the day of the cyclone, but her parents stopped her. She returned the day after, to Gobindo's bloodied, lifeless body, lying outside her house.

"This would not have happened had I been here," cries Kalpana. Meanwhile, her son, oblivious to the mourning, laughs and play around as Kalpana talks to us. "He's yet to realise what happened. He keeps saying that father has gone to the river to take a bath and will come back. If I cry, he hugs me and says that I have nothing to worry about. He keeps saying that he wants to take the boat out with his father, says Kalpana. Unsure of what the future holds, Kalpana now just wants a job.

### **West Bengal: Cyclone Amphan leaves behind broken houses, rotting fish**

<https://indiaclimatedialogue.net/2020/05/25/cyclone-amphan-leaves-behind-broken-houses-rotting-fish/>

"“What is the point in rebuilding our house, asks Santanu Halder, “when we know it will be torn down in the next storm? Would anyone want to do it? Making landfall with a wind intensity of 165-175 kilometres per hour, gusting up to 185 kmph, Cyclone Amphan flattened all mud huts as it raced up the Sundarbans and through Kolkata on the evening of May 20. Five days later, Halder pans his phone to show a scene of utter devastation in Mousuni, a village that faces the Bay of Bengal and was right next to the eye of the strongest cyclone since regular records began in 1982. You can see only the plinths of mud huts – the rest has been blown and washed away; all the trees are flattened; instead of the paddy crop that was standing when the cyclone arrived, you can only see puddles; dead fish cover pond surfaces – saltwater flooded the ponds and killed all the fish, which are rotting now.

Next to Mousuni and right on the mouth of the Hooghly – the westernmost distributary of the Ganga – Ganesh Chandra Das of Sagar Island says you should ask your questions quickly. There is still no electricity in the entire delta, four days after the storm he managed to charge his phone at a shop with a diesel generator after paying INR 10 (USD 0.13), and now the charge is running out. Das is the local coordinator of Sobuj Sangha (Green Group), a respected NGO that has been working hard to safeguard the residents of Sagar Island from sea level rise. “It all seems so meaningless now, he said, referring to the mangrove plantations he had proudly shown to this reporter last August. “The waves came right through those plantations and flattened all the huts and ponds and farms we were trying to protect.

The soil has turned salty. For at least three years, nothing can grow there. His own house has lost its asbestos roof. “All the brick and cement houses that had asbestos, tin or tile roofs are now roofless. We are staying in a tent, and we have no idea how long it will take to get a roof over our heads again. The monsoon is less than a month away. We can't stay in a tent then. We don't know what we'll do. Relief rushed The West Bengal government has moved relief material to the area, in the form of food, tarpaulin sheets for tents and bottled water. The mainland jetty to reach Sagar Island has collapsed in the cyclone, and ferry services are still suspended, but fishing trawlers are being used to transport relief material.

“We have received enough food and tarpaulin sheets for now, says Das. “We need more drinking water. We can't drink the pond water any more – it's salty and putrid. We also need a lot more disinfectant. It stinks of rotting fish everywhere, and an epidemic can break out any moment. This is a region where hundreds of thousands of migrant workers returned home as they lost their jobs due to the nationwide lockdown forced by Covid-19.

Thousands of them were quarantined in the same office, college and school buildings that have been used as cyclone shelters for the last two decades. As Cyclone Amphan barrelled towards West Bengal, the authorities moved around 200,000 residents to these same shelters as nothing else was available. The quick evacuation has saved thousands of lives. But being packed indoors with suspected Covid-19 patients endangers everyone. The evacuees want to go home, but there

is often no home to go to. They have started moving back in trickles and are rebuilding their mud huts. The heavy rain brought to northeastern India in the last hours of Cyclone Amphan has led to floods in the neighbouring state of Assam as well.

At the beginning of last week, the Assam Disaster Management Authority had decided that due to Covid-19, everyone evacuated due to floods this year would have double the space usually allocated – 7 square metres per head instead of 3.5. Now the authorities are struggling to implement the new norm with hardly any notice. Any point in rebuilding? In the meanwhile, those wanting to return to their erstwhile homes are asking the same question as Haldar – what is the point in rebuilding?

Apart from the danger of another cyclone in an area that has seen 26% intensification of cyclones in the past century, there is no livelihood option that any resident can see now. Their farmlands have turned salty and barren, their freshwater ponds are contaminated with sea water, and there is no industry in the area. Most of the residents were dependent on remittances that have been reduced to zero due to the lockdown. “I used to work as a mason in Kerala, says Haldar. “Like everyone else, I lost my job when Covid-19 broke out and the lockdown was announced. I spent the little savings I had getting back to my village. What do I do now?

I shall ring our contractor as soon as the lockdown is over and see if he will take me back. Nilanjan Ghosh, head of the Kolkata chapter in Observer Research Foundation, says the southernmost one-third of the Sundarbans has become uninhabitable, and around 1.5 million people need to be relocated. It is an argument he has been making for a decade now, but he has received no positive response from policymakers, who are afraid of the chaos such a move may cause. But with the sea rising in the area at a rate of 8 millimetres per year, with cyclones becoming more frequent and more severe as another result of climate change, and with the Ganga delta itself sinking due to silt being held back by numerous dams and barrages upstream, there may soon be no alternative but to depopulate a part of the world's largest mangrove forest.

### **West Bengal: Drive to Sundarbans sees paddy lands turned into fishing ponds by cyclone Amphan**

<https://theprint.in/india/drive-to-sundarbans-sees-paddy-lands-turned-into-fishing-ponds-by-cyclone-amphan/428701/>

"It's been five days since West Bengal was hit by cyclone Amphan. The 130-km stretch between Kolkata and the Sundarbans that is usually a feast for the eyes, with paddy fields, fish ponds and a lush green canopy, is now a wreck. Uprooted trees, mangled electric posts and flooded croplands are what one gets to see now. ThePrint's Madhuparna Das brings you some glimpses from the mangrove forest and the journey from Kolkata.

A villager in the Sundarbans' Jharkhali panchayat works on a breached embankment after Cyclone Amphan. Hundreds of electric posts were uprooted, leaving the village in darkness. Seawater entered the villages and flooded the cropland while it also left roads submerged. Villagers now fish on the land they used to cultivate. The heavy rain drenched all stocked grains. Women now try to dry these stocks.

### **West Bengal and Odisha: Amphan cyclone: IRDAI asks insurers to hasten settlement of claims**

<https://www.thehindubusinessline.com/money-and-banking/amphan-cyclone-irdai-asks-insurers-to-hasten-settlement-of-claims/article31668137.ece>

"The Insurance Regulatory and Development Authority of India (IRDAI) has directed insurers to hasten settlement of claims pertaining to the cyclone Amphan. In a circular, it said there were reports of loss of human lives and loss of belongings in the cyclone-affected districts, primarily in West Bengal and Odisha. It also wreaked havoc in Odisha, damaging power and telecom infrastructure. "Initiate immediate action to ensure that all reported claims are registered and eligible claims are settled expeditiously, the regulator said.

As per the circular, insurers have to nominate a senior officer to act as a nodal officer in the State concerned to liaise with the State administration to facilitate identification of policyholders among the deceased due to the cyclone. With regard to claims involving loss of life, where difficulty is experienced in obtaining a death certificate due to non-recovery of body, it asked the insurers to follow the process as in the case of the Chennai floods in 2015. "A suitably simplified process/procedure including relaxations in the usual requirements wherever feasible may be considered to expedite claims settlement, the circular said. With a view to adhering to the Covid-19 pandemic and limiting direct/indirect social contact, insurers have been advised to encourage their policyholders/claimants to adopt e-modes, wherever possible for correspondence. The staff must be duly sensitised to deal with policyholders/claimants with empathy and concern, it added. The insurance companies have also been asked to file State-wise progress reports on claims settled on weekly basis.

### **West Bengal: Cyclone Amphan: NDRF teams working round the clock to restore normalcy in West Bengal**

<https://www.financialexpress.com/india-news/cyclone-amphan-ndrf-teams-working-round-the-clock-to-restore-normalcy-in-west-bengal/1969052/>

"Specialised disaster management teams of the NDRF are rendering help in the massive clean-up operation in cyclone-hit West Bengal. The NDRF personnel, dressed in bright-orange outfits, are working round the clock to restore normalcy in the state, where Cyclone Amphan has thrown life

out of gear, flattening houses, uprooting trees and snapping power cables, senior officials of the force said. A total of 38 National Disaster Response Force (NDRF) teams have been deployed in various parts of the state, 19 alone in Kolkata, with sophisticated tools and equipment to speed up the rehabilitation work, said Nisheeth Upadhyay, an NDRF commandant.

“The cyclone has caused huge devastation in Bengal, not just in the coastal areas but in the state capital too. In the city, we are working alongside Kolkata Municipal Corporation officials, who are helping us with directions to the affected areas. “In the districts, too, our teams have shifted people from low-lying areas to safety, provided them with necessary medical aid, Upadhyay, the commandant of NDRF second battalion, told PTI. The battalion commandant also said that advance deployment of personnel in six districts of the state helped ensure minimal loss of lives. “We carried out the evacuation operation on time. Not just that, we used public address systems to carry out an awareness programme in local languages in rural areas before the cyclone struck. Fishermen in the coastal areas were told not to venture out into the sea, he noted. Upadhyay contended that almost all arterial roads in Kolkata and its adjoining districts have been cleared, and felled trees removed.

“The NDRF personnel are working all night with light-mounted helmets. The teams are equipped with modern tools and equipment, such as gasoline cutters, to carry out the relief work. We will do everything possible to ensure people are not inconvenienced. That's our job, he said. Vijay Sinha, the commandant of NDRF first battalion, said five teams from Patna, each consisting of 25-30 personnel, are undertaking restoration work on a war footing in Bengal with state-of-the-art equipment such as life detectors and victim location camera. “Upon suspicion that somebody is lying under debris, the personnel use life detector instruments which can detect the heart beat of a person. After detection, a two or three-inch hole is made in the heap and the VLC is inserted to locate and rescue a person lying under the rubble.

“These instruments had helped a lot while carrying rescue operation after a massive earthquake shook Nepal and Bihar in 2015, he told PTI. Sinha also said his team members are carrying MFR (medical first responder) kits with them to provide immediate medical assistance to pregnant women, or those suffering from cardiovascular diseases. Asked about the major challenges encountered by the NDRF in its operation, Upadhyay said, “We are exercising caution to ensure that our personnel, or for that matter the common people, do not get exposed to COVID-19. “Some people were initially reluctant to move to cyclone shelters, partly because they were scared of contracting COVID-19.

We successfully convinced them to shift to the camps, while also ensuring sanitisers and masks were available for their safety, he explained. Over 80 people died and lakhs were rendered homeless as cyclone Amphan cut a path of destruction through half-a- dozen districts of West Bengal, including state capital Kolkata, on Wednesday night, blowing away shanties, and swamping low-lying areas. The NDRF commandant further said that the state government lent

all possible help and support to the force to carry out the clean-up operation.

### **West Bengal: Open coast blamed for delta damage**

<https://www.telegraphindia.com/states/west-bengal/cyclone-amphan-in-bengal-open-coast-blamed-for-delta-damage/cid/1775590>

"Cyclone Amphan has devastated the coastal areas of South 24-Parganas freely as they were left unguarded by the felling of thousands of big trees and a part of mangrove forests by the mighty blows of Cyclone Bulbul in November last year. The green cover of the trees and the mangroves used to shield the coast. Officials and experts said the destruction wrought by Bulbul had aggravated the damage brought about by Amphan in the Sunderbans delta, including Namkhana, Moushuni and G-plot. According to official reports, at least one lakh homes were affected and 50,000 electric poles felled in South 24-Parganas on the afternoon of May 20. The officials said they were yet to assess the areas of trees and mangroves that had been damaged by Amphan.

“All large trees had fallen during Bulbul in November last year and so, Amphan got a clear route to destroy thousands of houses in our areas. During Bulbul, the presence of trees had saved us from such a destruction, said Saral Kumar Das, a resident of Moushuni Island and a non-teaching employee of a school there. “If you see sea-facing islands mainly Moushuni, Bakkhali and G-plot, there is no forest in the southern part. It was completely an unguarded open coast and there was no wall of forest to protect it from a cyclone, state pollution control board chairman Kalyan Rudra said. “However, the Sunderbans were saved from severe devastation as there was low tide when Amphan's landfall took place around 2.30pm on May 20, he added. Senior South 24-Parganas district officials said they had planted around 25 lakh trees last year but one year was too short for them to mature. “It is a fact that Bulbul had destroyed a large number of big trees and mangrove forests. Another cyclone hit the area again in a span of around six months. We had only one option: to plant more trees. We have planned to plant at least 50 lakh trees this year, South 24-Parganas district magistrate P. Ulaganathan said.

Forest department officers said Cyclone Bulbul had also hit mangrove forests in the Sunderbans and engendered the formation of several new beaches. “The damage caused to the mangroves by Amphan is yet to be assessed, said a forester. The foresters said the mangrove trees took years to grow up and there was no scope of new plantation in the mangrove areas. Jyotirindranarayan Lahiri, whose NGO Tepantarar Swapno is trying to assist the affected people in rebuilding their homes, said there was not a single house untouched by Amphan.

“Destruction of homes by Amphan is more than Bulbul only because of absence of shield of trees. There is no house in the coastal area which was not affected by Amphan, said Lahiri, who

also runs a little magazine in the area. The foresters have said the government should keep in mind the planting of such trees as mango, palm and dates which are rooted deep in coastal areas. "In most cases, we found out that the trees planted even in Calcutta are not deep-rooted and as a result, they fall in high numbers when a cyclone or storm strikes, said a forester.

### **West Bengal: In North 24 Parganas, Cyclone Amphan Leaves Thousands Homeless, Without Livelihood**

<https://thewire.in/environment/ground-report-cyclone-amphan-bengal-north-24-parganas>

"Our car made its halt at Sulkuni. Suddenly, it was not possible to advance any further. After walking for about a kilometre, we reached the bank of Dansa River, a branch of the Ichamati, only to find that Dansa river is actually three kilometres from there. One can spot rooftops floating at a distance. The land is completely submerged and hundreds of houses across the villages have been wiped out after Cyclone Amphan wrecked parts of West Bengal on Wednesday evening. Sulkuni is located 83 km from Kolkata, in Hasnabad of North 24 Parganas, which is one of the worst-hit districts. Amphan is the first super cyclone to form in the Bay of Bengal since 1999, and one of the fiercest to hit West Bengal in the last 100 years.

Sixty-seven-year-old Nishit Batabhyal, who lost his house and now living at his cousin's, told The Wire, "We lived an impoverished life all this while, but somehow were managing. This cyclone snatched our only house, snatched the food from our plate. Embankments which guard the Dansa river water from entering the villages and farmlands were breached in three areas in Sulkuni. Life has been halted in most parts of Hasnabad as the cyclone washed away roads, snapped electricity supplies and left many areas without basic utilities. Speaking over the phone to The Wire, a local school teacher, Chiranjeeb Maity of Sadharan Vidyamandir said, "Many people in that area are not getting food and water. Some government relief (flattened rice and jaggery blocks) are trickling in, but those are inadequate.

People did not just lose their homes; they also lost their livelihood all cattle are now dead. Thousands of houses have been washed away in the Sulkuni area alone. People are now living in highland areas, either under a tarpaulin or under the open sky. Hachini Bibi of Jamberia village has also lost her house. The woman has taken shelter at her father's house on the farthest corner of the same village. Twenty-nine-year-old Hachini used to work at a brick kiln while her husband worked as a daily wage labourer. "Ours was a mud house with an asbestos roof. It is completely destroyed. Many of our belongings are gone with it. We haven't received any help from the government yet. A panchayat member visited us, but offered no help, Hachini said. On the west side of Sulkuni, the road heads towards Hingaljanj. We stumbled upon a house which was reduced to rubble in Kadamtala village.

“I have never witnessed such a fierce storm in my life, said a 53-year-old Gobindo Das. His mud house was broken down the middle, roof blown away. The kitchen is a pile of rubble, as if it was bombed. A devastated Das said, “Look at that, can we ever rebuild this again? I don't think so. When the thatched roof was blown away, we ran out to take shelter in our neighbour's pucca house. Das further said that saline water from Dansa river has entered the village and submerged the farmland. This will make the land uncultivable for the longest time. “I have a small portion of land; you can see it's completely submerged now. We can't farm on this land now. This storm destroyed both our house and livelihood, Das said with teary eyes. At Mominpur village of Bashirhat II block, the picture was similar. There (Mominpur village) we met Bharat Das (52), who lost his only son Mahata on Wednesday evening. His expression empty, Bharat was wearing a white piece of clothing, the traditional outfit worn by Bengali Hindus when someone in their bloodline dies.

“I am handicapped; my son was 22 and the sole breadwinner of the family. But God took him away from us so that we suffer more, he said. Also read: ‘The Gods Can Simply Kill Us’: A Ground Report From a City that Weathered a Deluge On Wednesday evening, Mahata went to his neighbour's house to meet a friend, Suman Das. Minutes after he entered the house, a big tree next to their house fell, killing Mahata and severely injuring Suman and his father. Suman told us that his father Biswanath had been admitted to the Basirhat district hospital and the doctor has informed the family that he has a major injury on his waist and has fractured his hip bone. Suman has also suffered injuries; we noticed scratches and a deep cut over his shoulder and chest. “Neighbours came and pulled me out of the debris. They saved my life, Suman recalled. Samar Das, a cousin of Mahata's, told *The Wire*,

“The block development officer (BDO) called us to submit official documents for compensations. We have done that. He said, soon the money will be released. A local panchayat member visited the family and gave tarpaulins and rations to each of the houses. Swapan Das's house in Chamapapukur gram panchayat was also damaged. The thatched roof flew away leaving the bamboo house in tatters. Swapan, along with his wife and daughter took shelter in Mominpur primary school, located down the road. “We are so poor that it is impossible for us to build our house again. I am begging the government to help us or else we all will die, said Swapan.

We visited Mominpur primary school, where around 22 people are staying since Wednesday afternoon. Locals have arranged food and water for these evacuees. Shamoli Das, a resident of Chamapapukur gram panchayat said, “Nothing is left in our house, everything is gone. Our home has been reduced to debris. Shamoli's husband Shadhan took us to the spot to show the remains of their house. The house had crumbled down to the ground. “We don't know where we will go. Some of the houses can be rebuilt, we can't even do that. After this, we might need to beg for a living, said Shadhan. Further, at the end of the road, we spotted what remains of Anup Das's

house. We could only see a brown almirah with broken pink doors, a large trunk, a floor mat, and a few clothes, all out in the open.

The family has taken shelter elsewhere. Das is a daily wage labourer. “For the past two months there was absolutely no income because of the lockdown. On top of that we lost our house in this storm. What is the point for us to be alive? Down the coastline, we visited Chamapukur railway station and found that the gusty winds had ravaged the small station and virtually uprooted the platform shed. In our 250-km trip, we saw hundreds of trees fallen, electric poles uprooted and overhead wires snapped all along the state highway, resulting in power cuts and communication disruption at Duttapukur and Hingalganj. Bangla Sanskriti Mancha, a social advocacy group, along with other local social welfare organisations, have created a network to distribute relief material. “We are trying to reach to the most vulnerable with our local contacts and provide them basic relief material like drinking water, and dry ration, said Samirul Islam, secretary Bangla Sanskriti Mancha. As of Saturday evening, the official figure of casualties due to the calamity stood at 82.

The West Bengal government on Saturday sought the support of the Indian Army, railways, and ports for restoring essential infrastructure and services in the cyclone-ravaged areas of the state. In a series of tweets the state home department said that the state government has mobilised maximum strength in a unified command mode for immediate restoration of essential infrastructure and services.

### **West Bengal: Homes Smashed, Crops Ruined: Sundarban Farmers Worst-Hit By Amphan**

<https://www.thequint.com/videos/news-videos/crops-damaged-land-infertile-and-livelihoods-lost-sundarban-farmers-worst-hit-by-amphan>

"Cyclone Amphan made landfall in West Bengal on 21 May, leaving behind a trail of destruction along the coastline. Lives lost, homes smashed, trees uprooted, losses worth thousands of crores – the aftermath of Amphan was unimaginable. The fragile delta of Sunderbans, a UNESCO world heritage site, is one of the worst affected by Cyclone Amphan, After Amphan made landfall, the sea water breached mud embankments and entered into villages, submerging acres of agricultural land and ponds, destroying crops and killing the fresh water fish. The salty water has rendered the land infertile and it will be several years before these farm lands can be used for cultivation again. “Close to 2,500 people are severely affected. Our fields have been destroyed, crops have been destroyed. The fish have died. Everything is lost. Nobin, Resident of Madhya Gurguria village,

Lost his farm Land In Amphan Sunderbans, the world's largest mangrove wetland, is a unique place. It is the delta where River Ganga enters the sea. It stretches across southern Bengal and a huge portion of it falls in neighbouring Bangladesh. Sunderbans is made of several smaller islands and about 45 lakh people call it their home. Lakhs of farmers are estimated to have been

hit by Amphan. These villages had faced the fury of Cyclone Aila in May 2009. They had seen their homes, their farm lands and their source of livelihood get ravaged. It took them more than a decade to rebuild their lives, only to see a bigger horror unfold. 'We Have Lost Everything' Through Swaraj Abhiyan president Yogendra Yadav's team, The Quint was able to hear the voices of residents of Madhya Gurguria village, which has faced the fury of Amphan. "This is nothing like Aila or Bulbul. Houses are damaged, crops are ruined, the fish have died, trees are uprooted. Acres of land are under water now. Vegetables in the field are completely destroyed. We have lost everything. We can't fathom the extent of the losses. Subodh, Resident of Madhya Gurguria village, Lost his farm Land In Amphan

### **West Bengal: What a week's disasters tell us about climate and the pandemic**

<https://www.moneycontrol.com/news/world/what-a-weeks-disasters-tell-us-about-climate-and-the-pandemic-5308601.html>

"The hits came this past week in rapid succession: A cyclone slammed into the Indian megacity of Kolkata, pounding rains breached two dams in the Midwestern United States, and on Thursday came warning that the Atlantic hurricane season could be severe. It all served as a reminder that the coronavirus pandemic, which has killed 325,000 people so far, is colliding with another global menace: a fast-heating planet that acutely threatens millions of people, especially the world's poor. Climate change makes extreme weather events more frequent and more intense. Now, because of the pandemic, they come at a time when national economies are crashing and ordinary people are stretched to their limits. Relief organizations working in eastern India and Bangladesh, for instance, say the lockdown had already forced people to rely on food aid by the time the storm, Cyclone Amphan, hit. Then, the high winds and heavy rains ruined newly sown crops that were meant to feed communities through next season.

"People have nothing to fall back on, Pankaj Anand, a director at Oxfam India, said in a statement Thursday. The worst may be yet to come. Several other climate hazards are looming, as the coronavirus unspools its long tail around the world. They include the prospect of heat waves in Europe and South Asia, wildfires from the western United States to Europe to Australia, and water scarcity in South America and southern Africa, where a persistent drought is already deepening hunger. And then there's the locusts. Locusts. Abnormally heavy rains last year, which scientists say were made more likely by the long-term warming of the Indian Ocean, a hallmark of climate change, have exacerbated a locust infestation across eastern Africa. Higher temperatures make it more inviting for locusts to spread to places where the climate wasn't as suitable before and in turn, destroy vast swaths of farmland and pastures for some of the poorest people on the planet.

While the risks are different from region to region, taken together, "they should be seen as a sobering signal of what lies ahead for countries all over the world, a group of scientists and economists warned this month in an opinion piece in Nature Climate Change. The impacts will

not be equal, though, they added. They stand to exacerbate long-standing inequities, the experts said, and “put specific populations at heightened risk and compromise recovery. All those extreme weather hazards are made more frequent and intense by the accumulation of greenhouse gases in the atmosphere, which drives up temperatures on land and in the sea.

The lockdowns around the world have resulted in a sharp drop in greenhouse gas emissions, but the decline has been nowhere near enough to shake loose the thick blanket of gases that already wraps the planet. And even if lockdown measures continued for the next several months, global carbon emissions would drop by between 4% to 8% from last year, according to a range of projections carried out by researchers, the latest of them published in *Nature Climate Change* last week. As punishing as that could be, socially and economically, it would not make a dent in overall warming trends.

The impact of the accumulated warming is already felt by those who were in the eye of Cyclone Amphan this week: those who live in the delta regions of eastern India and Bangladesh, and who are at the mercy of intensifying heat waves, sea level rise, storm surges and super cyclones like this one. In rural Bangladesh, for example, the storm punched through embankments. Seawater ate the paddy fields. Mud and thatch homes collapsed. The slow burn of climate change has increasingly made it tough for many to make a living farming and fishing, as generations had before them; many workers had migrated to urban areas nearby to earn a living. The lockdown has put an end to that coping strategy. Migrant workers in India have been trying to head home in droves. Traditional ways of coping during storms are now more dangerous, too. Evacuating people to cyclone shelters has saved hundreds of thousands of lives in past storms, but aid workers now worry that the virus could spread quickly in shelters.

In India, the city of Kolkata, which was pummeled by the cyclone, is repeatedly cited as one of the most vulnerable to the cumulative effects of climate change, all the more so because of poor urban planning. Many of its 14 million residents live in badly cramped conditions, and hunger remains common. The United Nations Development Program this week warned that global human development, which takes into account education, health and living standards, was set to decline this year “for the first time since the concept of human development was introduced in 1990. The extreme weather events of the last few days, coming on top of the coronavirus pandemic, throw into sharp relief, said Corinne Le Quéré, a climate scientist at the University of East Anglia in England, the perils of underestimating the impact of compounding risks.

Economic recovery policies that governments enact after the pandemic lifts, she said, would impact the trajectory of emissions for decades to come. “Reconstruction post COVID-19 should be shaped in a way that reduces our vulnerability, she said. “That means both to prepare for extreme climatic risks, and to reduce emissions that underpin the climatic risks.

### **West Bengal: Cyclone Amphan leaves behind trail of destruction, 12 dead**

[https://www.business-standard.com/article/current-affairs/cyclone-amphan-live-updates-west-bengal-odisha-death-toll-damages-weather-forecast-cyclone-live-status-coronavirus-120052100149\\_1.html](https://www.business-standard.com/article/current-affairs/cyclone-amphan-live-updates-west-bengal-odisha-death-toll-damages-weather-forecast-cyclone-live-status-coronavirus-120052100149_1.html)

"Extremely severe cyclone 'Amphan' has killed at least 12 persons and ravaged Kolkata and several parts of West Bengal as it left behind a trail of destruction by uprooting trees, destroying thousands of homes and swamping low-lying areas of the state. While a man and a woman were killed when trees came crashing down on them in North 24 Parganas district, a 13-year-old girl died in a similar incident in adjoining Howrah, officials said.

**West Bengal and Odisha: Cyclone 'Amphan' batters Bengal, Odisha as 650,000 evacuated**

[https://www.business-standard.com/article/current-affairs/cyclone-amphan-batters-bengal-odisha-as-6-5-lakh-evacuated-3-dead-120052100037\\_1.html](https://www.business-standard.com/article/current-affairs/cyclone-amphan-batters-bengal-odisha-as-6-5-lakh-evacuated-3-dead-120052100037_1.html)

"An extremely severe cyclone packing winds of up to 190 kmph Wednesday rampaged through coastal Odisha and West Bengal, dumping heavy rain, swamping homes and farmland, and leaving at least three people dead, officials said. While man and a woman were reported killed when trees came crashing down on them in North 24 Parganas district of West Bengal, a 13-year-old girl died in a similar incident in adjoining Howrah. No casualties have been reported from Odisha yet. West Bengal Chief Minister Mamata Banerjee, who is monitoring the situation from Nabanna, the state secretariat, however, claimed at least 10-12 people lost their lives.

"Area after area has been ruined. I have experienced a war-like situation today. At least 10-12 people have died. Nandigram, Ramnagar...the two districts of North and South 24 Parganas are destroyed," she said. After making landfall at 2.30 p.m. between Digha in West Bengal and Hatiya Island in Bangladesh, cyclone Amphan cut a swathe through the coastal areas, flattening fragile dwellings, uprooting trees and electric poles. At least 6.58 lakh people were evacuated in West Bengal and Odisha before the cyclone struck.

"The forward sector of the wall cloud region is entering into land in West Bengal. The intensity of the cyclone near its centre as the landfall process started was recorded at 160-170 kmph, gusting to 190 kmph," the weather department said. NDRF chief S N Pradhan told a press conference in New Delhi that 20 teams of the federal disaster response force had already begun road clearing operations in Odisha, while the 19 units deployed in West Bengal were shifting people to safety. Quoting figures made available by the two states, Pradhan said over 5 lakh people were evacuated in West Bengal and more than 1.58 lakh in Odisha. TV footage showed gigantic tidal waves crashing into a seawall in Digha, close to the landfall site. Thick sheets of rain blurred the vast coastline in the two states and surging waters engulfed mud-and-thatch houses, flattening them in a trice.

Heavy machinery was moved in to clear the roads blocked by falling trees. A video clip of an under-construction Kolkata skyscraper showed huge aluminium sheets flying like bird feathers in air. India Meteorological Department (IMD) Director General Mrityunjay Mohapatra, who jointly addressed the media with Pradhan, said gale-strength winds speeding at 160-170 kmph were pounding South and North 24 Parganas and East Midnapore districts and could be gusting up to 185 kmph. He said the wall of the eye of the monster cyclone, the most explosive part of a cyclonic system, triggered copious rain in the three districts.

The eye of the storm itself was 30 km in diameter, he said. Mohapatra said the intensity of the rain and winds accompanying it could deceptively look like ebbing away briefly, but will surge afresh once the rear sector of the storm has reached the landmass. The whole cyclonic system reached the landmass by 7 pm, before moving forward in fury. Reports arriving in Kolkata from North and South 24 Parganas and East Midnapore said roofs of thatched houses were blown away, electric poles got twisted and hundreds of trees broken and uprooted. Streets and homes in low lying areas of Kolkata were swamped with rainwater. Alipore in central Kolkata recorded a massive 222 mm of rainfall and Dumdum 194 mm between 8 am and 8:30 pm. Even when the rain stopped in most parts of Kolkata after 9 pm, high-velocity winds continued to sweep the metropolis and its satellite towns.

Almost the entire city was plunged into darkness since the evening as electric supply either got snapped due to rain and wind or was suspended as a precautionary measure. Cell phone services were disrupted in many places. Despite losing its force a bit since Tuesday, the storm, which was categorised as super cyclone at one point of time, left the two eastern states on edge as it hollered on its destructive path. Mamata Banerjee said the enormity of the devastation will become clearer by Thursday when the storm will have passed over the state. In Odisha, intense rainfall was recorded in several areas of Puri, Khurda, Jagatsinghpur, Cuttack, Kendrapara, Jajpur, Ganjam, Ganjam, Bhadrak and Balasore districts since Tuesday.

The rains and high-velocity winds ebbed away by late Wednesday night but not before causing massive damage to standing crops, plantations and infrastructure. Tidal surge of up to five metres occurred in North and South 24 Parganas and East Midnapore districts of West Bengal, inundating vast tracts of land, officials said. The turbulence will likely extend to Assam and Meghalaya, triggering heavy to very heavy rain on Thursday. Mohapatra said since the time the depression formed over the Bay of Bengal on May 20 till the cyclone made the landfall, the IMDs predictions about the path it will take and the timing was accurate and helped the disaster response machinery strategise and execute the plans to minimise the damage effectively. The cyclonic storm will get weaker while crossing over Nadia and Murshidabad in West Bengal later tonight before entering Bangladesh as a deep depression and dissipating.

**West Bengal: Cyclone Amphan to make landfall anytime from 4 pm onwards**

<https://indianexpress.com/article/india/cyclone-amphan-bengal-kolkata-odisha-live-updates-weather-forecast-6417477/>

"Amphan' is likely to make a landfall somewhere between Digha and Hatiya islands in Bangladesh close to the Sunderbans, a UNESCO World Heritage Site, between afternoon and evening of Wednesday, India Meteorological Department (IMD) said. The intensity near the centre of the storm was 170 kmph to 180 kmph gusting to 200 kmph, the weatherman said, adding gale-force winds of 110-120 kmph will slam Kolkata when the cyclone passes over it later in the day, before weakening further into a cyclonic storm over Nadia and Murshidabad in West Bengal.

### **West Bengal: Big Waves, Rain At Site Of Cyclone Amphan's Landfall In Bengal**

<https://www.ndtv.com/india-news/cyclone-amphan-watch-big-waves-rain-at-site-of-cyclone-amphans-landfall-in-west-bengal-2231912>

"Heavy rain and crashing waves were seen at Digha in West Bengal this morning as Cyclone Amphan, the fiercest storm over Bay of Bengal in years, advanced towards the Indian coast. Amphan, which had developed into a super cyclone on Monday, has weakened into an extremely severe cyclonic storm, and officials at Digha hoped its intensity would reduce further after landfall. As NDTV reported from Digha beach, big waves were a sign of the approaching storm. Digha is in East Midnapore, which is among the seven districts expected to take a direct hit from the cyclone. Amphan is likely to strike the coast with winds at the speed of 180 kilometres per hour. Over 50,000 have been evacuated to safety in the town, amid challenges posed by the need for physical distancing because of the coronavirus pandemic.

This is the first cyclone in the middle of a pandemic, officials said, talking of the dual challenge. Kolkata, less than five hours from the beach town, also saw rain and winds in the morning. All operations have been suspended at Kolkata Airport till 5 am tomorrow. Only special flights are operating in the covid lockdown. The Indian Meteorological Department, which has issued an "'orange message'" for West Bengal, warned of extensive damage in Kolkata, Hooghly, Howrah, South and North 24 Parganas and East Midnapore districts. Markets are mostly closed in Kolkata and adjoining areas. Heavy rain and gales are expected as the cyclone moves through Bengal. The Indian Navy has despatched a diving team to help with relief or rescue operations.

### **West Bengal and Odisha: Fishing activities suspended till May 20**

<https://www.bignetwork.com/news/265138704/fishing-activities-suspended-in-west-bengal-odisha-till-may-20>

"India Meteorological Department (IMD) on Tuesday issued a warning to suspend all fishing activities in West Bengal and Odisha till May 20, in the wake of super cyclone Amphan. Several fishermen at Odisha's Bhadrak were seen parking their boats at the dock today morning. Notably, Bhadrak is one of the six districts expected to be affected due to the cyclone. Notably, 15 NDRF teams have been deployed in different districts of Odisha. They are already in the field and are creating awareness among public and fishermen on evacuation and safety measures. Five teams are also ready in Mundali to meet the exigency. Chief Secretary, Odisha and Additional Chief Secretary, West Bengal apprised National Crisis Management Committee (NCMC) of preparatory measures taken by them. They informed that evacuation of people from the low lying areas is being carried out, Ministry of Home Affairs (MHA) said in the letter. "36 National Disaster Response Force (NDRF) teams are currently deployed in both states. Rescuerelief teams of ArmyNavy along with shipsaircraft of Navy, Air ForceCoast Guard have been put on standby," it added.

**West Bengal and Odisha: Cyclone Amphan latest updates: Fresh alert for Bengal, Odisha; landfall on Wednesday**

<https://www.hindustantimes.com/india-news/cyclone-amphan-latest-updates-fresh-alert-for-bengal-odisha-landfall-on-wednesday/story-AxWZHV5bt0DhUYPm9M5yNI.html>

"The eastern coastal states of West Bengal and Odisha are bracing for Cyclone Amphan, which is expected to make the landfall on Wednesday. Amphan turned into a Super Cyclone, the first over the Bay of Bengal in two decades, packing in winds gusting at a speed of nearly 200 kmph. The Odisha government has said that it is prepared to evacuate 11 lakh to 12 lakh people. Cabinet Secretary Rajiv Gauba will chair a meeting of the National Crisis Monitoring Committee at 12 noon today, reported news agency?ANI.

Here are the latest developments as the cyclone approaches:

1. Cyclone Amphan stood about 600 km south of Paradip (Odisha) and 750 km south-southwest of Digha (West Bengal) at 11.30 pm on Monday, the India Meteorological Department said.
2. Amphan is expected to make the landfall between Digha in West Bengal and Hatiya Islands in Bangladesh on Wednesday evening.
3. In a fresh alert for Odisha and West Bengal, the India Meteorological Department (IMD) on Tuesday morning said that it is likely to move towards West Bengal and weaken into an extremely severe cyclonic storm.
4. Union Home Secretary Ajay Bhalla spoke to Chief Secretaries of West Bengal and Odisha on Monday in view of arrangements and preparedness against the Super Cyclone.

5. The National Disaster Response Force (NDRF) has deployed 37 teams in the coastal areas of the two states, its chief S N Pradhan said.
6. Prime Minister Narendra Modi reviewed the situation with Union Home Minister Amit Shah and top government officials in New Delhi on Monday.
7. The super cyclonic storm is moving at a speed of seven kmph, said the IMD. Jagatsinghpur, Kendrapara, Bhadrak and Balasore in Odisha are likely to experience heavy rainfall accompanied by high-velocity winds, particularly on May 19 and 20, it added.
8. Disruption of rail and road link are likely at several places but that will not have a major impact on human lives as only skeletal traffic ply the roads and railway tracks due to the Covid-19 lockdown.
9. The IMD has issued an orange alert for coastal West Bengal and Odisha, where it said widespread damage is expected.
10. Cyclone Amphan is only the second super cyclone over the Bay of Bengal after the one that savaged Odisha in 1999, claiming nearly 10,000 lives.

**Cyclone Amphan: Fishing activities suspended in Indian states of West Bengal, Odisha till May 20**

<https://www.hindustantimes.com/india-news/cyclone-amphan-fishing-activities-suspended-in-west-bengal-odisha-till-may-20/story-xea993CLa7thWMzFxf6J1O.html>

"The India Meteorological Department (IMD) on Tuesday issued a warning to suspend all fishing activities in the states of West Bengal and Odisha till May 20, in the wake of super cyclone Amphan. Several fishermen at Odisha's Bhadrak were seen parking their boats at the dock today morning. Notably, Bhadrak is one of the six districts expected to be affected due to the cyclone. Notably, 15 National Disaster Response Force (NDRF) teams have been deployed in different districts of Odisha. They are already in the field and are creating awareness among public and fishermen on evacuation and safety measures. Five teams are also ready in Mundali to meet the exigency. Chief Secretary, Odisha and Additional Chief Secretary, West Bengal apprised National Crisis Management Committee (NCMC) of preparatory measures taken by them. They informed that evacuation of people from the low lying areas is being carried out, Ministry of Home Affairs (MHA) said in the letter. "36 National Disaster Response Force (NDRF) teams are currently deployed in both states. Rescue & relief teams of Army & Navy along with ships & aircraft of Navy, Air Force & Coast Guard have been put on standby, it added.

**West Bengal: Super cyclone Amphan May hit Bengal on Wednesday, PM meeting at 4 pm**

<https://www.ndtv.com/india-news/cyclone-amphan-now-extremely-severe-likely-to-intensify-further-to-super-cyclone-says-met-department-imd-2230607>

"Cyclone Amphan turned in to a "super cyclonic storm" this morning, the weather office said, hours after it intensified in to an "extremely severe cyclonic storm". Two states- Bengal and Odisha - have been alerted over the storm, which is expected to make a landfall in Bengal on Wednesday. "The Extremely Severe Cyclonic Storm 'AMPHAN' (pronounced as UM-PUN) intensified into Super Cyclonic Storm at 1130 IST of today, the 18th May, 2020 (sic)," the India Meteorological Department or IMD tweeted this afternoon. Very heavy rainfall is also likely in , Sikkim, Assam and Meghalaya till Wednesday, apart from Odisha and Bengal, the IMD said in a statement.

The landfall in Bengal is expected a time when the country is fighting against coronavirus, which has affected more than 96,000 people, killed more than 3,000. - Prime Minister Narendra Modi will hold a meeting today at 4 pm to review the preparedness; Union Home Minister Amit Shah tweeted. "To review the arising cyclone situation in various parts of the country, PM @narendramodi ji will chair a high level meeting with MHA & NDMA, today at 4pm (sic)," he wrote. - A year after it was hit by Cyclone Fani, one of the worst storms in decades, Odisha is prepared to evacuate over 1 million people, according to the state officials. Twelve coastal districts - Ganjam, Gajapati, Puri, Jagatsinghpur, Kendrapara, Bhadrak, Balasore, Mayurbhanj, Jajpur, Cuttack, Khurda and Nayagarh - are under a close watch. - Odisha Chief Minister Naveen Patnaik has directed the officials concerned to prepare a plan for relocating people living in vulnerable areas to safer places along with an early restoration of water supply and power infrastructure. The state has set a zero casualty target.

"As always, saving lives is our priority. We should put our best efforts to save every precious human life," Mr Patnaik told top officials, according to news agency PTI. - Seventeen teams of the National Disaster Response Force (NDRF) are on duty in Odisha and Bengal. Seven teams have been deployed in six districts of Bengal and 10 teams are on duty in Odisha. Each team has 45 members. - Northern parts of Odisha are likely to be more affected due to the cyclone, IMD Director General Mrutyunjay Mohapatra was quoted as saying by news agency PTI. Heavy rain is likely to hit parts of Tamil Nadu and Karnataka. - Fishermen have been asked not to venture into coastal areas till Wednesday. - Those living in coastal areas will have to brace up for heavy rain and high-velocity winds, the weather office has said. The high-velocity winds may cause damage to houses, crops, plantations and orchards, and power infrastructure, the IMD has said, adding that rail traffic may be affected. Only special trains are allowed to run during the lockdown. - West Bengal Home Secretary Alapan Bandopdhyay said that the state is prepared to deal with the situation. Disaster management teams were dispatched to cyclone shelters in the coastal areas and other places for rescue and relief operations where social distancing norms would be strictly followed, he said, due to the COVID-19 pandemic. - On Saturday, the National Crisis Management Committee (NCMC) met under Cabinet Secretary Rajiv Gauba to

review the preparedness for minimising the loss of lives and property. Last year, Odisha was praised for its handling of Cyclone Fani (pronounced as Foni) and ensuring minimum loss of lives. The state had relocated over 11 lakh people across 13 districts to safety.

**West Bengal and Odisha: Cyclone Amphan to intensify into super cyclone! Severe cyclone likely to hit Odisha, Bengal, warns IMD**

<https://www.financialexpress.com/lifestyle/science/cyclone-amphan-to-intensify-into-super-cyclone-severe-cyclone-likely-to-hit-odisha-bengal-warns-imd/1962491/>

"The IMD and Odisha government have warned fishermen have been advised not to go on fishing into the north bay of Bengal along and off the coasts of West Bengal-Odisha from May 18th to 21st. The fishermen who are at sea now have been told to return to the shore by May 17th. Cyclone Amphan intensified into a super cyclone! The Amphan cyclone has transformed into a super cyclone at 1130 IST today. Prime Minister Narendra Modi is all set to hold a high-level meeting to analyse the state of preparations done by the agencies and different departments to check the cyclone from causing maximum damage. Stating that the cyclonic 'Amphan' is set to intensify into a 'super cyclone' by the evening of May 18, the Union Home Ministry has said that it is likely to hit the West Bengal and Bangladesh coasts, as a very severe cyclone with a wind speed clocking up to 185 km per hour on May 20, news agency PTI has reported.

The MHA has issued an advisory to the state governments of West Bengal and Odisha governments- only Indian states likely to be affected by the Amphan cyclone. The ministry has said that 'Amphan' has been spotted over the central parts of South Bay of Bengal along with the adjoining central Bay of Bengal. The cyclone has been moving northwards with a speed of up to 13 kmph in the last six hours and is likely to make a landfall at 0530hours IST on Monday, the ministry has said in its advisory.

Earlier, the Indian Meteorological Department had issued a strict warning over cyclone 'Amphan.' The weather department had said that a very severe cyclonic storm over central parts of South Bay of Bengal has moved north-northeastwards in the last 6 hours. The IMD too had alerted that the cyclone will intensify further into an extremely severe cyclonic storm around 0230 hrs today over the central parts of South Bay of Bengal along with adjoining the central Bay of Bengal. The IMD has also predicted the cyclone to move further in north-northeastwards at a rapid pace across the northwest Bay of Bengal. The cyclone is likely to cross West Bengal and lay its landfall between Digha in West Bengal and Hatiya Islands in Bangladesh during the afternoon/evening of May 20 as a very severe cyclonic storm. IMD warning for West Bengal: Storm surge of around 4-5 metres above astronomical tide is likely to inundate low lying areas of South and North 24 Parganas and 3-4 metres over the low lying areas of East Medinipur district of West Bengal during time of Cyclone Amphan landfall.

Cyclone Amphan alert Odisha Special Relief Commissioner Pradeep Kumar Jena said that the state is fully prepared to deal with any situation arising out of cyclone Amphan. Rapid response teams, fire teams, National Disaster Response Force (NDRF) have been moved to the districts which can be affected by Amphan, Jena said. Odisha Special Relief Commissioner PK Jena has said that widespread rainfall is expected in coastal Odisha on May 19 i.e Tuesday. On May 20, there could be heavy to very heavy rainfall in northern districts of Odisha, with wind speed reaching up to 110 kmph in certain parts of Bhadrak, Kendrapara and Jagatsinghpur, as per ANI report.

The India Meteorological Department (IMD) has issued 'Heavy Rainfall' warning for several districts of Odisha, West Bengal, Sub-Himalayan West Bengal, and Sikkim, and Assam and Meghalaya. In seven districts of Odisha and six districts of West Bengal, a total of 37 NDRF teams have been deployed, of which 20 teams will be actively deployed by the end of this day and 17 teams are on standby, SN Pradhan, Director General of National Disaster Response Force (NDRF) was quoted as saying by ANI. Prime Minister Narendra Modi will be chairing a high-level meeting with Ministry of Home Affairs; NDMA today at 4 PM, Home Minister Amit Shah was quoted as saying by PTI. When cyclone Amphan will hit the Indian coastline, heavy rain and high-velocity winds are likely to be seen in coastal Odisha and West Bengal.

The IMD and Odisha government have warned fishermen have been advised not to go on fishing into the north bay of Bengal along and off the coasts of West Bengal-Odisha from May 18th to 21st. The fishermen who are at sea now have been told to return to the shore by May 17th. Also, NDRF personnel has been deployed to West Bengal and Odisha on Sunday. 11 lakh people are likely to be affected by the cyclone and the NDRF is prepared to undertake the massive evacuation. Ten teams of NDRF have been deployed in seven districts in Odisha. Puri, Jagatsinghpur, Kendrapara, Jajpur, Bhadrak, Balasore, and Mayurbhanj are likely to be affected by the cyclone 'Amphan.' Odisha 's twelve coastal districts Ganjam, Gajapati, Puri, Jagatsinghpur, Kendrapara, Bhadrak, Balasore, Mayurbhanj, Jajpur, Cuttack, Khurda, Nayagarh have been put on high alert.

**West Bengal: Amphan cyclone tracker: Odisha begins evacuation, PM to chair NDMA meeting**

<https://www.thehindu.com/news/national/amphan-cyclone-tracker/article31612695.ece>

"Cyclone 'Amphan' has intensified into an extremely severe storm and is all set to unleash heavy rains coupled with high-velocity winds in coastal Odisha, prompting the State government to prepare for the possible evacuation of 11 lakh people. 37 NDRF teams to combat dual challenge of cyclone Amphan, COVID-19. The NDRF has enhanced its strength to a total of 37 teams, with the addition of 20 more, to combat the "dual challenge of cyclone 'Amphan' amid the coronavirus pandemic, the chief of the federal contingency force said on Monday. S N Pradhan, the National Disaster Response Force (NDRF) Director General, said the force is fully

geared with all the equipment and paraphernalia to face the “developing situation which the Indian Meteorological Department has said will turn into a very severe cyclonic storm by this evening and continue to be so for sometime“. “A total of 37 teams have been deployed by NDRF in West Bengal and Odisha, out of which 20 teams are actively deployed and 17 are on standby in the two states, Pradhan said in a video message. A single NDRF team has a strength of about 45 personnel.

**West Bengal: Hilsas in galore in the Digha Sea now, but no permission to catch amid lockdown restrictions**

<http://www.uniindia.com/hilsas-in-galore-in-the-digha-sea-now-but-no-permission-to-catch-amid-lockdown-restrictions/east/news/1995198.html>

"The silver crop of the seas - Hilsa fish, valuable for Bengali plates, are alluring the only visitors in the lockdown period -the police and the Nuliah's near the vast spread out of the Digha Sea Beach, a senior police officer said. A fisherman said that the sea being clean and green with no waves, the shoal of fishes are practically dancing on beaches and this has never been seen before. Neither the trawlers, not even fishermen's boats have dared to invade the sea for the last three months due to lockdown restrictions resulting in the free movement of such fishes, resulting in their faster growth and big size, the fishermen said.

**West Bengal: The sunk vessels threatened the local fishes and other aquatic biodiversity, and in turn, the livelihoods of thousands of fishermen in the area**

<https://www.downtoearth.org.in/news/pollution/series-of-ash-barges-sinking-raises-concerns-on-sundarbans-ecology-71042>

"Environmental experts and fisheries organisations have flagged a serious threat to the ecology of the Indian Sundarbans due to recent incidents of fly ash-filled barges capsizing and sinking in the Hooghly river. Two fly ash-filled barges sank on April 9, 2020, within a range of 30 kilometres one on the Hooghly close to Tangrachar village of Kulpi block in morning; the second on the Muriganga river, that meets the Hooghly near Sagar island, in the afternoon. On April 18, another barge sank near Kakdwip in the South 24 Paraganas district. Before this, two other fly ash-filled vessels sank in the Hooghly in February and March. Nearly 100 Bangladeshi barges each weighing 600-800 tonnes regularly traverse through Indian waters, about 100 kilometres adjacent to the Indian Sundarbans, taking fly ash from Indian thermal power plants to Bangladesh where the ash is used as raw materials for cement production.

A fishery association wrote to Chief Minister Mamata Banerjee recently, alleging that seeping fuel and fly ash from the sunk vessels threatened the local fishes and other aquatic biodiversity, and in turn, the livelihoods of thousands of fishermen in the area. The letter was written by Dakshinbanga Motsojibi Federation (DMF) South Bengal Fisheries Association

on April 20. The letter said that “the river is getting polluted due to mixing of various toxic elements embedded in fly ash, which, in turn, may endanger those who would be consuming such fishes. It said the area fell within the Hilsa sanctuary declared by the government.

“Most of the barges carrying fly ash to Bangladesh are quite old, ill-maintained, not fit for such a long journey and hence often cause accidents. The government should ban plying of these vessels through the Sundarbans, which is an ecologically sensitive area, Milan Das, DMF secretary, said. Experts point out that apart from causing river pollution, the toxic chemicals and fuel released due to accidents may also affect the mangroves in the area. “Once the vessels meet with accidents and get submerged, it is expected that the fly ash will gradually come out and get deposited on the river bed, Arunava Majumdar, a retired scientist of All India Institute of Hygiene and Public Health, said. “Gradually, the pollutants within fly ash including heavy metals like lead, chromium, magnesium, zinc, arsenic and others get mixed up with the water and cause damage to both aquatic flora and fauna including fish, he added.

An official of the Kolkata Port Trust (KPT) said that being of less engine strength; barges often ply slower than the minimum mandated speed of seven knots (about 13 km) per hour, and hence cannot counter any suddenly-occurring adverse situation. “Moreover, they hardly take an Indian pilot in Indian waters, which is mandatory, and hence face navigational problems, the expert added. The KPT, which is the custodian of the river, admits pollution from such accidents but points out that the onus lies with the Inland Waterways Authority of India (IWAI), which regulates the transboundary barge movement. “We have already taken up the issue with IWAI, Vinit Kumar, chairman of KPT, told this reporter. “We have asked the Indian agents of the barges to immediately take care of the issue. But the lockdown situation is perhaps causing delay, LK Rajak, director IWAI, Kolkata, said. KPT sources, however, said that normally, the submerged barges were not taken out of the water because of the cost involved, unless they created problem in the navigational channel.

### **West Bengal: COVID-19, bad weather affect livelihoods in Bengal’s Sundarbans**

<https://www.downtoearth.org.in/news/governance/covid-19-bad-weather-affect-livelihoods-in-bengal-s-sundarbans-70913>

"The nationwide lockdown to curb the spread of the novel coronavirus disease (COVID-19) has forced the four million inhabitants of West Bengal's Sundarbans area famous for its mangrove cover to choose between their lives and their livelihoods. The Sundarbans have a unique geographical character: The area spans across 102 islands and has a thick forest cover that has become the source of livelihood for the area's inhabitants and is also home to man-eating tigers and other wild animals. The people of the region who usually subsist from cottage industries across the area were forced to venture into the thick forest cover, at the risk of their lives. They were strictly prohibited from venturing into the forest during the lockdown, but often do so and lose their lives in the process.

Three people died in a week after they were attacked by man-eaters, according to local media reports. The youngest among them was 36-year-old Rathin Sarkar, a resident of Lahiripur village in Gosaba block who was killed on April 20, 2020. The Sundarbans area is home to 88 tigers, a 16 per cent jump from the 76 recorded in 2014, according to data from a tiger census released by Prime Minister Narendra Modi last year. The lockdown put an end to alternate livelihood schemes being run by non-profits and the administration to prevent people from going into the forest, said Prasenjit Mandal, the chairman of non-profit Sundarban Foundation, that runs a thread-spinning unit in the area.

“Most of the villagers now have no alternative but to bring something from the forest for their livelihood, he said. Surviving danger: Sourabhi Roy has been out of work since a thread-spinning unit in her village shut soon after the lockdown was implemented on March 24. The 65-year-old widow used to eke out a livelihood by working in the unit. She is now, however, dependent on free ration kits distributed by the administration and non-profits, for her sustenance. Her village, Bijohnagar on Sundarbans' Bali islands a few metres away from the mainland is one of the most dangerous places to live in the area, as wild animals often venture into human habitats. Roy, who lost a son and a daughter after a tiger and crocodile attacked them almost a decade ago, questioned her sustenance on the ration being given out by the government. “As if the dangers of wild animals were not enough, pangs of hunger are now going to kill us, she said.

“I might not survive longer if the situation remains the same for the next few weeks, she added. Roy is joined by thousands of widows from the Sundarbans, whose husbands or children have become the victims of tigers and other wild animals. The widows were eking their livelihood by working in different cottage industries, but have no work since the lockdown. “We have to be very economical in our consumption of food grains or we would starve. The pandemic is like a curse to us, said Subala Mandal, a 45-year-old widow involved in beekeeping to sustain her family. “We also have other expenses on medicines and looking after our families, she added. Climate change: Apart from the lockdown, the Sundarbans area also faces the brutality of inclement weather, adding to the woes of farmers, who said their standing crops were damaged because of frequent rains and hailstorms lashing Bengal in the past few days. Suparna Deb Sharma, a 35-year-old farmer in the Sundarbans, said he borrowed money to cultivate paddy in his land. “Regular rains and hailstorms are destroying the crops. I was planning to earn money by selling the harvest but now everything will be lost, he said. Farmers have complained about dwindling groundwater levels.

“The administration has already banned the use of pumps for drawing ground water for irrigation due to depleting water level. The farmers are allowed to depend on canals for cultivation, said Debasish Koley, a farmer. Biswajit Deb Sarma, in-charge of Sundarbans co-operative, an initiative of the state government's animal husbandry department, said around 8,000 farmers

suffered because of unfavourable weather, out of which 2,200 farmers were in the area's Basanti block alone.

“The crops of yellow petite lentils and paddy are getting damaged due to the prevalent weather conditions. Beekeepers are already out of business due to the lockdown, he said. The present issues will have a long-term affect on farmers and would also impact the co-operative's functioning, said Sarma. “It seems that financial crunch would set in once the pandemic subsides forcing farmers to take farming on a smaller scale, he added. The situation may worsen post-lockdown, according to Prasenjit Mandal, who said most people from the island, who work as migrant labourers in other parts of the country, would add stress to the farming land, once they return home. “It might generate unemployment and could also lead to other illegal activities, he said.

### **West Bengal: SLBC to increase rural loans from Rs 4400 cr to Rs 10000 cr**

[https://www.business-standard.com/article/finance/west-bengal-s-slbc-to-increase-rural-loans-from-rs-4400-cr-to-rs-10000-cr-120050501335\\_1.html](https://www.business-standard.com/article/finance/west-bengal-s-slbc-to-increase-rural-loans-from-rs-4400-cr-to-rs-10000-cr-120050501335_1.html)

"The State Level Bankers' Committee (SLBC) in West Bengal has decided to go for a more than two-fold increase in Kharif loan this season. The quantum of loan for West Bengal will be increased from Rs 4400 crore to Rs 10000 crore. Also, the extent of Kisan Credit Card loan will be extended to nearly 4.6 million farmers. A number of small and marginal farmers will also be taken under the fold of KCC in the state. In addition, West Bengal will also request the Reserve Bank of India (RBI) to increase the additional credit limit to MSMEs, to 30 per cent from the existing 10 per cent. In FY 2019-20, a credit of Rs 74000 crore was extended to MSMEs. This year, the target has been revised to Rs 90000 crore. The extent of self help group (SHG) coverage will also be more than doubled this year. The number will be increased from 517000 to nearly 1 million. The loan target to SHG groups has been enhanced to Rs 15000 crore this financial year. An additional limit of Rs 5000 crore will also be given to SHGs, subject to a cap of Rs 1 lakh per SHG. Also, more than 100,000 fishermen in the state will be issued KCC. A total of Rs 500 crore will be extended to the fishermen under KCC. The SLBC meeting was attended by Amit Mitra, finance minister West Bengal and SS Mallikarjuna Rao, Chairman, Punjab National Bank, among other senior officials.

### **West Bengal: In the Indian Sundarbans, the Sea is coming**

<https://thediplomat.com/2020/05/in-the-indian-sundarbans-the-sea-is-coming/>

“its worse, much worse, than you think, David Wallace Wells writes in his 2019 book about climate change, The Uninhabitable Earth. After interviews with over 100 climate experts, he contends, “climate change disproportionately devastates the developing world, and will continue to do so, with India set to be hit the hardest of any country on earth. Wells explains the kinds of

climate cascades we will see: “Sea-level rise inundation of cropland with more and more saltwater flooding, transforming agricultural areas into brackish sponges no longer able to adequately feed those living off them; flooding power plants, knocking regions offline just as electricity may be needed most; and crippling chemical and nuclear plants, which, malfunctioning, breathe out their toxic plumes.

On Sagar Island, in the Bay of Bengal, many of these climate cascades are already playing out and are expected to worsen in the coming decades. Across the more than 100 islands constituting the Indian Sundarbans (an area with a population of 4.5 million), Sagar Island is the largest and most populated with more than 200,000 inhabitants, and growing. As the world's largest delta region, connected to Bangladesh, Sagar has become emblematic for climate scientists and researchers as a climate change “hotspot and a glimpse into what India's climate future may look like. With more than 20 percent of India's population (about 250 million people) living within 50 kilometers (31 miles) of the sea, the country's 7,500-kilometer-long coastline is considered the world's most vulnerable to the impacts of climate change.

Extreme temperatures, changes in rainfall, the incidence of extreme weather events, and sea-level rise are all expected to increase. Depending on various emissions scenarios, it is projected that the sea level in the Asia-Pacific region could rise between 0.4-0.6 meters (1.3-2 feet), and temperature could see increases of up to 2.6-4.8 degrees by 2100. The multitude of climate stressors India faces is overwhelming: increasingly severe storms (cyclones), floods, heatwaves, droughts, water stress, disease, poor air quality, food insecurity, and mass displacement. According to the UN's Intergovernmental Panel on Climate Change (IPCC), the maximum intensity of hurricanes will increase by about 5 percent within the century. The economic cost would run into tens of trillions per year by 2100. According to Dr. Joyashree Roy, an eminent researcher in the field of environmental economics and climate change, and among the network of scientists who shared in the 2007 Nobel Peace Prize awarded to the IPCC,

“India should lead the demand for greater and accelerated collective ambition towards mitigation efforts at the global level. It is absolutely urgent for India to save a huge burden of loss and damage as it has the largest share of the global poor population exposed to all kinds of climate risks and megacities with high population densities. Putting a monetary value will not do justice to capture the enormity of the problem. Sagar Island is of great significance to Hindus. Every January, more than half a million pilgrims descend on Sagar for the Gangasagar festival as one of Hinduism's most sacred pilgrimage sites. Pilgrims come for puja (prayer) at the Kapil Muni temple, and bathe in its southern beaches, where the Ganges collides with the Bay of Bengal. With the site only connected to the mainland by ferries, hundreds overcrowd onto decrepit barges to get there.

The temple has supposedly been lost to sea at least four times. The island is under threat: Coastal erosion is happening here faster than anywhere in the world. NASA Landsat satellite

imagery shows that the sea level has risen in the Sundarbans by an average of 3 centimeters (1.2 inches) a year over the past two decades, and the area has lost almost 12 percent of its shoreline in the last four decades. According to Climate Central's latest research, sea level rise could affect three times more people than previously calculated by 2050. This would erase Asian megacities including Bangkok, Shanghai, and Mumbai at high tide. Climate Central's data indicates that the Sundarbans, Kolkata, and Dhaka would not be immune either. The organization's coastal risk screening tool models land projected to be below annual flood level in 2050. Based on elevation alone, the tool does not factor in coastal defenses such as seawalls or dikes being built. Erilokesh Dhali runs an ashram (a retreat community) for pilgrims coming to the island. A lifelong resident of Sagar, he has seen immense changes in the Sundarbans. Over the past 25 years, four islands have already disappeared: Bedford, Lohachara, Kabasgadi, and Suparibhanga. Lohachara became well-known as the first inhabited island in the world to disappear. Together, these delta inhabitants are India's first climate refugees. Dhali has temporarily housed people displaced from neighboring islands.

One of them is Bablu Paik. Paik, born on neighboring Ghoramara Island, fled the island several years ago after he lost his home to the sea. The ever-shrinking island is now less than 5 square kilometers, with more than half of the land already underwater. Paik's family and thousands of other displaced people were relocated to Sagar Island over the last three decades. Dr. Nilanjan Ghosh, director of the Observer Research Foundation in Kolkata, says, "While the intensity of extreme events has increased (despite its frequency coming down), it is further challenged by relative mean sea-level rise. Dimming Prospects When farming has faltered, people in the Sundarbans turn to fishing as a second source of sustenance. Lamentably, unsustainable fishing practices in the delta, such as commercial trawling, have depleted the hilsa, a key fish of high nutritional value to people all over the Bay of Bengal.

The increased number of boats, in combination with continued land degradation decreases the prospects even further for fishermen. Aquaculture is also popular, but depends on farmers' small plots being protected by embankments, which are often flooded during storms. When water rushes in from the sea, the plots are ruined. Last year, cyclones Fani and Bulbul battered the island and Paik's village in the south of Sagar. Paik's house was damaged, but many neighbors were not as lucky. Besides the harsh winds and heavy rains, residents have to live with the reality that at sea level, any storm surge can come several kilometers inland and inundate everything. Even after a storm passes, the salt water lingers and penetrates the soil, leaving it unusable sometimes for multiple seasons. Access to freshwater is increasingly difficult for those living on the island.

As sea levels rise, salinization creeps into the soil and can ruin crops for multiple seasons while devastating farmer livelihoods. Salt-resistant crops have been introduced and met with some success, but it is merely a temporary fix. The Bay of Bengal is one of the hardest-hit regions in the world from cyclones, mainly in April-May, and in October-November. Cyclone Bulbul, a

category 2 storm in November 2019, affected more than 3.5 million people. In the last two decades alone, there have been 10 cyclones to hit West Bengal and neighboring Bangladesh. Cyclone Aila in 2009 displaced a million people in both countries. Deeper into the Sundarbans, on both sides of the border, starting in April locals can get by, although perilously, in the forest, collecting honey, crab, or shrimp. None of that exists on Sagar, where resources are depleted. Unprotected communities are more vulnerable to increased food, water, and health insecurity, which will make it harder for them to adapt in the future in an already highly dense state. The state of West Bengal alone has an estimated 92 million people. These difficulties have been documented in neighboring Bangladesh, where coastal climate change has led to conflict and mass migration among shrimp farmers to its cities.

Crop failure can be so dramatic on some parts of the island that a large portion of male residents are forced to find work elsewhere: in nearby Kolkata, south India, or in Gulf countries at construction sites. Across India, crop failure has pushed thousands of debt-ridden farmers to suicide. According to a 2017 study published in the journal PNAS, over the last three decades in India, 60,000 suicides have been attributed to climate change. Dr. Tamma Carleton forecasts that as temperatures continue to rise, suicide rates will continue to increase as well. In a Global Climate Risk Index 2020 analysis by Germanwatch, India was ranked fifth in the world for countries affected in 2018-19 by extreme weather events. Since 2004, India has experienced 11 of its 15 warmest recorded years and is “highly vulnerable to extreme heat due to low per capita income, social inequality and a heavy reliance on agriculture.

According to the World Bank, in South Asia upwards of 800 million people will be directly affected by climate change and their living conditions will sharply diminish by 2050. According to the AQ Index, 21 out of the 30 most polluted cities in the world were in India in 2019. India was ranked fifth among the world's most polluted countries. The economic toll for India is already enormous. It is estimated that the Indian economy is 31 percent smaller than it would have been without climate change.

According to the World Bank, India's healthcare costs and productivity losses from pollution amount to up to 8.5 percent of its GDP. *Coal Is King, But Fading* Although India has made significant efforts and progress to diversify its energy supply toward more renewable sources, coal remains king. According to the IEA, coal will continue to drive India's economic growth by an estimated 4.6 percent through 2024, and the country's demand for coal will likely grow faster than any other country globally within that period.

Even as coal use has slightly faded in 2019, CO2 emissions by coal are anticipated to grow by 1.8 percent this year, which is substantially less than half the average growth rate of the last five years. India's emissions were expected to increase by only 1.8 percent in 2020, compared to an 8 percent jump in 2018. Power generation from renewables is forecast to expand strongly, with wind capacity doubling and solar increasing fourfold between by 2024. Despite progress, dozens

of coal-fired power plants are still in planning throughout India. One of the most controversial is on the other side of the Sundarbans, where India has backed a large station in Bangladesh (Rampal). Many climate experts see this as counterintuitive to India's stated climate objectives and something that could potentially lead to even more pollution in the delta.

**A Crumbling Wall** For the 4.5 million who live in the Indian delta region, the mangrove forest is a crucial natural blockade against cyclones, storm surges, and tides. In 1999, during a super cyclone that struck the neighboring state of Orissa, research found that villages with wider mangroves between them and the coast experienced significantly fewer deaths than ones with narrower or no mangroves. The felling of trees is rampant throughout the delta region, although illegal, with the strong wood used to build boats and for building materials. This unique mangrove ecosystem also is one of the last sanctuaries for thousands of plant and animal species, most famous for endangered Ganges dolphins and Royal Bengal tigers.

Now that the two countries better understand the importance of mangroves as an important barrier to mitigating strong storms, India and Bangladesh have sought to harshly punish those caught illegally logging. In practice, however, the expansiveness of the delta makes enforcement difficult. According to Ghosh of the Observer Research Foundation, “The problem also lies with the decline of sediment flow through the Ganges and its tributaries due to upstream constructions (including the Farakka barrage), which arrest the sediments in their upstream. Hence, the soil formation of the delta (the Ganges delta is formed by the sediments brought in by the Ganges and its tributaries) is largely inhibited. On the other hand, sea level rise and decline in streamflow also leads to salinity ingression (intrusion).

Degradation of the mangrove ecosystem has severely depleted the tree stock of the most important trees in the Sundarbans: The Sundari tree. The number of Sundari trees has decreased by 76 percent in 70 years. To survive, Sundari trees need low saline conditions, but they are under severe threat from the lack of freshwater reaching the Sundarbans and increasing amounts of salt water inundating them from the sea. Meanwhile, the roots of the mangroves secure the soil from disintegrating, literally holding the land together, but today it's not enough. **A Threat From Both Sides**

According to the World Resources Institute's Aqueduct Water Risk Indicator for 2019, India ranks 13th for overall water stress, fourth for drought risk and has more than three times the population of the other 17 extremely highly stressed countries combined. West Bengal and the Indian Sundarbans are no exception. Reliant on the Ganges-Brahmaputra Basin, the area is labeled as at high water risk. Mangroves also act as vital “carbon sinks, efficiently removing CO<sub>2</sub> through natural carbon capture. One study estimates that the Sundarbans have soaked up 45 million tons of carbon dioxide. Black carbon is likely to be responsible for a considerable part (around 30 percent, by some calculations) of the glacial retreat that has been observed across the

larger Hindu Kush-Himalayan region. Glacial melt from the Himalayas has doubled since 2000 and in the last 40 years approximately 25 percent of glacial ice has been lost.

Melting Himalayan glaciers and loss of snow accumulation pose a significant risk to stable and reliable water resources to major rivers such as the Ganges, Indus and Brahmaputra, which depend significantly on snow and glacial melt water. This in turn presents a freshwater risk for the Sundarbans as part of the Ganges River Basin. More Chinese dams are also planned for the Brahmaputra basin, which could devastate the Himalayas, subsequently starving Sundarban mangroves of their last freshwater resources. By 2060, according to the Hindu Kush Himalaya Assessment, suggested that “Increasingly uncertain and irregular water supplies will impact the 1 billion people living downstream from the Himalaya mountains in South Asia.

A Future Health Emergency Coastal flooding, which often comes to the delta, has important health implications, too, for a future health crisis in the region. Cyclones, storm surges and flooding can become vectors for a host of water-borne illnesses, as well as dengue and malaria, both mosquito-borne. Under high emissions scenarios, climate change is expected to make the prevalence of disease, particularly water-borne illnesses even higher. In the 19th century, cholera spread across the world from the waters of the Ganges delta, becoming a global pandemic. After Cyclone Aila in 2009, a severe cholera outbreak across the delta occurred, and has been a major concern for health officials ever since as contaminated drinking water is often the main source for such outbreaks. Increased saline water levels also increases incidence of high blood pressure and fever, as well as respiratory and skin diseases.

The World Health Organization's 2014 risk assessment predicts climate change could cause a quarter of a million more deaths per year between 2030-2050, with tens of thousands of people dying of heat exposure, diarrhea, malaria, and malnutrition worldwide. Longer term effects of coastal flooding will include PTSD and high levels of displacement. A high incidence (30.6 percent) of post-traumatic stress disorder was reported after a cyclone that struck India in 1999. A WHO report showed that there was a “high prevalence of PTSD and major depressive symptoms have also been reported following cyclones (hurricanes) in India, Nicaragua, Sri Lanka and the USA.

The WHO's 2018 report on health and climate change interconnects the myriad risks which are expected to increase especially in countries like India and China. By 2050, 20.3 million people could be living in high risk cyclone zones compared to 8.3 million at present and an additional 7.6 million people could be exposed to very high salinity. In the next 50 years, over 147 million people are projected to be at risk of malaria.

International health experts warn that more “careful preparation for epidemics before the arrival of a cyclone is important to ensure a rapid response and control of outbreaks. The rapid global spread and impact of COVID-19, even without the complications of a natural disaster, hopefully has governments paying closer attention to future outbreak preparation.....

### **West Bengal: Tiger jumps onto boat, drags fisherman into Sunderban**

<https://www.indiatvnews.com/news/india/bengal-tiger-jumps-drags-fisherman-into-sunderbans-forest-612856>

"A tiger jumped on a fishing boat at a creek in the Sunderbans and dragged a 45-year-old fisherman into the forest, officials said on Thursday. Three persons from Lahiripur village in Gosaba block in South 24 Parganas district went out for fishing on Wednesday morning, they said. As they were fishing in the Kalichar creek, a tiger jumped on the boat and got hold of Sujit Mondal. The animal then dragged him to the forest, officials said. Mondal's body is yet to be recovered, they said. He is survived by wife, a son and a daughter. Sunderbans, famous for its mangrove forests, is spread across India and Bangladesh. It is the home of the Royal Bengal tiger.

### **West Bengal: To continue lockdown till end of May**

<https://www.thehindu.com/news/national/coronavirus-west-bengal-to-continue-lockdown-till-end-of-may/article31467083.ece>

"The West Bengal government will continue the lockdown till the end of May, but will allow small shops and selective sectors to resume business from Monday in the green zone. The government will shut down any of those establishments in case of a spike in COVID-19 cases, Chief Minister Mamata Banerjee said on Wednesday. While 33 positive cases are reported in the last 24 hours, the testing numbers have gone up. A total of 1,397 persons have been tested in last 24 hours, while 119 patients are discharged, the State administration noted. Without specifying any date, Ms. Banerjee said lockdown would continue in Bengal for another month, with limited relief to certain sectors. She listed the sectors in a press conference. "Small neighbourhood shops for both essential and non-essential items, stand-alone electronic goods sellers but not big markets, stationery stores, paint shops, mobile and battery charging points, hardware, laundry and shops selling cigarettes or beetle leaf... tea shops will sell tea [leafs] but no casual chatting sitting in tea shops is allowed, the Chief Minister said.

Construction gets nod Industries such as construction will be allowed in the green zone "provided they follow lockdown protocol. The activity of Public Health Engineering (PHE) to be encouraged, while self-help groups (SHGs) will be engaged to make masks. This was one of the many suggestions made by the doctors' associations to the Chief Minister at Tuesday's meeting. "Since unemployment will be on the rise, with a growing demand of masks, we requested the

Chief Minister if SHGs can be engaged to make masks. A protocol for mask making can be made, said Rejaul Karim, a doctor who attended the meeting. Doctors' plea The doctors asked for “more and sterilised PPEs, separate treatment facility for health workers, ensuring opening of private facilities in the green zone.

“Globally, epidemic identification and forecast research institutes work throughout the year to study viruses. The Indian Council of Medical Research [ICMR] has been doing it, perhaps we need one for the State and the Chief Minister was informed. She agreed to the idea on the face of it, said Dr Karim. On Wednesday, Ms. Banerjee said that nearly half of 45 jute mills were allowed to operate and 25% of tea garden workers were back to work. She said that from next Monday, buses and taxis would be allowed to operate in the green zone “without plying between districts.

“In addition, 51 private hospitals are being asked to treat patients without fee. The government will bear the cost, Ms. Banerjee said. However, the list of such hospitals is yet to be made public. The State has set up a task force to “examine and evaluate a six-monthly Rs.1.52 lakh crore economic rehabilitation plan, she said. ‘Truth exposed’ “The truth is getting exposed. Media is being stopped from narrating facts... but even then videos captured using mobile phones are exposing the truth. The news organisations are being threatened...

“None of the helplines are working, ration and food is being distributed among Trinamool Congress cadres, the scheme for migrant workers not functioning properly, said Mr. Ghosh. He sought another all-party meeting.

### **Odisha: COVID-19: Govt bans fish trade with West Bengal**

<https://www.downtoearth.org.in/news/economy/covid-19-odisha-govt-bans-fish-trade-with-west-bengal-70688>

"The Odisha government on April 24, 2020 banned supply of fish to West Bengal after a number of people who tested positive for the novel coronavirus (SARS-CoV-2) in the state were found to have travel links to Bengal. The state also banned all types of fishing to prevent people from West Bengal to enter Odisha's coastal pockets to curb COVID-19 spread. In a bid to conserve fish stock during the breeding period, the state fisheries department imposed restrictions from April 15 to June 14. The ban aims to conserve fish species during the monsoon, which is the spawning season for many varieties of fish. The ban extends to 12 nautical miles off the Odisha coast and applies to all kinds of trawlers and mechanised boats.

“The administration banned all types fishing On April 24 to prevent the entry of people from Bengal as many were found to slyly enter coastal pockets of the state through sea routes, said Manas Ranjan Sahoo, additional director of fisheries (Marine) department. Meanwhile, the

fishermen and fish traders are facing losses, according to Abhiram Mandal, a fish trader at Paradip. The rising number of COVID-19 patients who returned from West Bengal prompted fish traders to withdraw travel to Bengal, said Sumant Biswal, general secretary, All Odisha Fish Producers Federation. Pomfret, khainga, catla, mirgal prawns and anchovy are the most popular varieties of fish in West Bengal.

Following restrictions, many fish traders stopped procurement from local fishermen of Odisha. Jadumani Mandal, a fish trader in Kendrapara district, said, "We were on way to supply fish from Talacua fishing harbour to Kolkata through two vehicles on April 23. But Nalatiapatia villagers forcefully stopped our two vehicles." Fish traders can still supply to Bhubaneswar and other areas of the state, according to Mamata Mohapatra, fisheries officer, Kendrapara district. Meanwhile, the Odisha government shut down Balasore, Bhadrak and Jajpur district for 60 hours from on 24 April after 28 people who returned from Kolkata and their relatives tested positive for SARS-CoV-2. As part of the shutdown, all entry and exist points were sealed and porous borders with West Bengal closed.

**West Bengal: Around 70 per cent of shrimp farmers chose not to farm shrimps even at the cost of financial stress**

<https://www.telegraphindia.com/states/west-bengal/coronavirus-outbreak-forced-prawn-sabbatical-in-four-bengal-districts/cid/1768116>

"The Covid-19 outbreak in key importer China has affected nearly six lakh shrimp farmers in four Bengal districts who did not farm the produce apprehending a fall in demand in the southeast Asian market. The whiteleg shrimp harvested in East and West Midnapore and North and South 24-Parganas is popular in several southeast Asian countries, including China. Anticipating a fall in demand in these countries because of the coronavirus pandemic and the resultant restrictions on export, around 70 per cent of the farmers chose not to farm shrimps even at the cost of financial stress.

"The fall in demand for whiteleg shrimps is going to affect nearly six lakh farmers in the state and more than 30,000 distributors, said a Bengal fisheries department official. "A little more than 25 per cent farmers decided to harvest shrimps, and they too are staring at huge financial losses, the official added. Most shrimp farmers take on lease plots measuring a few acres in muddied or brackish waters, adjacent to agricultural land, at prices of around Rs 50,000 an acre for a year. "It costs an additional Rs 50,000 per acre to farm shrimps. We take most of this money on loan. We don't know how we will repay the loan, said farmer Arup Ray from North 24-Parganas' Hansnabad. "I had planned to farm five acres and have already invested the money I had taken on loan. But there is no demand this year.

With domestic and international cargo not operating, we are in for a financial crisis, he added. Whiteleg shrimp is traditionally exported in large quantities to China, the US, Japan, Vietnam and the UK. The shrimps are farmed on over 40,000 acres of brackish plots in the four Bengal districts. In 2019, the districts exported over 92,000 metric tonnes of the shrimp to these countries. “This is a high-protein commodity and has high demand in the global market. More than 90 per cent of our produce is exported, said All Bengal Aqua Farmers' Association secretary Madan Mondal.

“The coronavirus outbreak has taken a toll on the demand this year, and the lockdown has badly hurt transportation. Farmers are going to suffer huge losses, Mondal added. Alamgir Hussain from Nandigram in East Midnapore had leased more than 50 acres for farming at the beginning of the year. “I have already invested everything. I don't know how I am going to recover my losses. The produce will rot if not sold in 20 days, he said. The lockdown restrictions have also hit domestic transporters of the produce, who, though officially exempt, have scaled down operations.

“The lockdown restrictions do not apply to fishing or to the transportation of feed and produce. But unfortunately, transporters are finding it hard to operate under heavy losses and low market prices. The government will also suffer a huge loss in revenue, said assistant director (fisheries), Surajit Bag. In February this year, lockdown restrictions in China and other key consuming countries had similarly affected crab exports from East Midnapore. With export of crabs not likely to happen soon, the stakeholders are staring at a revenue loss of Rs 100 crore. “The prawn trade is of a significantly higher value, an official had said, pegging the value of annual prawn and shrimp exports at nearly Rs 2,000 crore.

### **West Bengal: COVID-19: ‘Indebtedness, Hunger May Push West Bengal’s Denotified Tribes into Bonded Labour’**

<https://www.indiaspend.com/covid-19-indebtedness-hunger-may-push-west-bengals-denotified-tribes-into-bonded-labour/>

"On March 19, 2020, Lakhan Sabar, 35, a farmer who lives in Boro village of drought-prone Purulia district of West Bengal, had to sell two quintals of his cucumber crop at Rs 900 per quintal because no vehicles were available due to the COVID-19 lockdown to take his produce to market, where he could have got a higher price of upto Rs 2,000 per quintal. His total produce this season was around eight quintals; the remaining six quintals found no buyer and were left to rot. In the weeks before the pandemic struck, when it was sowing season, he had taken a loan of Rs 20,000 from the local cooperative bank in Boro village in Purulia at 12% rate of interest and Rs 10,000 from a local money lender to sow the crop a few months back. The rate of interest from the local money lenders is so high that the interest often grows up to 80% of the principal amount within five months, Sabar said. Sabar grows tomatoes, cucumbers and watermelons. His

last sold crop was tomatoes, after which he was relying on the cucumber harvest to repay his loans.

“I managed to save some money by selling tomatoes. That is what we were using so far, Sabar said in a webinar conducted by Praxis India, a Delhi-based non-profit, on April 10, 2020. “How will I repay these loans? I sold a goat to pay off some of my debt. My family survives on whatever we earn from our agricultural produce, said Sabar who has a family of five to sustain. Amid the countrywide lockdown due to COVID-19, farmers and daily-wage earners belonging to the denotified Kheria Sabar tribe in Purulia district of West Bengal are struggling for sustenance, a survey of 33 villagers from 30 districts in Purulia district of West Bengal found. Direct cash transfers, free ration and subsidies that the government had announced have not reached many. The few who have received some help from the government have found it to be insufficient.

Denotified tribes were listed as criminal tribes during British rule under the Criminal Tribes Act of 1871. They were delisted or ‘denotified’ in 1952; despite this, they continue to face stigma because of their status as erstwhile criminal tribes. Denotified tribes are scattered across India and often migrate from one state to another, engaging in various occupations such as farming, domestic work and salt trading. Many also work as acrobats, street dancers, snake charmers and pastoralists. India has 1,500 nomadic and semi-nomadic tribes and 198 denotified tribes, said the Renke Commission report of 2008, emphasising that denotified tribes continue to face poverty and marginalisation and are one of India's most backward tribes. The report found that these tribes continue to fare poorly in literacy, housing, employment and living conditions, with 89% of these tribals being landless.

Survey findings Most daily-wage earners had not received their wages and indebtedness has increased post-lockdown to a level that could push them into bonded labour, the survey, conducted between April 4 and April 6, 2020, by Praxis India and the National Alliance Group for Denotified, Semi-Nomadic and Nomadic Tribes (NAG-DNT), based out of New Delhi, found. Most villagers do not have a Jan Dhan account and the few who do, have either not received any relief money from the government or said they found it too meagre to sustain their families.

Other government measures of providing relief to poor families through schemes including pension schemes under the National Social Assistance Programme (monthly pensions for senior citizens, widows and differently-abled), Ujjwala scheme (subsidised cooking gas cylinders), Kisan Samman Nidhi scheme (annual payment of Rs 6,000 to farmers), Prochesta scheme (monetary assistance for daily wage labourers during the lockdown in West Bengal) or Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS, 100 days' paid work in rural areas) are not able to bring any major respite to these families, the survey report, titled

'Analysis Report Of Information Collected From DNT Workers in Purulia, West Bengal During The COVID-19 Lockdown', found.

Alleging discrimination from the community and the administration, the report recommended that a local community organisation be appointed as a nodal point to disburse relief and ensure it reaches the tribes, and that the government looks into alleviating indebtedness. After the National Alliance Group for DNT reached out to the district authorities with these suggestions, the district collector of Purulia appointed the ADM as the nodal officer to disburse relief to the community.

“Stigmatisation might increase as hunger might drive one or two people into thieving, which would affect the entire community; there is also an increased fear of lynching, said Prasanta Rakhshit, 60, who has been working with Kheria Sabar community for 37 years and is associated with the Paschim Banga Kheria Sabar Kalyan Samity (PBKSKS) in Purulia, West Bengal and was a part of the survey team. Increasing indebtedness the survey showed that most of the Sabar families are daily-wage earners and none of them had received any wages as of April 6, 2020, despite the prime minister's appeal to the employers to pay salaries to all workers during the lockdown, “this does not seem to be happening anywhere here, the report reveals. Contractual labourers who had been working in different states have returned to their villages during the lockdown. “It is not easy for any family to survive without income, said the report as most of these labourers have meagre savings and many haven't even received their wages for the previous week.

“I used to get Rs 220 and 2 kg rice as a daily wage but that has stopped during the lockdown, said Phulmoni, 40, who lives in Purulia and works as a daily wage labourer in West Bengal's Bardhaman district. She is finding it hard to sustain her family as her wages have stopped and shopkeepers have stopped giving things on credit or loan. “I am getting rice from the ration once a week, but that is hardly enough for the family, she said. Of the 33 tribals surveyed, nine of them (27%) had already taken a loan during the lockdown period. The most common reason for these loans was found to be access to food, especially for children. Of the nine people who took a loan, at least one took the loan from his employer, which indicates a higher possibility of the worker getting into a bondage situation, the report said. “Indebtedness has always been a trigger for other social and economic exploitation, causing a rise in trafficking, bonded labour and child labour, it said.

Families who have taken land on lease have to pay a monthly rent. These farmers will either have their loans deferred leading to its accumulation or will have to take loans from the local moneylender. “I grow vegetables like tomatoes, gourds, beans, cauliflower, cabbage, watermelon, etc. twice a year, said Kharu Sabar, 52, from Manbajar block, Purulia district. “I spent almost Rs 64,000 on my crops but have recovered only Rs 10,000 so far. I recently earned Rs 800 from selling beans. I don't know how [I will] sell vegetables that are already planted and

ready for harvest. Seven of the 33 people, about 21%, had at least one family member who was ill, adding the costs for medicines to the expense. Three of these seven families had to take a loan. In about two weeks, the number of families taking loans could increase drastically, which is a worrying trend because these loans were become increasingly important for food and healthcare. “At the current rate, there is scope for a high increase in bonded labour, given that workers will either turn to moneylenders or employer to borrow, found the report.

Loss of land and livestock are also a worry during the lockdown as these are the first to be sold or mortgaged for loans and have been hard for the community to acquire. The Sabars were given ‘patta’ land by the government which “will gradually go away from their hands as they will end up illegally mortgaging it for loan, said Rakhshit from PBKSKS, “There will also be a loss of livestock as there will be increased distress selling to cope with lack of income. After the survey was conducted, the local authorities permitted the farmers to sell their produce in the market, “but by now the entire lot for several vegetables like cucumber has already rotted, the farmers are trying to sell whatever little is left, said Mayank Sinha, convener, National Alliance Group for Denotified and Nomadic Tribes (NAG-DNT).

Looming food insecurity The Sabars are now selling fish they catch from local ponds to meet expenses and buy basics such as rice and flour. “We have received 2 kg rice and 500 gm pulse on our ration card but it is difficult for a family to sustain on this, said Ratnabali, 23, from Latpada village, whose mother works as domestic help. “In some families, they have got less than this. If this situation continues, what will the Sabars do? Others don't understand this situation we are in, she added. Food security will increasingly become a problem with time, as most villagers are still surviving with the previous month's ration. The West Bengal government claims to have reached 78.8 million beneficiaries through the Public Distribution System (PDS), the survey noted.

While all 33 families had a PDS card, only two got the extra ration of 5 kg rice. Twenty four of these families are also entitled to free grains from the Integrated Child Development Services (ICDS) scheme with the presence of either a pregnant woman or children below six years, but only 17 families have received free grains. Children who were receiving food through the anganwadi centres are also facing a crisis. “We are looking at an increase in malnutrition among children, said Rakhshit from PBKSKS, “there is also possibility of an increase in child deaths. The survey found that even though no villager has gone hungry yet, most have managed because of loans or advances.

After the survey was conducted, “rice distribution under the PDS extended to more number of blocks in the area but the tribespeople reported that the quantity is still insufficient and there are many who still haven't received any ration, said Sinha from NAG-DNT. Government relief schemes Government schemes that these tribes could have fallen back on in the absence of regular wages are either not enough for sustenance or are not reaching all. “While many schemes

have been announced, the access and reach of these schemes still remains limited, found the report, which collated responses as on April 6, 2020. “Even after April 6 there hasn't been much difference in the status of cash transfers received by the community, said Sinha. “Denotified tribes across the country are engaged in the informal economy, and the lockdown has hit them severely, said Sinha.

“A majority of these tribespeople either do not have ration cards or do not live in the states where these cards were made because they keep migrating--either way, it means that these people would not be able to access the government's relief packages. As part of its relief efforts, the Centre had announced on March 26, 2020, that under the Ujjwala Scheme, free gas cylinders would be provided to 80 million poor families for the next three months. While most villagers were unaware of this scheme, of the 11 who were a part of it, none had received free cylinders. They said they did not have money to pay for cylinders, if required to.

About 87 million farmers who are beneficiaries of the Pradhan Mantri Kisan Samman Nidhi and are entitled to a sum of Rs 6,000 annually, would be given Rs 2,000 as a “front-loaded matter, Nirmala Sitharaman had announced. Of the 33 people surveyed, only one had received a partial amount of Rs 1,000 till March 2020, even as several farmers have incurred massive losses as their crops have rotted. “Since the lockdown, we Sabars are facing a lot of problems, said Jalandhar, 59, from Manbajar block. “We haven't been able to buy even salt and oil. Those who grow vegetables are not finding ways of selling it. The cucumber yield has completely rotten and the watermelons are going to face the same now.

Finance minister Nirmala Sitharaman had said in March 2020 that over 200 million women Jan Dhan Account holders would be given Rs 500 per month. Subsequently, the government said the money was disbursed to 200.5 million women as on April 22, 2020. Of the 33 villagers surveyed, only five had Jan Dhan accounts. Of these, one had received the money while the other four women had not received anything yet. The Centre had announced in March 2020 that pensions given to 29.8 million widows, senior citizens and differently-abled under the National Social Assistance Program will be given an advance pension for three months and an ex-gratia amount of Rs 1,000. However, the survey found that of the 13 families eligible under the scheme, only 11 have received the pension for this month and none are sure of having received any advance, while no family has received any ex-gratia amount.

Meanwhile, the “Prochesta scheme launched by the West Bengal chief minister has not reached any of the 33 people. Under the scheme, daily wage labourers were to be given an assistance of Rs 1,000 per month during the lockdown. About 32 families, who have a job card under MGNREGS, none have received any payment or any job over the last few months. The Centre had announced that every worker will get an additional wage of Rs 2,000 annually and funds will be released to clear pending wages. However, “none of the villagers seem to have benefitted from this announcement thus far, the survey said.

## **West Bengal: Sustained lockdown drives many in unorganised sector to sell veggies, fish in Bengal**

<https://www.newindianexpress.com/cities/kolkata/2020/apr/20/sustained-lockdown-drives-many-in-unorganised-sector-to-sell-veggies-fish-in-bengal-2132700.html>

"For two weeks, Mohammad Irfan went to bed on a half-empty stomach, making sure his children get three square meals a day, but with the extension of the lockdown, the rickshaw-puller in the city's Paikpara area knew it was time to look for an alternative source of income. Irfan, these days, wakes up at 4 am and rushes to wholesalers' hub - Mechhua Bazar - to procure vegetables and fruits, which he then sells in his neighbourhood. Much like Irfan, taxi drivers, small shopkeepers, tea stall owners and other vendors in the city, who mostly trade in non-essential items, have taken to selling vegetables, fruits and fish, with the COVID-19-induced lockdown having dried up much of their resources.

West Bengal Consumer Affairs Minister Sadhan Pandey, when asked about this trend, said if the traders abide by the norms, the government sees no reason to stop them. They can surely opt for an alternative source of income in this hour of crisis. Just that they should do business between 8 am and 4 pm,"" he said. Nirmal Kumar, a shoe shop owner-turned-fish seller in Behala, expressed hope that he would be able to send money to his ailing parents in Burdwan this month, as his new trade was picking up pace in Manton area.

"I couldn't send money home last month as I had used up half of my savings to buy a cycle van. Now, I visit Chowbaga fish market every morning and buy some staple varieties for sale in Manton. Many residents place orders on phone, and I deliver them to their doorsteps,"" he said. The story is no different for Ratan Halder, the owner of a fast-food stall in Baguiati area, who has started selling vegetables from his kiosk. The 45-year-old, who pooled in money from relatives to set his alternative trade rolling, cycles 30 km up and down to buy fresh produce from Polerhat in South 24 Parganas district.

"I had recently spent Rs 3,500 to buy raw materials for my fast food stall. It has all gone waste. Not once did I foresee this month-and-a-half-long lockdown,"" Halder said. A senior official of a retailers' body said more vegetable vendors would mean more options, and people no longer have to stand in queues. ""I must say that's a good move. If retailers are turning into vegetable sellers in this scenario, that would be of help to them as well as the customers. People will no longer crowd just one store and the practice would keep prices of commodities in check,"" said Kumar Rajagopalan, the CEO of Retailers Association of India.

"Also, if some of these vendors are moving from one lane to another to sell essentials in mobile vans, residents would no longer have to step out of homes to visit the nearby market,"" he said. A vegetable trader in one of the city's biggest wholesale marts -- Koley Market -- said at least 40

per cent of retailers who visit the market every day are fresh faces. "Most retailers through the wholesale market between 3 am and 8 am.

Many of them are rickshaw-pullers and taxi drivers, who have taken to vegetable selling only recently. With businesses shut for a month now, this seems to be their only plausible option," he said. Economist Asish Sana noted that the situation may get more challenging in the near future, and many might end up losing permanent sources of income. "New challenges, however, will teach people to look for new means of livelihood. People will have to adapt to the changing circumstances," he added.

### **West Bengal: Prawn farmers face troubled times as lockdown stops exports**

<https://www.ndtv.com/india-news/coronavirus-impact-on-farmers-west-bengal-prawn-farmers-face-troubled-times-as-lockdown-stops-export-2213139>

"In Bengal, three and a half lakh people depend on prawns for two square meals a day. These are the families who earn bread and butter by farming prawns - a delicacy, which is in huge demand worldwide, and brings in over Rs 5,000 crore in exports. The lockdown has hit them hard. The fish auction market at North 24 Parganas's Haroa, 50 km north of Kolkata, is known to sell an estimated Rs 1 crore on an average day. However, the prawns are selling dirt cheap here. Tiger prawns that should have sold at Rs 750 per kg, was being push-sold by farmers for whatever they could get -- about Rs 250 to 300 per kilo.

In short, at a loss of Rs 500 per kg. Usually, the market is packed with exporters snapping up prawns to sell to the US, Vietnam, Japan and China. However, the lockdown has stopped the exports completely - keeping the big buyers away from the market. The farmers say that they are unable to sell their produce amid the lockdown and urge the government to help. "Either give us an alternative livelihood or arrange to sell our current crop of prawns. Otherwise, all of us here will die of hunger," said Prabir Pal, a prawn farmer and the president of Haro Market Association.

"The export units in Kolkata who buy prawns are shut down because of the lockdown. Their buyers are not coming to the market and prawns are not selling," said Jahangir Alam, secretary of Haroa fish market. Prawns are a big buck business. In 2018-19, three Bengal districts exported 1.3 lakh tonne for Rs 5,376 crore rupees, surpassed only by Andhra Pradesh. Prawns also directly put food in the mouth of 60,000 farmers and their families or 3.5 lakh people. On 11th April, both the centre and Bengal issued several relaxations for aquaculture and fishing. But kickstarting the system that has been in lockdown for three weeks will take time and the prawn farmers of Bengal are in for hard times. Zakir Mollah and Zulfikar Ali have huge prawn farms and huge loans -- over 50 lakh each. They need to sell to repay. But no one is buying. And not harvesting is not an option either. This is harvest season. If not netted, the prawn will die, pollute the water, spread disease and endanger the next crop.

""The dead prawns will spread virus and infection in the water and the next crop will not happen. What to do in this situation? I have a huge loan and suicide may be the only option,"" said Zupfekar Ali. Md Zakir Mollah, a fellow prawn farmer, says, ""I think my whole family and I will have to die. My debtors will gherao us. All is lost.""

### **West Bengal: Slow movement of fish seeds from Bengal due to lockdown to impact fish production in the country**

<https://economictimes.indiatimes.com/news/economy/agriculture/slow-movement-of-fish-seeds-from-bengal-due-to-lockdown-to-impact-fish-production-in-the-country/articleshow/75152516.cms>

"India is facing a fish scarcity, with prices rising in several states because of the lockdown. The situation is likely to deteriorate because transportation bottlenecks have derailed movement of fish seed from West Bengal, the major supplier. This has already made fish scarce in some states. Trade officials said police harassment, fear of the virus, labour scarcity and shortage of trucks has blocked the movement of fish seed from Bengal to Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh and Uttar Pradesh.

Fish feed production is also under stress as supply of raw materials like corn, soya, deoiled rice bran and mustard cake is posing a problem as farmers are not being able to sell their commodities in mandis. Prices of fish have also started moving up with fishes like Pangash, which is widely consumed in Bihar, Uttar Pradesh, Madhya Pradesh and Jharkhand, going up as much as 90% in some markets in these states.

“Hatcheries have done breeding of new Pangash, which cannot be transported due to lockdown, said Surajit Kashyapi, owner of Kolkata-based fish seed supplier Anand Krishi Khamar. “Only 10% to 15% Pangash seed has been stocked by farmers before lockdown. Its harvesting period will be August to October. So there will be a huge gap in demand and supply. There are a few hatcheries for Rohu, Katla and Mrigel fish in other states but the supply is limited. India produces 13.42 million tonnes of fish annually. “No fish seed is coming from Bengal, said Sushil Rai, owner of Bihar-based Raja Fisheries “We do not know how to breed fishes and cater to the market. Price of Pangash fish has gone up from Rs 120 per kg before lockdown to Rs 250 per kg after lockdown. Nitin Goud, owner of Indore-based Red Basket, a non veg super store said there is no fish at all in the market.

“Whatever little is there it is being sold at a high price, he said. Rohu, which normally sells for Rs 200 per kg, is now quoting a price of Rs 300 per kg in parts of Madhya Pradesh. Amit Saraogi, managing director of Kolkata - based animal feed maker Anmol Feeds, said production of all animal feeds, including fish feed, is a problem now. “Arrival of corn in mandis in Bihar

has almost stopped. Corn is a major raw material for animal feed. Farmers bring corn to mandis in tractors. But the government has not allowed movement of tractors during lockdown, he said. “Similarly, soya meal, de-oiled rice bran and mustard cake, from which animal feed is produced, are not reaching the animal feed industry as soyabean, mustard seed are not reaching mandis.

### **Govt in West Bengal, India, to sell fish online to counter price**

[risehttps://www.telegraphindia.com/states/west-bengal/bengal-government-to-sell-fish-online-to-counter-price-rise/cid/1760142](https://www.telegraphindia.com/states/west-bengal/bengal-government-to-sell-fish-online-to-counter-price-rise/cid/1760142)

"The Bengal fisheries development department has decided to directly sell fish to counter the rise in prices because of the coronavirus-induced lockdown. While people in Calcutta can place their orders online and get fish delivered at home, those in the district towns of Bolpur, Burdwan, Durgapur and Digha can buy from vehicles ferrying several varieties of fish. The lockdown has caused a shortage in supply and a consequent hike in prices. Officials said 25 vehicles would sell fish in Calcutta (four vehicles), Bolpur, Burdwan, Durgapur and Digha. Fisheries minister Chandranath Sinha launched the project on Saturday morning in Bolpur where around 100kg of fish was sold to customers.

“We noticed there is a severe shortage in the supply of fish to the markets as transportation has been affected because of the lockdown. As a result, a few traders have jacked up prices of fish in the local markets. So, we decided to sell fish produced in our farms in the local markets, Sinha said. Officials said the minister took the decision after complaints of a sudden increase in the prices of fish were made in several areas of Bengal and Sinha visited a market in Bolpur. “Because of low supply and high demand, traders had hiked the price of fish by Rs 100150 per kilogram.

So, we decided to sell fish. All district officials in the fisheries department have been asked to supply fish to as many markets as they can, said a fisheries department official. In a few districts, the department has planned to sell fish to the traders at fair price to meet the crisis in supply. Sources in the fisheries department said the government owned several farms in districts such as Birbhum, Burdwan, South 24 Parganas and East Midnapore, from where varieties like rui, katla and parshe were supplied. Minister Sinha said the department would try to reach most towns in Bengal with their vehicles.

“I can't say that we will be able to reach all towns in the state, but I can assure we will sell at fair price, Sinha said. In Calcutta, the department has resumed selling fish online after the facility was stopped a few months ago because of low demand. Officials said that to avail oneself of the service, one would have to download the mobile application SFDC (State Fisheries Development Corporation) from Google Play Store. After signing into the app by providing the home address and mobile number, home delivery of fish will be a click away. “We will charge Rs 25 for

delivering dressed fish at the doorstep. The service was started on Saturday for buyers in Calcutta, said a fisheries department official.

### **West Bengal: Coronavirus: Stranded far from home, Bengal farmer in quarantine on boat**

<https://www.indiatoday.in/india/story/coronavirus-west-bengal-malda-farmer-quarantine-boat-1662743-2020-04-03>

"In elderly West Bengal farmer stranded over 200 km from his Nabadwip home during lockdown and needing to self-quarantine found an unusual solution: a fishing boat. Niranjana Haldar, 65, travelled to Malda last month to visit his niece. When he developed symptoms like a cough, doctors recommended two weeks of home quarantine. Problem: he wasn't allowed back into his relative's home, and he could not make the long trip back to Nabadwip during lockdown. So he moved into the boat, a partially covered vessel on the Tangan river on the boundary between India and Bangladesh.

"Due to the coronavirus, we have decided to keep him separately," said Nitai Biswas, a local resident. "We are doing as much for him as possible and providing him with rice, pulses and whatever little we can give." - Nitai Biswas. Local government authorities have promised to help. "The government is saying that it will make arrangements for me to go home," said Niranjana Haldar. "But that [can] happen only after lockdown ends." All of India is under lockdown in an effort to slow a growing outbreak of the new coronavirus. Named Sars-CoV-2, the virus causes a respiratory illness (Covid-19) that is potentially life-threatening for a fraction of those infected but has already killed over 50,000 worldwide, including 69 people in India as of this writing.

### **To tackle rising prices amid lockdown, West Bengal govt launches app to sell fish online**

<https://www.livemint.com/news/india/to-tackle-rising-prices-amid-lockdown-west-bengal-govt-launches-app-to-sell-fish-online-11585499225843.html>

"People living in Kolkata will now be able to order raw fish online as the West Bengal government launched an app to tackle rising prices amid the nationwide lockdown imposed in the wake of the coronavirus outbreak, a senior official said on Sunday. The West Bengal Fisheries Development Corporation Limited will also be selling fish in the districts from its vehicles, he said. The decision was taken after several complaints regarding the steep rise in the price of fishes were made to the office of Fisheries Minister Chandranath Sinha, the official said. There was a sudden rise in prices of fish due to the lockdown. We received several complaints regarding this. So, we decided to sell fish produced in our farms, Sinha said. All district officials have been asked to supply fish to as many markets as they can, the official said. People living in Kolkata can order fishes such as catla, rohu and parshe through the State Fisheries Development

Corporation (SFDC) app available in Google Play Store, he said.

### **To tackle rising prices amid corona lockdown, West Bengal govt in India launches app to sell fish online**

<https://www.livemint.com/news/india/to-tackle-rising-prices-amid-lockdown-west-bengal-govt-launches-app-to-sell-fish-online-11585499225843.html>

"People living in Kolkata, India, will now be able to order raw fish online as the West Bengal government launched an app to tackle rising prices amid the nationwide lockdown imposed in the wake of the coronavirus outbreak, a senior official said on Sunday. The West Bengal Fisheries Development Corporation Limited will also be selling fish in the districts from its vehicles, he said. The decision was taken after several complaints regarding the steep rise in the price of fishes were made to the office of Fisheries Minister Chandranath Sinha, the official said. There was a sudden rise in prices of fish due to the lockdown. We received several complaints regarding this. So, we decided to sell fish produced in our farms, Sinha said. All district officials have been asked to supply fish to as many markets as they can, the official said. People living in Kolkata can order fishes such as catla, rohu and parshe through the State Fisheries Development Corporation (SFDC) app available in Google Play Store, he said.

### **Overfishing drives West Bengal's hilsa fishers fp the creek**

<https://www.thequint.com/news/environment/overfishing-drives-west-bengals-hilsa-fishers-up-the-creek>

"On the eve of Maghi Purnima, while marine fishers were preparing for Ganga puja at West Bengal's Sagar Island, everyone was talking with a sense of foreboding. Abdar Mallik, secretary of Sagar Marine Matsya Khuti Cooperative Society, said, "Bajar bhalo na, Goto teen bochor ilish aschhena, (Translated: The market is not in a good state. As a result, we haven't been receiving any hilsa here for the last three years). The decline in the production of hilsa on the Indian side (West Bengal) of Bay of Bengal has been a rising concern in the recent past. Researchers claim hilsa is destroyed by over-exploitation in northern Bay of Bengal, which has threatened the livelihoods of over 26,000 fishers in West Bengal.

Unsustainable Fishing Practices In a recent study, scientists questioning the sustainability of hilsa fishing practices in the northern Bay of Bengal region. They suggested that excess of licensed fishing trawlers are responsible for declining hilsa stock. From the estuary of the Ganga to deep in the Bay of Bengal, about 15,000 trawlers are hovering in the migratory path of the hilsa as the fish approaches the river to spawn, and on its way out. The study revealed that between 2002 and 2015, even though the number of boats engaged in fishing increased by 25%,

the hilsa catch dipped by 13%. “In spite of the ban on nets with mesh holes less than 90 mm, such nets are used most of the time.

A very large number of juvenile hilsa are caught regularly. Apart from this hundreds of nets, each around 1-2km long, block the mouth of the estuary. How will the fish enter the river? asked Debasish Shyamal, district president of Dakhhinbongo Matsajibi Forum. The damage is twofold – the possibility of getting mature hilsa in the future is reduced, and it also hampers the reproduction of the fish. Shyamal further explained, “West Bengal has 158km coast line, comparatively smaller coast line than others but production rate is higher than other coastal states. Government is always pushing to increase production numbers without thinking the environmental consequences. In 2012 hilsa production in the state was 8510 tonnes. According to fisheries department data 14203 tonnes hilsa caught in 2016.

As result trawlers involved in destructive fishing practices to increase production numbers. Bottom trawling is prohibited up to 12 nautical miles from the coastline but small fishers alleged that trawlers start trawling just 1km from the coastline that threatened life of traditional small fishers. Moreover, trawler owners claim they do mid-level water trawling but in reality it is similar to bottom trawling. Professor Sugata Hazra, director of School of Oceanographic Studies, Jadavpur University further elaborated: “In case of Tamil Nadu, after 12 nautical miles from coastline you will get deep sea but in northern Bay of Bengal after 12 nautical miles water level is shallow as this area fall under delta region. So, trawler shouldn't do fishing within 30 nautical miles from Bengal coastline to stop habitat destruction of marine biodiversity. Ban Without Surveillance In order to increase production of hilsa and other fishes, every year Fisheries Department of Government of West Bengal issues notifications to control fishing. According to circular, from 15 April to 31 May, fishing is prohibited in the sea and adjoining areas. Moreover, a special ban is imposed specifically for the conservation of the hilsa during 15 September to 24 October.

This system was initiated for the undisturbed breeding of hilsa. Besides fishing, selling, transporting and hoarding of hilsa, less than 23 cm long hilsa is prohibited. However, Debasish Shyamal of Dakhhinbongo Matsajibi Forum said,

“This is just an eyewash from state fisheries department. Accepting that the ban is not obeyed by some fishers, a fisher working in trawler at Diamond Harbour in South 24 Parganas district, who wished to maintain anonymity, claimed, “A mature hilsa weighing between 700 grams and a kg but we don't obey any rule once we get large number of fish in sea. If 500 kg of hilsa is caught, large portion of that weighing below 200 grams, all juvenile fish, even we catch 50 gm hilsa which also has a good market. In the absence of government surveillance, juvenile hilsa fishing goes on. Shyamsundar Das, Secretary of the trawler owners' association - United Fishermen's Association denied all allegations against trawlers and dismissed the claim of overfishing. He told, “How do you define overfishing while government has not yet put any limitation per

trawler. We catch fish according to act and beyond 12 nautical miles which is not state subject. Das further questioned the act regarding mesh size, “The act says 90mm mesh for hilsa and 40mm for other fishes, then how could one use 90mm while others are using 40mm mesh to catch fish.

They claimed that they are trying to observe the fishing ban and prohibition on mesh size and urged government to exempt taxes from diesel. Chandranath Sinha, Minister of Fisheries, Government of West Bengal, claimed, “Overall fisheries department has successfully implemented the fishing ban during the spawning period across the coast. Few fishers from Odisha used to catch juvenile fishes and then export it to West Bengal market. He further explained that state government continuously conducting awareness campaign among fishers about ill impact of overfishing. “State has notified the ban but there's no surveillance on ground. Bangladesh has a strict winter ban during September-October.

There're many instances that they (Bangladesh) burnt nets and all fishing equipment those ventured into fishing during this period. Our government must take such steps to minimise the destruction, said Professor Hazra. Disproportionate Subsidies With the fishing space so crowded and the catch uncertain, respecting restrictions on the size of the fishing net or the ban on catching small-sized hilsa becomes a real challenge. State fisheries department has started a livelihood scheme in 2013-14, there are several difficulties in implementation. Abdar Mallik, member of small fishers' union of Sagar Island alleged, “Department has started data collection about the number of fishers who depend on hilsa for a livelihood but the data is not yet available. Even vending units given to the panchayats were distributed to those who are not engaged in hilsa fishing at all. Earlier, there was a savings cum relief schemes for fishers where a fisher contributes Rs 900 and state fisheries department and National Fisheries Development Board (NFDB) also contribute same amount.

“This scheme is not active anymore. State says central government isn't giving their share, said Debasish Shyamal of small fishers' union - Dakhhinbongo Matsajibi Forum. Moreover, there is no subsidy available for small fishers in the state. “Trawlers get modernised jetty, toilets and free ice inside harbour but there's nothing for Khuti (fish landing centres) fishers. How we'll (small fishers) survive during ban period? asked Shyamal. State fisheries minister claimed, “All fishers in the state get Rs 2 per kg rice throughout the year. If anyone left out of the list we will definitely include them. Many fishers in South 24 Parganas alleged that benefits announced by the government does not reach all sections.

“The trend that we are seeing is most fishermen migrate out of Bengal to Andhra Pradesh and Kerala for better livelihood, Abdar Mallik claimed. Moreover, researchers claim there has been an overall decline in natural fish stock in all of the major river transboundary river systems across India and Bangladesh that impacted traditional small fishers. The Bangladesh government has introduced an extensive hilsa management action plan to increase hilsa production not only

by conserving the juveniles but also by protecting the brood fish during breeding seasons by imposing a ban on fishing and restricting the mesh size. The Bangladesh Government also offers vulnerable group feeding programmes for underprivileged fishers during the ban period. “If state government support fishers with alternative scheme during ban period like Bangladesh do, we can successfully conserve hilsa as well as livelihoods of fishers, said Professor Hazra.

### **Tiger kills crab-catcher in West Bengal’s Sundarbans**

<https://www.outlookindia.com/newscroll/tiger-kills-crabcatcher-in-west-bengals-sundarbans/1762618>

"A 52-year-old crab-catcher is suspected to have been killed by a tiger in Sundarbans National Park in West Bengal's South 24 Parganas district, police said on Monday. Basudeb Sarkar and two other crab-catchers from Kumirmari village in Sundarban Coastal Police station area had ventured into the national park to catch crabs on Sunday, an officer said. One of the crab-catchers, Swapan Mondal, said the tiger attacked Sarkar from behind and dragged him deep into the forest, he said. However, Sarkar's body is yet to be found, the officer said.

"Prima facie, it seems the trio did not possess permits to catch crabs in the forest and had illegally entered it. If that is the case, the kin of the deceased will not be eligible for compensation," a forest official said. The export of crabs from Sundarbans to China has taken a hit due to novel coronavirus outbreak. However, with crab markets reopening in Singapore and Hong Kong, crab-catching activities have resumed in the region, sources said.

### **West Bengal govt to set up a world class food processing centre to optimise business of marine products**

<https://economictimes.indiatimes.com/news/economy/agriculture/west-bengal-govt-to-set-up-a-world-class-food-processing-centre-to-optimise-business-of-marine->

products/articleshow/74613383.cms "Bengal government is all set to enter into a collaboration with the Arizona State University to set up a world class diagnostic laboratory and also a food processing centre with the Oceanic University to optimize the business of marine products between India and the USA. This was revealed by Dr P K Mazumdar, advisor to the chief minister Mamata Banerjee on agriculture & allied sectors at the 5th Food Processing Conclave organized by CII in Kolkata today.

Mazumdar said that the Bengal government has made a decisive “paradigm shift in the food and agri geography by shifting the focus from increasing yield to maximizing capacity building of small and marginal farmers by risk mitigation strategies, minimum support prices for essential crops, building 186 Krishak Bazars, warehouses, cold storages, water storage schemes, river lift irrigation, check dams, distribution of solar irrigation pumps to marginal farmers at nominal or no prices, crop insurance etc. Dr Mazumdar said that the West Bengal government “actively

encourages FPOs and its focus is on improving productivity and production of crops on demand of the industry which would make the farming vocation “productive and economically viable. He added that there are opportunities of investors in the horticulture, dairy, fisheries, animal husbandry spaces in the state and that West Bengal.

He requested industries to come forward with their views on the incentive policies of the government. ""One of the leading agri suppliers in the world, Thailand has taken affirmative steps in increasing productivity in this space through the Thailand 4.0 model, the Eastern Economic Corridor (EEC) and the Food Innopolis, Ms Sweeta Santipitaks, Consul General, Royal Thai Consulate General in Kolkata said while addressing the stakeholders and Farmer Producers Organizations (FPOs).The Consul General spoke extensively about how her country has taken the locational and climatic advantages to become a \$6.2 billion agri business industry with the help of Thailand 4.0 model and creating the EECs for innovation and digitization. Thailand, according to the Consul General, has been able to create a nurturing ecosystem for innovation, provide incentives to strengthen business by creating the Food Innopolis which focuses on cutting-edge research, innovation for food processing among others.

She invited Indian investors to visit the EEC and Food Innopolis to learn best practices in this vertical. Speaking at length about how the industry can leverage opportunities with the FPOs, Mr Awadhesh Kumar, General Manager, NABARD said that the FPOs need support of the stakeholders in terms of training and capacity building as they are not “traditionally business people and “need to understand the demands of the market.

The General Manager of NABARD called for the support of financial institutions for capital disbursement to the FPOs who usually have difficulty in getting capital due to poor track records. He urged CII to create linkages between FPOs and the industry to take forward the Government of India's target of promoting 10000 FPOs and also requested the state government to firm up a policy for these organizations who, according to Mr Kumar, need the support of financial institutions, academia and the government to become a strong stakeholder in the agri geography.

### **Here’s how West Bengal’s aquaculture boost is damaging marine ecosystem**

<https://www.youthkiawaaz.com/2020/03/heres-how-bengals-aquaculture-boost-is-damaging-marine-ecosystem/>

"Fishing for Catastrophe, a report published by Changing Markets Foundation in October last year, revealed that every year, billions of sea fishes are dried, pressed and ground into oil and fishmeal. The majority of this material is then fed to other farmed fish or aquaculture industry. Based on findings in India, Vietnam and Gambia, the report presented damning evidence that the production of fishmeal and oil for use in the global aquaculture industry is destroying natural fish stocks, marine ecosystems and traditional livelihoods as well as undermining the food security of

vulnerable communities. In 2016, 69% of fishmeal and 75% of fish oil were used for seafood farming globally.

Demand for fish is growing more rapidly than the human population. Aquaculture currently accounts for roughly half of world fish consumption and is projected to grow even further. Researchers claim that farmed fishes are expected to contribute to an increasing share of global fish consumption, reaching about 60% of the total in 2030. FAO is estimating that 33% of stocks are fished at biologically unsustainable levels. India is one of the world's leading aquaculture producers and holds a dominant role in global fisheries, owing to its approximately 7,517 km of coastline. India exports 1.05 million tonnes of marine fish every year. It is also the world's second-biggest exporter of prawns. According to the government data, West Bengal has 405,000 hectares of brackish water that making it the largest area in the country for potential shrimp production.

Marine Products Export Development Authority (MPEDA) statistics says that the production of shrimp in West Bengal reached 76,534 tonnes in 2017-18, up from 28,000 tonnes in 2007-08.

As aquaculture production is increasing in the state, the demand for fishmeal is also rising. As a result, trawlers are engaging more into bottom trawling, and even smaller fishers are also forced to catch small aquatic creatures to feed local fishmeal factories. Sanatan Bhuiya, a local fisher of Haripur in East Medinipur, claimed, “trash becomes cash for us. Earlier, the local fishers didn't get any buyer for these trash fishes, but now, agents buy trash fishes from fish landing centre itself. “They take everything and send it to local fishmeal factory at Juneput, and we get twenty rupees per kilogram, Bhuiya added.

There are six fishmeal factories in East Medinipur district. However, there are many fishmeal units developed in North and South 24 Parganas in past decades. In West Bengal, significant quantities of food rather than trash fish are being diverted to the fishmeal factories. Debasish Shyamal, president of Dakhhin Banga Matsajibi Forum, claimed, “some small fishers took this as an alternative to compensate their earning, but damages are done by trawlers. They have put their (small fishers) livelihoods at risk. He further elaborated, “Government is always pushing to increase production numbers without thinking the environmental consequences. Moreover, Union Minister for Finance Nirmala Sitharaman in her Budget speech said the government aims to raise fish production to 200 lakh tonnes by 2022-23 while there is nothing left in the sea, many species vanished, illegal trawling overexploited the natural fish stock.

## **West Bengal: A fish called hilsa**

<https://timesofindia.indiatimes.com/city/kolkata/a-fish-called-hilsa/articleshow/74250388.cms>

"Have you ever wondered exactly how many bones your favourite one-kilo hilsa has? Well, it has around 46-48 vertebrae, lots more than humans, and roughly 1,500 smaller bones. This includes the deadly-looking spear-shaped "pin bone freely lying "floating bones within the fish muscles. Salt Lake-based ophthalmologist Arnab Biswas's seven-year-old research on hilsa, arguably Bengalis' favourite fish had prompted him to first do a CT scan on the fish to understand its bone structure and, later, over several days, painstakingly count every bone it had. And this is just one aspect of Biswas's hilsa research. And to think he just wanted to write a cookbook. Starting from that, Biswas has now ended up digging up every possible detail about the hilsa, instead. For seven years, he has worked with a myriad people fossil experts, fisheries experts, oceanographers, local fishermen, just to dig up unknown nuggets about the fish. Biswas, whose work 'Way of the Hilsa', in which he collaborated with Thailand-based researcher Pratchaya Phinthong and Bangladeshi artist Md Sajedul Haque for display in the Dhaka Art Summit (DAS) in Dhaka's Shilpakala Academy on February 8, now argues that the hilsa's origin may be even older than what available research suggests.

"It is largely believed from the fossils found in Italy, Japan, Rajasthan and Mizoram that the hilsa's ancestors, the Clupeidae family [a family of ray-finned fishes, comprising the herrings, shads, sardines, hilsa, and menhadens], can be traced back to 40-50 million years, Biswas argues. But symbols traced back to the Indus Valley Civilisation denote a fish closely resembling the hilsa, he says. "I have superimposed the hilsa on these symbols, and it matches perfectly, he says. And that is not all. "If you know about Jhulelal a 1000 AD saint, the most revered deity of the Sindhi Hindus and revered by Muslims as Zinda Pir, you'll know that he travels on a fish on the Indus river.

This was the palla, the local name of hilsa in Sindh. Even in the Ajanta caves, in the pictorial representation of the Monkey God in Bodhisattva, there are fish visible on the river. And they, too, have the same shape, he says. "The palla fish were all believed to come from the Saraswati basin. Also consider the spread of the fossils from Italy to Mizoram, he says. Biswas, who along with his wife and son, has been travelling to the coastal belts of India, Bangladesh and Myanmar to dig more details, says too little is being done to save the fish. "From my understanding the Hilsa will always come back to the place where it was born. In their life span of 4-5 years, they will make three to four attempts to swim upstream in the river to breed. This is essential for many reasons, he says.

"When the Hilsa swims against the tide on the river to find a breeding place, it eats very less. It also forms polyunsaturated fatty acid. It also urinates more leaving out the toxins from the body. And due to the swimming, the muscles are softer. So, the taste is basically a culmination of all these, he argues. Another thing to consider is what hilsa feed on, Biswas says. "I tried to collect

plankton samples from a depth of 40 feet in the Ganges. This is what the hilsa feeds on, primarily. However, due to pollution, their natural food resource is now getting sparse, he adds. “Historically, we know that hilsa swam upstream 1,500km in the Ganges, up to Allahabad. In the Sindh river, it travelled 750km upstream till Multan. Now, that is no longer the case. Instead, we are fishing them from the seas and have set up the Farakka barrage. And by artificial production of hilsa, we are playing havoc with their in-built ‘GPS system’, which allows them to swim thousands of kilometres to breed, he says. It’s no wonder, he says, that people often complain that hilsa these days don’t taste as good.

The changing patterns of hilsa migration which has seen disruptions is a large part of Biswas’s work, with Phinthong and Haque. “I had been in Rangoon and up along the Irawati river, also to several places in Bangladesh, he says. Similarly, Phinthong and Haque have travelled to Farakka several times. “Viewed in isolation, the Farakka barrage, built in 1975, may seem to be one issue. But this is symptomatic of a larger issue of creating man-made obstacles on their migratory paths, which has large-scale implications. The other factor, he adds, which may push hilsa to oblivion is the fishing of khoka-ilish or immature hilsa. The Bangladesh government has imposed a fortnight-long fishing ban immediately after Laxmi Puja, he informs, just to stop this. Biswas says it is a “rarity for a fish to be so fused with the socio-cultural ethos of Bengalis. “Recently, in Bangladesh, they tried to start a tradition on Poila Baisakh the Bengali New Year to have Panta-Ilish. This became so popular that the government had to step in to remind people that this wasn’t Bengali culture. But what the government was trying to do, and rightly so, was to stop fishing of khoka-ilish. In Bengal, too, we have witnessed similar efforts by the government, he says.

“Now, compare this with the much older ritual in Bangladesh’s Faridpur of having Hilsa roe with puffed rice on Dashami, after immersion. That was the last time they would eat hilsa, starting again only from Saraswati Puja. In Bengal, jora-Ilish or a pair of hilsa is offered in the Puja. Now we understand the reason why people stopped having hilsa in this period. This was breeding time. This window allowed newborn hilsa, called jhatka, to swim back to the seas, he says. He signs off with an interesting question: If people could do it then, why not now?

**West Bengal: East Midnapore’s crab export economy poorer by tens of crores of rupees**

<https://www.telegraphindia.com/states/west-bengal/coronavirus-halts-crab-export/cid/1742995>

"The novel coronavirus outbreak that has spread from China's Wuhan has left East Midnapore's crab export economy poorer by tens of crores of rupees. The Bengal district that has a nearly 100km coastline exports more than Rs 100 crore worth of crabs and Rs 2,000 crore worth of prawns internationally every year. A bulk of the crabs' consignment is sent to China during the Lunar New Year festive season. But in the wake of the deadly virus outbreak in China, East Midnapore's crab exports have come to a halt impacting local farmers' incomes by more than 50 per cent. "January-February is the peak export season for crabs, said a district fisheries department official on Wednesday, explaining that at least 30 per cent of crab exports take place over these two months.

"Major Chinese festivals take place during this time, so the demand is high because crabs are a delicacy. Not this year, however, he added. District officials said that although no official instruction had been issued by the shipping ministry regarding freezing commerce with China, traders had themselves taken such a decision over the past couple of weeks in light of the rising number of coronavirus cases. "Haldia port, for example, has told all its importers and exporters that if any ship arrives from China, it will be isolated and disallowed from unloading. Its crew won't be allowed to mix with local staff before all health checks are done, said Haldia port GM (marine) Udayan Ray. "Following the instructions, traders reduced the commerce by themselves, even though there is no government instruction yet, he added. Sources said that other than Haldia port, seafood exports from East Midnapore are routed to China through Chennai and Calcutta ports. On Wednesday morning, members of the East Midnapore Crab Farmers' Welfare Association submitted a memorandum at the office of the district fisheries department mentioning that their incomes had dropped by over 50 per cent in the past month.

"The Chinese exports used to be our lifeline. Now that it has stopped, we need help, said a farmer, adding that roughly 5,000 fish farmers and more than 10,000 fishermen had been impacted by the fallout of the coronavirus on the local economy of East Midnapore. "Earlier, we used to export crabs at Rs 1,200 a kg. Now, we have lowered the price to Rs 600 and still there are no buyers, said 45-year-old Anirban Kamila from Nayachar. Sources said the impacted areas included the brackish waters of Haldia, Nayachar, Contai, Khejuri and Ramnagar. "Vietnam buys crabs from us, but they only purchase female crabs because of their culinary value. So half of our yield is going to waste, he added. Although the crab economy has taken a severe hit, sources said the local prawn export business was doing slightly better owing to the presence of other buyers in the market. "There are several interested countries other than China, said exporter Kamdev Jana. Assistant director (fisheries) Ashim Mahanta said: "We don't have the funds to assist them right now. We will take up the issue with state-level officials soon.

**West Bengal: Fish processing and marketing, to boost employment opportunities:Amit Saroagi**

<http://www.uniindia.com/fish-processing-and-marketing-to-boost-employment-opportunities-amit-saroagi/east/news/1873474.html>

"Mr Amit Saroagi, Managing Director, Anmol Feeds Pvt Ltd, on Saturday welcoming the measures taken in the Union Budget 2020-2021 about the agriculture and fisheries sector. "" I have always maintained that fish is the highest and easiest profit-making commodity and it is a sector that can employ numerous youths, "" he said. "" The government has also realized the potential of the sector and proposed schemes that will not only benefit the sector but the overall economy of the country. The adequate focus has been given to the marine fishery resources as well, "" he added. "" The 3477 'SagarMitras' and 500 fish farmer organisations, as well as fish processing and marketing, will boost employment opportunities in the sector.

"" "" The aim to increase fish production to 200 lakh tonnes by 2023 will ensure northward growth. Enhancing fishery exports will also add to the growth. "" "" The expansion of agricultural credit to Rs 15 lakh crore will only mean more financial aid for farmers and improve the sector. "" "" However, the livestock feed industry was expecting an address on the raw material deficit as well as pricing issue that has been plaguing the industry for quite long now and offer some relief. Emphasis should have also been given to farmer's price realisation issue in the poultry sector, ""he noted. "" The introduction of Kisan Rail by Indian Railways for quick and easy transport of perishables across the country and Krishi Udaan by the Ministry of Civil Aviation on international and national routes will immensely help improve value realisation, especially, in the North-East states and tribal districts. This will uplift the sector further, "" he stated.

### **West Bengal: 63 Indian fishermen freed from Bagerhat**

[jailhttps://www.newagebd.net/article/98077/63-indian-fishermen-freed-from-bagerhat-jail](https://www.newagebd.net/article/98077/63-indian-fishermen-freed-from-bagerhat-jail)

"Sixty-three Indian fishermen arrested for illegal entry into Bangladesh maritime boundary in October last, were freed from jail here on Wednesday following a court order. The jail authorities handed them over to officials of Indian embassy on Wednesday in presence of the representatives of district administration and police. The fishermen, residents of different areas of South Chabbish Pargana of West Bengal, will leave for their country from Mongla in their own trawlers, said Golam Dastagir, superintendent of Bagerhat district jail. Members of Bangladesh Navy detained the Indian fishermen along with five trawlers near Fairway Boya area in the Bay of Bengal on charge of intruding into Bangladeshi maritime boundary in different times of October last. They were handed over to police and separate cases were filed against them. Later, they were sent to jail from October 2-23 last year. Additional District Magistrate Md Shahinuzzaman said that the arrested were freed from jail following an order from the home ministry after completing all the legal procedures. The jail officials said 54 other Indian fishermen were now in the jail and legal procedure was underway to send them back to their

country.

### **West Bengal: Tiger kills fisherman in Sundarbans**

<http://www.uniindia.com/tiger-kills-fisherman-in-sundarbans-in-west-bengal/east/news/1868492.html>

"A tiger killed a 33-year-old fisherman in Matla forest range of Basanti block of South 24 Parganas district. Sources said that one Sushil Bala, a fisherman of the village number 3 of Jharkhali, went for fishing with his two sons in a boat on January 27 in the Sundarbans. A tiger lurking in the dense forest pounced on Sushil's son, Barun Bala. Instead of retreating, Sushil and his other son jumped on the tiger with a stick to free Barun from the big cat.

### **West Bengal: Coastal erosion threatens Indian Sundarbans**

<https://www.gulftoday.ae/opinion/2020/01/21/coastal-erosion-threatens-indian-sundarbans>

"Local villagers have created a tall barrier of mud and rocks and the government of West Bengal has built a long concrete structure. But this has not prevented large-scale coastal erosion and sea-level rise day after day and year after year in the Indian part of the Sundarban mangroves. There are alarming and life-threatening consequences. Humans and tigers are facing shrinking habitats with the ocean swallowing up land in the world's largest mangrove. This region in the Bay of Bengal consists of 102 islands, about half of them inhabited. The sea level has risen by an average of 3 centimeters a year over the past two decades in the Sundarbans, leading to one of the fastest rates of coastal erosion in the world. Homes have been inundated and ground soil contaminated by salt water forcing residents to relocate. Tiger hunting grounds have shrunk, leading them to target humans and livestock alike.

At the same time, villagers are venturing into tiger territory, putting them at even greater risk of tiger attacks. Sundarbans is the world's largest contiguous mangrove forest and is a designated world heritage site. The habitat supports approximately 4.37 million people. Research shows that it is believed the Sundarbans has soaked in millions of tonnes of carbon dioxide. However, the Sundarbans faces several challenges due to climate change. Experts say that with rising sea levels, islands are disappearing and the increasing salinity in the water and soil has severely threatened the health of mangrove forests and the quality of soil and crops. Additionally, there have been serious disturbances to hydrological parameters and change in fishing patterns, resulting in disastrous consequences for fishermen. Frequent cyclones and erratic monsoon rain pattern are damaging ecology and humanity.

According to the Climate Hot Map offered by the Union of Concerned Scientists (UCS), without the mangroves of the Sundarbans to serve as a buffer, more frequent and intense storms are likely to pose a growing danger to the residents of Ganges basin including cities like Kolkata

(Calcutta). Another study, 'Living on the Edge: Climate Change and Uncertainty in the Indian Sundarbans', points out that the delta faces significant climatic and other ecological challenges (e.g. disappearing mangrove forest, islands affected by rising sea levels, erratic rainfall and cyclones). The residents are largely landless subsisting on agriculture and fishing. Poverty and deprivation are both high, with migration emerging as a major development issue in recent years. In the past decades, climate change stressors such as a rising sea level, land erosion, erratic patterns of rainfall and temperature have been profoundly changing the ecology, lives and livelihoods in the Sundarbans.

The study states that climate change related impacts and uncertainties are increasing with time as documented by local people and through scientific data. However, it points out that there are some seeds of change and emerging alternative pathways, "There have been experiments between agricultural scientists, non-governmental organisations and local people to bring back salinity resistant traditional paddy crops. These could bring about changes in the agricultural practices which can help farmers to build climate resilient crop production systems, especially those who have land which is not yet eroded. There are also similar experiments around culturing different fish and prawn species that can tolerate salinity. Similarly brackish aquaculture can be a sustainable options for the islanders as the market players like exporters, are showing interest in this alternative.

While these alternative pathways can help build local resilience it is important that they are accessible and affordable to the poorest of the poor, especially in a region where most of the people are below the poverty line. On the Bangladeshi side of the Sundarbans, a recent study has warned that the Royal Bengal Tigers could be extinct within 50 years because of the constant rise in sea levels, and climate change. The study titled 'Combined Effects of Climate Change and Sea-Level Rise Project Dramatic Habitat Loss of the Globally-Endangered Bengal Tiger in the Bangladesh Sundarbans', has revealed that the constant rise in sea levels and climate change could bring a catastrophic situation to the mangroves of the Sundarbans; the iconic Bengal tiger's last coastal stronghold and the world's biggest mangrove forest. The study, carried out by a team of Bangladeshi and Australian scientists, was published in the journal 'Science of The Total Environment'. The team used computer simulations to assess the future suitability of the region for tigers and their prey species, using mainstream estimates of climatic trends from the Intergovernmental Panel on Climate Change.

### **West Bengal: The Sundarbans: frontlines of climate change for tigers and people**

<https://india.mongabay.com/2020/01/the-sundarbans-frontlines-of-climate-change-for-tigers-and-people/>

"The Indian part of the Sundarbans, the vast mangrove forest in the Bay of Bengal, consists of 102 islands, about half of them inhabited. That may not be the case for much longer. The

villagers have raised a tall barrier of mud and rocks, and farther out to sea the West Bengal state government has erected a white concrete structure to prevent the vigorous erosion. But these measures haven't stopped the approaching water from carving away large chunks of land, year after year. Saktipada Bhuinya looks out over the ocean that surrounds Sagar Island. He told Mongabay that the sea level often rises above the barrier at high tide, the water rushing over his floors. "I'll give the house another year, he said. After that, Saktipada and his family of six will have to move to a higher part of this mostly flat island, where they'll stay under tarpaulin tents with other climate refugees.

"We have no money to buy new land. We're poor people, Saktipada said. He's not alone. Tens of thousands have already lost their homes in the Sundarbans. Each year it becomes harder for the 160,000 people living in Sagar Island's 43 villages to resist the rising water. Cyclones and storms, which regularly pass through the Bay of Bengal, have become more frequent. Five years ago, the high tide broke through all the barriers on the island's eastern side, ruining thousands of houses and rendering farmland unusable through high salinity. Through centuries the tides have formed the Sundarbans; the islands vanish and reappear, in a natural rhythm. But over the last couple of decades the variations have become more extreme, and the pace of erosion here is considered to be the world's highest. The locals have tried to adapt. Those who farm have begun cultivating salt-resistant strains of rice. For others, overfishing has made for leaner catches, and the shrinking coastline threatens the tradition of sun-drying fish on the beaches. Saktipada has fished all his life, but his son won't carry on the tradition; like many young people from the Sundarbans, he's moved to Kolkata for work.

"They don't want to stay here. There is no future in Sundarbans, Saktipada says. The situation on nearby Ghoramara Island is worse. The island had one of the first settlements in the delta, but thousands have been forced to move since more than half of the land area was lost. At a glance, Ghoramara appears to be a pristine paradise: no traffic congestion, as locals ride bicycles on winding paths next to ponds with diving ducks; lush forest all around; and goats and cows grazing. Yet all of this is at risk of disappearing due to climate change. "The aggressive cyclones have an impact on the rice yield, and the salinity has increased by 50 percent on our fields, says Shankar Kayal, one of the fewer than 5,000 residents still remaining.

"I have enough land to support my family. But what happens when the sea rises further? He adds that government assistance for relocation to other islands reaches few residents. "There are just too many villagers in need of financial support. Sekh Mogammal is visiting his parents on Ghoramara. Like his older brother before him, he left the island for Kolkata, where he works as a tailor. The money the brothers make goes to support their parents back home. They need it. A cyclone whipped through just days before Sekh's visit, with winds of 100 kilometers an hour (60 miles per hour). A barrier of massive boulders held together with thick nets runs along the shoreline. It's expected to protect the island for another decade or so, but for Sekh's family it's

not enough. “The salinity in the soil will soon make it hard to grow anything. Everyone will have to move from here, he tells Mongabay.

More frequent tiger attacks Farther east, toward the border with Bangladesh, the changing climate has exacerbated another deadly threat. In this easternmost part of the Indian Sundarbans, an unknown number of Bengal tigers still roam the mangroves. (A census is underway, with a few hundred of the big cats believed to live on either side of the border.). The tigers' ancient hunting grounds have vanished with the advancing water, and the animals, which are excellent swimmers, have been reported crossing rivers and channels in higher numbers, drawn to human settlements by livestock. At the same time, villagers are forced deeper and deeper into the forest in search of a livelihood as the saltwater turns their farmland sterile. They look for honey and for crabs, and in doing so face an ever-increasing risk of encountering a tiger. Sunita Mondol lives in the village of Anpur. She's a living tale of what tiger conflicts mean in reality.

Across the Gomti River from her home lies vast wilderness, stretching as far as the eye can see. The forest department has erected a fence several meters high along the mangroves and clad the riverbanks with nets. These are temporary solutions to prevent tigers from swimming across the river and into the village. Three years ago, Sunita's husband, Paresh, ventured into the forest with two friends to fish for crabs. A tiger leaped into the low-lying boat that the men were fishing from, and killed Paresh. Since the incident, the couple's son, Atin, 26, has been the family's breadwinner; he pulls a rickshaw in the village.

The attack didn't just leave Sunita bereft of her husband. It also made her an outcast in a society where being a “tiger widow carries its own stigma. It's said that a person attacked by a tiger has invoked the wrath of Bonobibi, the guardian spirit of the forest. The widows are sometimes called swami-khego: those who eat their own husbands. Sunita used to be popular in the village, where she would socialise with neighbors. Now she's lost her circle of friends, she tells Mongabay. “When my husband was still alive, people would come for tea. Nobody comes anymore, she says. “I am completely empty inside. It's estimated there are hundreds of tiger widows, or bagh-bidhobas, in the villages throughout the Sundarbans. Atin wants the family to move to Kolkata. Sunita agrees; life in the swamps has become too harsh.

“The tiger attacks increase. They need more food and have lost all respect for humans, Atin says. The relentlessly encroaching sea has also driven saltwater crocodiles, venomous snakes and even sharks closer to human settlements. Atin says his brother-in-law died and his sister was in a coma for several days after being bitten by a cobra. Living day by day Life insurance coverage from the state is available for tiger widows, but it only applies within the regulated fishing areas in the buffer zones, and not in the core areas of the Sundarbans National Park and Tiger Reserve. And since fishing is more profitable in the more remote areas deep within the mangrove forest, most fishermen aren't covered.

The West Bengal government prohibits fishing in the core areas of the park and reserve, and permits it in the buffer zones, but only with a license something most fishermen lack because of the cost. Tourism activities associated with the reserve have further restricted the area in which fishing is allowed. That's left the tiger widows, already socially ostracized, increasingly reliant on NGOs for financial support, or else forced to fish or gather honey deep in the mangroves leaving them vulnerable to the same fate as their husbands. Aparajita Mondol lives in the nearby village of Rajat Jubilee. She became a tiger widow a few months ago when her husband, Ravi, and two other fishermen set off for what was meant to be an eight-day fishing trip. Early on the second morning, as Ravi prepared breakfast, a tiger jumped from a sandbank onto the boat. In the commotion, Ravi and the tiger fell into the river. The other fishermen splashed the water with their oars to scare off the tiger, but by then Ravi had sustained fatal wounds to his throat and the back of his head.

“I found out around 10 o'clock, and went down to the jetty and waited for his body to arrive, Aparajita tells Mongabay. Aparajita has two daughters, 16 and 18, both of whom are married and live with their husbands. Aparajita has moved in with her parents, who support her both financially and mentally. Her gaze is empty as she stares at the clay floor of her parents' home. “She has stopped talking, says her mother, Anima Barkandaj. “Traumatised. Ravi was covered by insurance, so the family is entitled to about \$1,500. The money will sustain them for some time, but not for long. “I've never fished in the river or in the forest, but now I may have to, Aparajita tells Mongabay.

“I need to make money. Anima shakes her head. “The tigers have become completely unafraid of people. They see people on boats and jump at them, she says. But the family has neither savings nor fishing gear, and relies on a tiny patch of land to grow food. “We live day by day. It's all about making sure that the family is getting by, Anima says. ‘Humans are easy prey’ In an experiment to deter tigers from attacking people, fishermen and honey collectors have donned face masks on the back of their heads to trick the cats, which often lunge at their prey from behind. Electric fencing has also been used against tigers entering villages. These measures worked initially, but not anymore, says Niranjana Raptan, a former poacher who now guides tour groups around the mangroves.

He reckons the shortage of freshwater has forced the tigers to consume brackish water, whose salt is said to make the cats more aggressive. “What we see is old tigers with worn-out teeth that become man-eaters, he tells Mongabay. “Humans are easy prey. We don't run or swim fast. About 20 people a year are killed in tiger attacks in the Indian Sundarbans, according to government statistics. But Niranjana suggests the official figure is only for those killed outside the national park, and that just as many may be killed inside the UNESCO World Heritage Site. Niranjana says one way the government can address the immediate conflict between humans and tigers is to prohibit crab fishing, but concedes that it's “very lucrative for communities whose traditional livelihoods are fast disappearing. That's only a stop-gap measure, though. Satellite

pictures show that the sea level has risen by an average three centimeters (1.2 inches) a year over the past two decades in the Sundarbans, well above the global average.

During that period, four islands have completely disappeared, and 6,000 families have become climate refugees. In the world's largest mangrove forest, the tigers and snakes may pose the most immediate danger. But it's the inevitability of a changing climate that threatens the very state of the Sundarbans and its inhabitants, both human and wildlife. - With the ocean swallowing up land in the world's largest mangrove forest, humans and tigers are being squeezed into an ever-shrinking space in the Indian Sundarbans, with deadly consequences. - The sea level has risen by an average of 3 centimeters a year over the past two decades in the Sundarbans, leading to one of the fastest rates of coastal erosion in the world. - Residents of the dozens of islands in the Indian part of the Sundarbans have seen their homes swallowed up by the sea and their farmland poisoned by saltwater, forcing many to relocate. - The sea has encroached into the tigers' hunting grounds, pushing them to target humans and livestock alike. At the same time, villagers are venturing deeper into tiger territory, putting them at even greater risk of tiger attacks.

### **West Bengal: National Platform for Small Scale Fish Workers (Inland) NPSSF(I) Submits Comments on Draft NFDB Bill 2019 Grave Concerns & Objections Raised to Protect Livelihood Interests of Small Scale Fisher People**

"National Platform for Small Scale Fish Workers (Inland) has, in its submission on the Draft NFDB Bill 2019, first and foremost raised objections to the manner of circulation of the draft bill that denies the small scale fishing communities their rights to access, consider and comment on the draft bill. NPSSF(I) has also demanded unequivocal commitment of NFDB to protect and promote the interest of small scale fisheries as against the onslaught of private investors, business and corporate houses to be enshrined in the Draft Bill NPSSF(I) has further criticised the non-participatory nature of the NFDB Board proposed in the Draft Bill and demanded adequate representation of the fishing communities as well as of the states in the NFDB Board.

NPSSF (I) has also raised its strong objection in making the NFDB Act a Super Act that violates the jurisdiction of existing or proposed Central and State Legislations on fisheries and fisheries related issues and transgresses Constitutional allocation of subject matter of laws made by Parliament and by the Legislatures of States as directed under Article 246 of the Constitution read with the Seventh Schedule of the Constitution. 1. The National Platform for Small Scale Fish Workers (Inland) is shocked to observe that the Draft NFDB Bill 2019 is circulated for comments in English, depriving millions of fishers, fish farmers and other fish workers, who are the primary stakeholders, of their rightful access to the draft of a national legislation having profound impact on their livelihood.

We demand that the Draft Bill should be translated in all the regional languages of our country and circulated to fishing communities and their organisations through Central and State level

fisheries department offices and institutions. 2. We are also aggrieved to observe that only 17 days' time is provided to the public for submission of comments. It is not possible to discuss the draft bill with the fishing communities in such a short period, especially when the Government in the Ministry of Fisheries, Animal Husbandry and Fisheries have relinquished their responsibility to make the draft accessible to the fishing communities. We demand that at least three months' time be provided for submission of comments on the Draft NFDB Bill. 3. The small scale fisheries, both in the marine and inland sectors, provide sustainable capture and culture practices as well as majority of employment in fisheries with more equitable distribution of income and gender balance. It is also playing a major role in the food security and nutritional status of crores of Indian people. The role and importance of small scale fisheries have been recognised by international conventions like FAO VGSSF signed by our country. Besides, the principles of sustainability, protection and promotion of fish workers livelihood, subsidiarity, gender justice, inter generational equity and precautionary principle have been accepted as overarching guidelines in the National Policy for Marine Fisheries.

The National Inland Fisheries and Aquaculture Policy to be adopted by the Government is also expected to uphold the above principles. It is also a recognised fact that the fisheries of our country is suffering from over fishing and destructive fishing from mechanised sector in marine fisheries and also from unsustainable aquaculture practices. In the inland sector the small scale fishers and fish farmers are being increasingly marginalised by a class of new entrepreneurs who are going for intensive commercial fish farming at the cost of sustainability and social equity. In view of the above we demand that NFDB should clearly and unambiguously declare its adherence to above mentioned principles as well as protection and promotion of small scale fisheries as one of its main objectives.

In this context we observe that mention of only sustainable schemes or eco-friendly practices (section 16(1)(b)) is not enough. The guidelines and objectives should be of overarching importance and adherence. This declaration of binding guidelines and objective is all the more important in view of the role of NFDB in collection of fund from both Government and private sources and providing it for development of business in fisheries (section 16.1(m) and section 19). NFDB will be turned into an instrument to corporatise the fisheries at the cost of millions of small scale fishers, fish farmers and allied workers if it doesn't function strictly under above guidelines. 4. It is also a matter of grave concern that the NFDB Board has been proposed to be much less participatory than it had been.

Most conspicuously the provision of board members from the fish workers' organisations is proposed to be withdrawn (section 8.2). Excluding the largest primary stakeholders from NFDB Board is not only undemocratic, it will make its function more dependent on and controlled by bureaucracy and private business, especially in view of the proposed provision to include any person deemed necessary for expertise or advice (section 8.5). We demand that there should be at least 5 representatives from the fishing community organisations in NFDB Board with

proportionate representation from marine and inland sectors with gender balance. 5. The shrinkage of State/UT representation in the Board from all the States/UTs to 7 on rotation basis (section 8.2) is also not acceptable. Ours is a federal country and it has to be kept in mind that NFDB has no jurisdiction of implementation of its schemes without the concurrence or proposal of the concerned states. We demand that the fisheries departments of all the States/UTs be permanently represented in the NFDB Board. 6. In view of the preponderance of government officials in the NFDB Board we propose that an Advisory Committee be formed under the Chairmanship of the Minister in charge of Fisheries, Animal Husbandry and Dairy with participation of experts and representatives from fishing communities.

At least 50% of the members of the advisory committee should be from fishing community organisations. The Advisory Committee will see whether NFDB is acting in accordance with the guidelines and advise it in the matter. 7. It is also to be mentioned explicitly in the NFDB Bill that the proposed act will abide by the jurisdictions of the Central and State Fisheries Acts (either existing or will come into being in future) as and wherever called for. 8. Apart from the above we point out the following important omissions in the Draft Bill and demand additions and alterations - Section 3(e) of the Bill states "" "fish means finfish, molluscs, crustaceans, and all other forms of marine animals and plants other than marine mammals, reptiles and sea birds; NFDB is concerned with both marine and inland water bodies and fisheries. As such the inland water bodies and aquatic life should also be mentioned in the definition of ""fish"".

We suggest the following replacement of section 3 (e) - ""Section 3(e) "fish means finfish, molluscs, crustaceans, and all other forms of animals and plants other than mammals, reptiles and sea birds found in marine and inland waters;"" - Section 3(f) of the Bill states "" "fishing vessel means a ship, boat, craft or any other vessel fitted or not with mechanical means of propulsion which is exclusively engaged in fishing and fishing related activities at sea; "" What about fishing boats used in Rivers Lakes, Dams, Estuaries, brakishwater etc.? We suggest the following replacement of section 3 (f) -""Section 3(f) "fishing vessel means a ship, boat, craft or any other vessel fitted or not with mechanical means of propulsion which is exclusively engaged in fishing and fishing related activities in marine or inland waters;""

### **West Bengal: Hungry tides of the Sundarbans: How rising seas create environmental migrants**

<https://earthjournalism.net/stories/hungry-tides-of-the-sundarbans-how-rising-seas-create-environmental-migrants>

"The rapid erosion of Ghoramara island, located at the mouth of the Bay of Bengal, has grabbed the attention of all those attempting to understand how rising sea levels and climate change are impacting lives and migration patterns. "How many times have you rebuilt your house? Sujit Mondal does not answer at first; he just gazes at the deceptive calm of the river he has to cross by boat to reach his home in Ghoramara. The 44-year-old resident of the sinking

island of the Sundarbans archipelago has clearly been asked this question more times than he can count. Finally, he answers: “At least four. Tucked under Mondal's arm are several metres of neatly rolled net tarpaulin. He has bought it for ₹1,800 (US\$25) to cover the betel leaf trees he had planted a few weeks ago. He places it in his old, mechanised boat.

During the half-hour journey to his house, Mondal speaks of storms, particularly Cyclone Aila, that wreaked havoc in the region in 2009. Tourists, journalists, researchers and climate watchers have all told him that the next cyclone will have a devastating impact on the quickly eroding island, Mondal says. Ghoramara, a sinking island the ravages of monsoon are visible as the boat reaches Ghoramara. On a thatched hut hangs a green board that reads “Ghoramara Ferry Ghat.” The board is the only constant on the island; everything else is always changing. In fact, every year, with houses and acres of land being swallowed by a hungry sea, the topography of the island alters. The total area of Ghoramara was 8.51 sq km in 1975; it reduced to 4.43 sq km in 2012. The rapid erosion of the island, located at the mouth of the Bay of Bengal, has grabbed the attention of all those attempting to understand how rising sea levels and climate change are impacting lives and migration patterns.

Ghoramara is unique in other ways too. When Prime Minister Narendra Modi demonetised all ₹500 and ₹1,000 banknotes in 2016, Ghoramara, which had no bank or ATM facility, survived on credit as there was no way of exchanging cash. Three years later, there is still no bank on the island. People make do with a post office. The last boat from the island departs for mainland West Bengal long before sunset, leaving the islanders cut off from the rest of the country at night. There is no grid-connected electricity and no din of modern life; only the sound of waves lapping the shores. Mondal shows me his betel leaf plantation, situated a few hundred metres from the sea. He says his neighbour Nantu Das's crops were destroyed after the embankments were breached by seawater.

The precariousness of their lives and livelihoods is obvious, but when asked what it is like to be living on a sinking island, the residents show annoyance. “What is the point of asking us if the state does not care?” they retort. Sanjib Sagar, the gram pradhan of the island, has maintained that issues like sea-level rise cannot be dealt with at his level. There is no proper healthcare either. Rituparna Ghati, an auxiliary midwife, says in her eight years of work, doctors set foot on the island only once, to attend a vaccination camp to prevent an outbreak of Japanese Encephalitis. Ghati is perhaps the only health worker in the entire State whose target population has reduced from 5,623 in 2011 to 4,696 now.

There is no infrastructure for institutional deliveries on the island. Her job is to ensure that pregnant women are admitted to a state-run facility on the mainland days before the baby is due. Once her work is over, Ghati heads back to the mainland. Steady migration to Ganga Sagar Given the state of affairs, it is natural that the rate of migration from Ghoramara is high. There are more women than men on every boat ride. In every other household, the men have left the

island in search of jobs. They work as labourers in Kerala or Tamil Nadu, returning only during festivals or when the rising waters destroy their homes forcing them to rebuild yet again.

Visiting Ghoramara for the first time, Pranabesh Maity, a resident of a nearby island, Ganga Sagar, drops in at a primary school to find out the drop-out rate of students. Sabyasachi Pradhan, the teacher in-charge of Mandirtala Free Primary School, is prompt with figures. “This year we have 126 children. Last year there were 136, and the year before there were 144. People know that they will have to move out and are getting their children admitted at different places, he says. Many villagers, like Mondal, are planning to earn some money and relocate to Ganga Sagar. But Maity, who has a Masters in Linguistics from Calcutta University, points out that parts of Ganga Sagar too are eroding.

And so he has a mission at hand: he plans to plant mangroves and educate children about environmental events and their impact on the Sundarbans. Map of the Sundarbans Ganga Sagar, which appears like a drop of water on a satellite map, is the largest island in the Sundarbans archipelago. Every year, pilgrims flock to the island during Makar Sankranti. Home to 2.16 lakh people and covering an area of 280 sq km, it had a high decadal population growth of 20.38% between 2001 and 2011. One of the reasons could be that people from smaller sinking islands are moving to Ganga Sagar, says Tuhin Ghosh of the School of Oceanographic Studies, Jadavpur University. Mondal wants to relocate to Bamkinagar locality on Ganga Sagar island now that his fourth house too has been claimed by the rising waters in Ghoramara.

But life there is no better. One afternoon in August, the kutchra road that separates the localities of Bamkinagar and Sumatinagar, on the eastern side of Ganga Sagar island, is muddy. People wade through knee-deep sludge to go from one house to another. The last house, which is exposed to the sea, belongs to Tumpa Mondal. She and her two daughters, one aged three years and the other six months, wait inside their hut. The tide water has receded but it has left its mark on the house. There is dampness in the air and the walls are mossy. “The house floods twice a day, she says. “We just sit on our bed waiting for the water to recede. I have added bricks under the legs of the bed. So now the bed is at a higher level.

The family has no other place to go. Sometimes they share the bed with goats when the water rises. Some areas of Ganga Sagar Dhablat Shibpur, for instance, located on the southeastern side have particularly suffered a lot of erosion in the past few years. Almost hundreds of acres are covered by mud. In the middle of this vast expanse still stand a few houses. One of them belongs to Abhijit Mondal. The 26-year-old repairs an old boat and narrates a tale that is no different from the stories of the residents of Ghoramara. They are all dependent on the sea for their livelihood, the same sea that sometimes destroys their homes. In the neighbouring village, Beguakhali, after a stormy night, locals venture out to sea to collect fish spawns. They get ₹150 for collecting 1,000 spawns. Bamkim Hazra, the MLA of Ganga Sagar, under whose constituency the islands of Ghoramara and Mousuni also fall, has no solution to the problem.

Though he was recently appointed chairman of the Gangasagar Bakkhali Development Authority, set up to accelerate development in the region, the MLA responds in the same way that the gram pradhan of Ghoramara did. “Local bodies can do nothing in this case. Only the State and the Centre can do something, he says during an interaction with journalists at a climate change workshop. The MLA spoke at length about the Gangasagar Mela, which has been declared a national festival like the Kumbh Mela. Then he spoke about saving the Kapil Muni Temple, which is the seat of an annual pilgrimage. “The sea is advancing at a rate of 15 feet a year and soon the temple will go under, he pointed out. He said a? 77 crore sea walling project was the only solution.

According to Hazra, over the past few years, about 1,120 families have relocated to Ganga Sagar from Ghoramara. These families have been given about six bighas of land on the island. Some have settled in a locality called Jibantala. Going from one house to another in the locality is a challenge because of the mud. There is no trace of a road. The last hut at the end of the stretch belongs to Sheikh Safi. He came from Ghoramara to Ganga Sagar with his wife and two children in 2017. A daily wage labourer, Safi says his grandfather had 60 bighas of land in Ghoramara. While the family insists that they had not got any land from the government, the government responded that many people have settled in the land of the forest department, and will have to wait till the land records are changed.

‘A subsiding delta’ Studies over the decades have recorded that the sea level in the area rose from 2.26 mm a year in 2002 to 12 mm in 2014 and by another 2.9 mm in 2019. All these figures are higher than the sea-level rise along the Indian coast (average increase of 1.7 mm a year). It's a well-documented fact that islands have already begun disappearing: Lohachara went under in 2006 and the uninhabited island of New Moore was claimed by the sea in 2011. At a presentation, Tuhin Ghosh points out that Ganga Sagar, Ghoramara, and Mousuni islands are part of the Hooghly River estuarine system where there has been maximum human intervention. The Farraka Barrage, for instance, changed the sediment circulation pattern. Ghosh says reduced sediment supply in the region has led to changes in river hydrodynamics and coastal erosion. “The rate of erosion here is more than the rate of accretion which is due to sediment starvation, he adds.

A report by the National Centre for Coastal Research in 2018 pointed out that West Bengal lost maximum land due to coastal erosion in the country (99 sq km between 1990 and 2016). However, the land gain in the State, due to accretion, has been only 16 sq km. An analysis of the entire Sundarbans points out that between 1969 and 2009, about 210 sq km of landmass has eroded in the region. In his book *Rivers of the Ganga-Brahmaputra-Meghna Delta: A Fluvial Account of Bengal*, river expert Kalyan Rudra quotes data from the India Meteorological Department to say that the Sundarbans experienced 367 depressions, 68 storms, and 77 cyclones between 1901 and 2012.

The most disastrous was Aila in May 2009, which claimed more than 300 lives. Rudra says Ghoramara, Sagar and Mousuni are located in the western part of the Sundarbans. Mangroves in these areas have been cleared for human habitation, he says, making these islands more vulnerable. He describes the Bengal Delta as a “subsiding delta, which means that in the western part of the Sunderbans, land has been lost to the sea and there has been no new addition of land. He also warns that cyclones in the Sundarbans will increase because sea surface temperature is rising at 0.5°C per decade in the region and the global average is 0.05°C per decade. And since the western part of the Sundarbans has no mangrove protection, it remains most vulnerable. Mousuni, which lies a few km south of Ghoramara and Ganga Sagar, is similarly exposed to the sea. Some believe that the unique sea horse shape of the island is most likely due to erosion.

In defiance of the sea at the southernmost tip of the island, where the remnants of vegetation and houses destroyed by the rising seas are still visible, a number of small resorts and backpackers' destinations have come up in suicidal defiance of the sea and its erratic ways. Suresh Bhandari has grand plans of building another resort similar to the one he already has at the edge of the sea. The locals who moved away from here after sea waters rose have allowed Bhandari to use what was left of the land to construct a resort. In the Sundarbans, people eke out a living by fishing, collecting prawn seeds, and betel leaf farming. But people at Mousuni have forayed into the tourism business.

The number of homestays in the island are only proliferating. “Suresh babu has taken up a difficult job. It might take him years to build it. Ours is complete, says Chittaranjan Dolui of Chittaranjan Royal Rest House and Hut. Dolui has taken a loan of ₹15 lakh to set up his hotel. “Please tell people in Kolkata about our facility, he says. Dolui believes that tourists will flock to the island in the winter season. It is not clear what prompted these investors to suddenly think of these islands, 130 km from Kolkata, as potential tourist destinations. As in Ghoramara, not even basic healthcare is available here. The health centre, spread over a few acres, is shut on a Friday and looks as if it hasn't been visited by a doctor in many months. Mousuni now has a 2 km concrete embankment, something which people in Ghoramara and Ganga Sagar believe will solve their problem.

The embankment constructed on the western part of the island in Baliara is almost 60 feet high and built at an angle to prevent flooding. It was built at a cost of ₹33 crore. However, when the tide is high, seawater flows into the island. Fear of cyclones By the end of October, people living on the three islands felt that the worst of the monsoons and the season's biggest storms were over. But their hopes crashed when Cyclone Bulbul made landfall near Ganga Sagar on November 9. Rudra was monitoring the movement of the cyclone and was surprised that it remained over the Sundarbans from 7 p.m. to 1 a.m.

“The locals say that it was the longest cyclone they have witnessed, he says. The islanders were saved as there was low tide and the seawater did not breach the embankments when the cyclone

made landfall, experts say. The damage caused by Cyclone Aila, which made landfall during high tide, was worse as the seawater submerged large parts of the island. The sea level during high tide and low tide can vary as much as four metres, Rudra says. Cyclone Bulbul caused widespread damage to the Sunderbans.

According to the State government, 5 lakh houses were destroyed and 35 lakh people in the coastal regions were affected. When the cyclone struck Mousuni, Chittaranjan Dolui stayed indoors. His son Tapan Dolui was at the lodge built for tourists. “Of the 12 rooms we built for tourists, four have been destroyed. Of the 30 lodges on the island, barring one or two all have suffered damage, he says. On Ghoramara, the cyclone brought many changes to the landscape including the destruction of Sujit Mondal's betel leaf plantation. After Cyclone Bulbul, Pranabesh Maity, who has planted 30,000 mangrove saplings this year, returned to his home in Ganga Sagar to interact with students? “I want to tell them how unstable these islands are, he says. “It is the sea and the rivers that have given us everything land, fish and all that the people of the Sunderbans need to survive. And someday when the rivers and sea come to reclaim everything, you have to be prepared.

### **West Bengal: What ails the tribals of Sunderbans?**

<https://www.telegraphindia.com/states/west-bengal/what-ails-the-tribals-of-sunderbans/cid/1731018>

"An unusual ladies' group discussion was in progress. Several tribal women between 18 and 80 years of age were gathered in a mud hut in Tipligheri village of the Sunderbans in West Bengal. They were discussing how most of them had lost their husbands to tiger attacks in and around forests here, how Aila and other storms have devastated them time and again, and how they actually get little help from the administration despite a slew of government schemes in place. “The rest of the Sunderbans barely cares about us and we receive little help from the panchayat, says one of them. Indeed, more than two lakh tribal people remain the most marginalised demographic group in the Sunderbans. This, despite the fact that they were the earliest settlers of the place. In the 18th century, British judge Tilman Henckell floated the Sunderbans Plan.

Under this plan, known as the first land reform initiative in the state, the vast wasteland was converted into agricultural land and the revenue was distributed among the people. The initiative, however, got derailed due to the British government's fight with the zamindars, and was floated again in 1831. This time, tribal people were brought in from what was known as Rarh Bengal Bankura, Birbhum and surrounding areas and Chhotanagpur and Odisha. The tribals cleared the forests. According to the data of the state forest department that could be accessed, between 1881 and 1916, 700 people were killed by tigers in the Sunderbans; most of them presumably tribal. Clearly, a century and more later, the trend continues.

Back to the women's gathering. What strikes one is the matter-of-fact tone in which they are describing personal loss. "My husband went into the forest. As he was collecting crabs, a tiger attacked him and he died even before we could take him to hospital, says Santi Sardar. "No report was filed with the police as we were told this would invite more trouble, besides we had already cremated him, she adds. Needless to say, she did not receive any compensation. "Most of the tiger kill stories follow the same pattern, with minor variations; for instance, in many cases the bodies cannot be found. According to our survey, there are nearly 130 tiger widows in Lahiripur gram panchayat alone, most of them tribals, said Arjun Mandal, a local social worker who worked with tiger widows in particular and tribal women in general and had organised this particular meeting.

Weeks later, he himself died in a tiger attack his body never to be found. "The level of formal education among the tribals in the Sunderbans is quite low and this reduces their chances of getting conventional jobs, which in turn enhances their dependence on forests. They also traditionally like to frequent the forests, which adds to the tiger-tribal conflict and pushes up casualty figures, explains Anurag Danda, a Sunderbans expert and former head of the Sunderbans project of WWF-India. Danda points out that though tribals were the early settlers and had the opportunity to procure land, they did not do so as a majority of them never considered agriculture as their primary livelihood. It is ironical, of course, because with time almost all the tribal groups here were pushed into agriculture. Fishery became the other livelihood option.

Sugata Hazra, a professor in the oceanographic department of Jadavpur University (JU), explains how in the Sunderbans both agriculture and fishery are suffering due to the ever increasing climatic impacts, particularly salinity and, as a result, forest dependence is increasing. He says, "With fish catch dwindling in recent times, humans are moving deeper into the forest in search of fish. The narrow canals are close to the dense forests and during low tide such situations often make them sitting ducks to tiger attacks. Indeed, about 85 per cent of tiger attacks happen during low tide and in spots close to the forest. Nilanjan Ghosh, an ecological economist and the director of the Calcutta chapter of the think tank, Observer Research Foundation, has found in the course of an ongoing research that 420 people died from tiger attacks between 2006 and 2016, and 80 per cent were catching fish or crabs at the time of attack. Maximum casualties have happened in the forest areas Jhilla 85 deaths, Pirkhali 79, Arbeshi 63 and Chandkhali 63 and a sizeable number of victims were tribals.

A senior government official who refused to be quoted observed that nearly 60 per cent of fish and crab catchers in the Sunderbans are tribal people. In the last decade or so, climate impacts have replaced tigers as the major foe of the tribals. These people have limited options for migration compared to their non-tribal counterparts. "The tribals with almost no education and skill in general mostly migrate for a limited time to various parts of Bengal to work as unskilled

labours at construction sites, brick fields, mining... says Tuhin Ghosh, a professor at JU who is also part of a migration project in the Sunderbans.

“To migrate beyond the state, you need money; most tribals cannot manage even that, says Subhash Acharya, a retired official of the state's Sunderbans department. “Tribals live in acute poverty and hardly receive any government help, Arjun had said. Achintya Sardar, who studied up to Class VIII, points out that buffeted by tigers and climate change some tribals like him have begun to venture out of Bengal though the outskirts of Calcutta remain the dominant go-to area for employment. According to the 2011 Census, the tribal population of the Sunderbans was 2, 11,927. This comprises chiefly four groups the Munda, Santhal, Bhumij and Oraon tribes. Today, however, most like to use the common surname of Sardar. The homogenisation extends beyond the last name. Instances of morog lorai (cockfights) are now few and far, and haria (local liquor) swigging is not as common.

Talking to The Telegraph at the recently-concluded Madrid climate summit, global climate lead of NGO ActionAid Harjeet Singh said: “This (losing of cultural identity) is now a recognised area under climate change impacts, and is mainly positioned under non-economic losses. Even during this summit, we are discussing how such climate triggered cultural and social losses can be prevented and the tribal groups of the Sunderbans' is a great case study.

### **West Bengal: Hungry tides of the Sundarbans: How the rising seas create environmental migrants**

<https://www.thehindu.com/sci-tech/energy-and-environment/hungry-tides-in-the-sundarbans/article30054094.ece>

"How many times have you rebuilt your house? Sujit Mondal does not answer at first; he just gazes at the deceptive calm of the river he has to cross by boat to reach his home in Ghoramara. The 44-year-old resident of the sinking island of the Sundarbans archipelago has clearly been asked this question more times than he can count. Finally he answers: “At least four. Tucked under Mondal's arm are several metres of neatly rolled net tarpaulin. He has bought it for ₹1,800 to cover the betel leaf trees he had planted a few weeks ago. He places it in his old mechanised boat.

During the half-hour journey to his house, Mondal speaks of storms, particularly Cyclone Aila that wreaked havoc in the region in 2009. Tourists, journalists, researchers and climate watchers have all told him that the next cyclone will have a devastating impact on the quickly eroding island, Mondal says. Ghoramara, a sinking island The ravages of monsoon are visible as the boat reaches Ghoramara. On a thatched hut hangs a green board that reads ‘Ghoramara Ferry Ghat'. The board is the only constant on the island; everything else is always changing. In fact, every year, with houses and acres of land being swallowed by a hungry sea, the topography of

the island alters. The total area of Ghoramara was 8.51 sq km in 1975; it reduced to 4.43 sq km in 2012.

The rapid erosion of the island, located at the mouth of the Bay of Bengal, has grabbed the attention of all those attempting to understand how rising sea levels and climate change are impacting lives and migration patterns. Ghoramara is unique in other ways too. When Prime Minister Narendra Modi demonetised all ₹500 and ₹1,000 banknotes in 2016, Ghoramara, which had no bank or ATM facility, survived on credit as there was no way of exchanging cash. Three years later, there is still no bank on the island. People make do with a post office. The last boat from the island departs for mainland West Bengal long before sunset, leaving the islanders cut off from the rest of the country at night.

There is no grid-connected electricity and no din of modern life; only the sound of waves lapping the shores. Mondal shows me his betel leaf plantation, situated a few hundred metres from the sea. He says his neighbour Nantu Das's crops were destroyed after the embankments were breached by seawater. The precariousness of their lives and livelihoods is obvious, but when asked what it is like to be living on a sinking island, the residents show annoyance. “What is the point of asking us if the state does not care? they retort. Sanjib Sagar, the gram pradhan of the island, has maintained that issues like sea level rise cannot be dealt with at his level. There is no proper healthcare either. Rituparna Ghati, an auxiliary midwife, says in her eight years of work, doctors set foot on the island only once, to attend a vaccination camp to prevent an outbreak of Japanese Encephalitis. Ghati is perhaps the only health worker in the entire State whose target population has reduced from 5,623 in 2011 to 4,696 now.

There is no infrastructure for institutional deliveries on the island. Her job is to ensure that pregnant women are admitted to a state-run facility on the mainland days before the baby is due. Once her work is over, Ghati heads back to the mainland. Steady migration to Ganga Sagar Given the state of affairs, it is natural that the rate of migration from Ghoramara is high. There are more women than men on every boat ride. In every other household, the men have left the island in search of jobs. They work as labourers in Kerala or Tamil Nadu, returning only during festivals or when the rising waters destroy their homes forcing them to rebuild yet again. Visiting Ghoramara for the first time, Pranabesh Maity, a resident of a nearby island, Ganga Sagar, drops in at a primary school to find out the drop-out rate of students. Sabyasachi Pradhan, the teacher in-charge of Mandirtala Free Primary School, is prompt with figures.

“This year we have 126 children. Last year there were 136, and the year before there were 144. People know that they will have to move out and are getting their children admitted at different places, he says. Many villagers, like Mondal, are planning to earn some money and relocate to Ganga Sagar. But Maity, who has a Masters in Linguistics from Calcutta University, points out that parts of Ganga Sagar too are eroding. And so he has a mission at hand: he plans to plant mangroves and educate children about environmental events and their impact on the Sundarbans.

### **West Bengal: Shankarpur harbour inaccessible without dredging, say Bengal**

<https://www.devdiscourse.com/article/national/756322-shankarpur-harbour-inaccessible-without-dredging-say-bengal>

"About 1200-1300 fishing trawlers are unable to offload their catch at a harbour due to delay in dredging a creek between Shankarpur harbour and Digha Mohona in West Bengal's East Medinipur district, said an official of a fishermen body. As the trawlers are not able to enter the 3-km long creek with low draft, they are moving to Odisha, Digha Fishermen and Fish Traders' Association chairman Pranab Kumar Kar said.

""There has been a delay in dredging the creek between Shankarpur harbour and Digha Mohana. About 1200-1300 trawlers are moving to Odisha as they are unable to enter the 3-km long creek with inadequate draft,"" he told PTI. Around 5000-6000 people who are associated with the Digha Mohana fish market are adversely affected, he said. Kar alleged that the state fisheries department has not carried out proper dredging for last 7-8 years. When contacted, state fisheries minister Chandranath Sinha said he is aware of the situation and the government is working on to solve the problem. ""During a recent district administrative meeting, chaired by Chief Minister Mamata Banerjee, I had flagged the issue,"" Kar said. Last year, a total catch of 1.46 lakh tonne of fish was recorded here, and of which 65 per cent was exported, Kar added..

### **West Bengal: Fisherman mauled to death by tiger in Sunderbans**

<https://www.deccanherald.com/national/east-and-northeast/fisherman-mauled-to-death-by-tiger-in-sunderbans-779372.html>

"A fisherman was mauled to death by a tiger at Pirkhali area of the Sunderbans in South 24 Parganas district, a forest department official said on Sunday. Fifty-two-year old Anil Mandal was catching crabs and shrimps along with two other fishermen when a Royal Bengal Tiger (RBT) pounced on Mondal and dragged him away on Saturday noon, the official said. The two other fishermen, who fled from the spot, later came back to the area along with forest department personnel and recovered the partially eaten body of Mondal. Eyewitnesses said, a passing tourist vessel had warned the fishermen about movement of three tigers in the area a short while ago but they could not leave the spot with their fishing nets on time. The forest official said, the department is verifying if the fishermen had valid permits for fishing activities in the area. The Sunderbans with its large mangrove forest is dotted by rivulets and canals.

### **West Bengal: NPSSF (I) demands protection of small scale fishers & fish farmers moves MPEDA not to promote bottom trawling & intensive prawn farming**

"Marine Products Export Development Authority (MPEDA) has in a recent circular stated that United States of America has banned Indian wild caught shrimp from entering USA, as such no wild caught shrimp would get export certificate to USA. Only farmed shrimp would

get such certificate. (MPEDA circular letter attached). In India wild shrimp is largely caught by bottom trawlers, which is destructive and unsustainable. It adds to the woes of small scale fishers who harvest wild shrimp by bag nets. Bottom trawlers destroy the shrimp habitats and loot away the stock leaving very little for the small scale fishers, who do sustainable fishing through passive gears. Farmed shrimp is largely produced by farms doing intensive prawn farming in violation of the Coastal Aquaculture Authority Guidelines and environmental norms. These farms are destroying our coastal lands and waters. National Platform for Small Scale Fish Workers (Inland) NPSSF(I) has moved MPEDA not to promote bottom trawling or intensive prawn farming and instead promote small scale shrimp fishers and traditional or improved traditional prawn farming.

### **West Bengal: No one to stop giant trawlers, Bengal fishermen face livelihood quandary**

<https://thewire.in/labour/no-one-to-stop-giant-trawlers-bengal-fishermen-face-livelihood-quandary>

"As the sun's rays shimmered over the sea, Baren Khurai was fastening long jute ropes to the anchors to make them ready before venturing into the sea. Khurai resides at a stone's throw away from the Bay of Bengal, in Dahasunamui village in Deshapran administrative block of Purba Medinipur district, around 180 km from Kolkata. The 65-year-old has been fishing for the past four decades, but laments that the catch has been dwindling with each passing day, deepening concerns about his livelihood. "We used to catch around 10 quintals of fish by spending almost a week at sea nearly two decades ago but now it has fallen to just 10% of it, Khurai said. "It is becoming increasingly difficult for a group of 8 to 10 people to venture into the sea and survive on paltry returns, said Khurai.

"Our children are no longer interested in fishing and are moving to other states to work as labourers. With bottom trawling in banned near-shore areas wiping out aquatic life, small and marginal fishermen in East Medinipur district of West Bengal struggle to sustain a livelihood. While some switch occupations, others work in the same trawlers that affect their traditional livelihood. Bottom trawling "The gigantic trawlers operating at the sea do bottom trawling illegally and leave nothing for us. They destroy the ecology, but nothing is done to stop them, said Khurai. Khurai's situation epitomizes the pressing issues faced by the marginal fishermen of Purba Medinipur (East Midnapore) district.

The fishermen return with lesser catch nowadays because bottom trawlers use a heavy fishing net which is dragged along the seabed to catch fish and prawns. According to environmentalists, bottom trawling damages the ecologically-sensitive sea floor."It is a very destructive process as it virtually bulldozes the seabed and destroys the entire habitat and the aquatic forms that survive on it, said Pradip Chatterjee, convener of the National Platform of Small Scale Fish Workers

(Inland) and an environmentalist. Wasted catch “The cod end of the net is small but plays an active role in chasing the catch and destroying the seabed, Chatterjee said. “The trawlers keep only commercial species and dump the rest of the catch that cannot be sold. Bottom trawling is prohibited up to 12 nautical miles from the shore. But no one follows the rules. “The administration has been a mute spectator in implementing rules. Trawlers fish even near the river mouth, ruining the marginal fishermen, said Debasish Shyamal, Secretary of National Fish Workers Forum.

“There is also the concern of food security as the trawlers collect only the export quality varieties and discard the rest, said Shyamal. “The fish that could have been served on a platter goes waste. It reduces the catch for the small fishermen. Also Read: Narmada's Largest Dam Fills up With Hunger and Homelessness in Its Wake “We are looking into the issue of bottom trawling and a meeting has been planned soon to stop it. Undoubtedly, it is destroying the flora and fauna of the sea, Surajit Baag, assistant director of Fisheries (Marine) of Purba Medinipur district, told VillageSquare.in. Administrative negligence The fishermen of Dahasanamui have grievances about the infrastructure.

“The community hall's roofs are leaking, and plaster has spalled off the walls. Venomous snakes regularly slither inside the building, said Bidyut Bar. The fishermen complain that there are no toilets. “The absence of pucca roads is another issue as buyers who come to buy fish in bulk have no easy access, said 46-year-old Bidyut Bar. Those indirectly involved in the trade also have their grievances. “We have been engaged in drying fish for the past several years and earn around Rs 200 per day; we are not even provided gloves since we get pricked by fish bones, said Shibani Bar. We have not received any support though we regularly hear about schemes launched for the benefit of fishermen. Fishermen blame a nexus between co-operatives and government officials in siphoning off funds meant for fishermen.

“They take advantage of the illiteracy of the fishermen, said Sarbeshwar Khanra, director on the board of Dahasanamui Marine Fishermen Co-operative Society Limited. “Those with clean records suffer while co-operatives involved in fraudulent practices get regular financial assistance. We do not get loans and subsidies, Khanra told VillageSquare.in. Affected livelihood Besides trawling, fishermen blame the increasing shrimp cultivation in the district for the dwindling catch. “The polluted pitch black water from the farms reach the sea through canals during tides. So we get lesser fish near the shore and have to venture deep inside to bring catch that can at least compensate the cost of our trip, said Debobroto Khuntiya (50), of Baguran Jalpai village. Subimal Bar (37), who supplies ice blocks to the fishermen for storing the catch, said that he returned home after doing odd jobs in the south for nearly 12 years, “I was forced to return because of my ailing parents, he told VillageSquare.in. He said that it was very difficult to survive.

“I make a paltry sum of Rs 100 to Rs 150, after spending hours in a thatched hut trying to protect the ice from melting. I wouldn't have returned if it were not for my family, he said, as he tried to cover himself as best as he could, with clothes that had seen better days. Fishers in trawlers Around 1,000 families were involved in fishing in Dahasunamui village till a decade ago; it has come down to about 650. While most of them are opting for other livelihoods, some are forced to work in the trawlers responsible for their plight. However, the small-scale fishermen who work in trawlers are also unhappy. Some fishermen, on condition of anonymity, said that they are pressurized for more catch and even assaulted while at sea, to meet the targets. “We've been fishing for generations but now we are on a payroll and earn around Rs 9000 a month after staying at least 24 days of a month at sea. We manage to sustain our families but we have lost our freedom, Biswanath Bar (52), who works on a trawler at Deshapran Fishing Harbor, told VillageSquare.in.

**West Bengal: They save people from cyclones, but who is saving the Sunderbans mangroves?**

<https://www.thehindu.com/news/national/other-states/they-save-people-from-cyclones-but-who-is-saving-the-sunderbans-mangroves/article29965362.ece>

"On November 9, 2019, when the very severe cyclone Bulbul made landfall at Sagar island in the Indian Sunderbans, a group of tourists found themselves stranded near the Kalash island in the violently inclement weather. They got out of their boat and took shelter in mangrove creeks, and escaped unhurt. The cyclone was so powerful that it overturned a large fishing trawler near Sagar; people in that vessel are still missing. ‘Could be disastrous’ From environmental experts to the State's Chief Minister, everyone has said that the mangroves had saved the Sunderbans from the gusty winds blowing at between 110 kmph to 135 kmph.

“It would have been a disaster if the mangroves had not been there, said Kalyan Rudra, chairperson of the West Bengal Pollution Control Board and a river expert. In fact, CM Mamata Banerjee, while touring the affected regions of the State, noted that the State will plant more mangroves. Despite this, scientists and wildlife experts and local NGOs have been highlighting the constant degradation of the mangrove forest in the Sunderbans, particularly in areas that are inhabited. The Indian Sunderbans, considered to be an area south of the Dampier Hodges line, is spread over 9,630 sq. km., of which the mangrove forests are spread over 4,263 sq. km. The latest example of an assault on mangrove forests came to light in an order of the National Green Tribunal (NGT) dated September 23, when it directed a committee to inspect allegations levelled by environmental activist Subhas Datta that the State had allocated houses under the ‘Banglar Abas’ scheme by clearing acres of mangrove forest on Sagar island.

Ongoing assault “The committee inspected and found the allegations to be true. For years, the State government has been felling mangrove trees in the name of development, Mr. Datta said, highlighting how Ms. Banerjee invited industrialists to the Sunderbans a few years ago and urged

them to invest in eco-tourism. When Mr. Datta moved the NGT in 2014, a satellite image from the Indian Space Research Organisation pointed to a loss of 3.71% mangrove and non-mangrove forest cover along with massive erosion of the archipelago's landmass. The analysis, based on satellite data of February 2003 and February 2014, shows that while a 9,990-hectare landmass has been eroded, there has been an accretion (addition) of 216-hectare landmass in the Sunderbans during the period. Tuhin Ghosh, Professor, School of Oceanographic Studies, Jadavpur University, said that mangroves have been cut not only for aquaculture, but also for building embankments and for human settlements. He explained that because of dense foliage and the close proximity of trees, the roots hold soil and mangrove vegetation becomes shields from cyclones. Pranabesh Maity, a resident of Sagar who has planted over 30,000 mangrove saplings this year, agreed that there have been numerous instances in which mangroves are being cut for making roads, building embankments, and for fisheries.

### **West Bengal: Sunderbans shield protects Kolkata from Bulbul fury**

<https://www.hindustantimes.com/india-news/sunderbans-shield-protects-kolkata-from-bulbul-fury/story-jGL5lzL3kOHkeaoKmROwSN.html>

"The Sunderbans, the largest mangrove forest in the world and home to the Royal Bengal Tiger, has once again come to Kolkata's rescue, saving the 300-year-old city from the wrath of the severe cyclone, Bulbul, that killed at least eight people and left a trail of destruction in its wake. In May 2009, the mangrove forest saved the city from the impact of cyclone Aila. "The Sunderbans with its thick mangrove forest acts like a shield. The mangroves do not just help to reduce the wind speed drastically when the storm moves through the delta but even help to break the waves and the storm surge triggered , said Sugata Hazra, professor at School of Oceanographic Studies in Jadavpur University.

The Sunderbans spans 10,000 sq km across India and Bangladesh, of which 40% is in India, and is home to many rare and globally threatened wildlife species such as the Royal Bengal Tiger and the estuarine crocodile. In India, it is confined to the southern tip of West Bengal and spreads over two districts, South 24 Parganas and North 24 Parganas. "Any cyclone, which originates in the Bay of Bengal and hits the West Bengal coast, has to pass through this mangrove forest before it can hit Kolkata. The mangrove, with its almost impenetrable and thick mesh of trees and roots, acts as a wind barrier, absorbing much of the storm's steam and leaving it ineffective, in turn, saving Kolkata, said Pranabesh Sanyal, former chief wildlife warden and ex-chief environment officer of West Bengal. He also said that the location and curvature of the Sunderban delta is such that in most cases the cyclones are diverted towards Bangladesh after they hit the mangroves. This time too, cyclone Bulbul headed towards Bangladesh after it hit the delta.

“The Sunderbans has proved its worth again. Many areas such as Sagar, Mousuni, Frazergunj and Bakkhali where human settlements have come up after clearing the mangroves have suffered extensive damage. The damage is relatively less in the eastern part of the delta where there is thick mangrove, said Abhijit Mitra, a marine scientist and a former professor of Calcutta University. The Sunderbans itself has been ravaged by humans, though. Out of the 102 islands, 54 have human settlements; the rest have forests with national parks, reserve forests and sanctuaries which are home to the only mangrove tigers in the world. It is in these human habitats that the mangroves have suffered the maximum loss over the years. “Illegal felling of trees outside the forest area for timber, infrastructure development, construction of hotels and resorts and farming has taken a heavy toll on the mangroves. The mangrove cover has depleted over the years. Of late because of the intervention of the national green tribunal and courts this has come down a bit. A few construction activities were also stalled as they were violating the coastal regulation zone rules, said Subhash Acharya, former joint director of the Sunderban Development Board.

According to the Forest Survey of India's State of Forest Reports, which are published every two years, the very dense mangrove cover, which actually acts as the barrier against such storms, has shrunk from 1,038 sqkm in 2011 to 999 sqkm in 2017 (the latest report). Similarly, moderately dense forest cover has shrunk from 881 sqkm to 692 sqkm during the same period. It is only the open mangrove cover that has increased marginally -- because of plantation and natural regeneration of mangrove on some islands. Between 2015 and 2017, only around eight sqkm of mangrove has been added.

“The mangrove has saved us. The forest department and the gram panchayats and the Sunderban affairs department have been planting mangrove trees extensively on the island and the river's embankments. The mangrove (cover) is now increasing, said Manturam Pakhira, Sunderban affairs minister. Mumbai's mangroves, spread across 8,000 hectares (6,400 hectares of government land and 1,600 hectares of private land), too, have been under threat from real estate development and infrastructure projects despite being the first line of defence against storms and increasing sea level. In 2019 alone, Mumbai has witnessed 75 cases of mangrove destruction. While 14 people were arrested and let out on bail, not a single conviction has been recorded so far. The destruction of mangroves was banned by the Bombay high court through an order on September 18, 2018, and all government agencies and private companies have been directed to hand over mangrove land to the forest department for better protection.

### **West Bengal: Rs 2 lakh compensation to kin of those killed in Cyclone Bulbul**

<https://www.orissapost.com/rs-2-lakh-compensation-to-kin-of-those-killed-in-cyclone-bulbul/>

"The death count in severe cyclone 'Bulbul' rose to 10 in West Bengal as Chief Minister Mamata Banerjee conducted an aerial survey of the affected areas in South 24 Parganas district

on Monday and later announced compensation of Rs 2, 00,000 each to the families of those killed in the storm that pounded the state two days back. Mamata Banerjee flew over the 'Bulbul'-hit areas in Kakdwip, Namkhana and Bakkhali in a helicopter and later held an administrative meeting at Kakdwip where she announced formation of a task force headed by Chief Secretary Rajiv Sinha to supervise the relief and restoration work. Banerjee underlined the immediate need to ensure clean drinking water and medicines were available in the affected areas and power supply restored.

She appreciated the way the 24 Parganas (South) administration tackled the severe cyclone and ensured minimum losses and appealed to the people to 'stay positive'. "As per the latest reports, around six lakh people have been affected. The number could go up in the coming days as we get more reports, Mamata Banerjee told reporters. "The way the district administration tackled the cyclone is praiseworthy. I don't know what would have happened otherwise, she added. Meanwhile bodies of four out of the nine fishermen who went missing after their trawler capsized off Mousuni Island in West Bengal under the impact of Cyclone Bulbul were recovered in a joint operation by the Indian Coast Guard and the NDRF, a senior Coast Guard officer said Monday.

The trawler had capsized Saturday midnight 50 metres off the coast when it was caught in the severe cyclone which made its landfall between Sagar Island in South 24 Parganas and Khepupara in Bangladesh. The bodies were recovered after sustained hunt, Commander of Coast Guard, West Bengal and Deputy Inspector General SR Dash stated. Dash said the search operation will resume Tuesday to locate the other missing fishermen who were onboard the trawler when it capsized off Mousani Island in South 24 Paraganas district.

**West Bengal: Cyclone Bulbul: Seven dead, one lakh houses damaged after storm lashes West Bengal; toll rises to 12 in Bangladesh**

<https://www.firstpost.com/india/cyclone-bulbul-seven-dead-one-lakh-houses-damaged-after-storm-lashes-west-bengal-toll-rises-to-12-in-bangladesh-7632141.html>

"The death toll from Cyclone Bulbul rose to 12 in Bangladesh and five fishermen are still missing, government officials told Reuters on Monday. Most of the victims had refused to evacuate and died due to falling trees, said Enamur Rahman, Bangladesh's junior minister for disaster management and relief. In West Bengal, seven people were killed, Javed Khan, the state's minister for disaster management told reporters on Sunday evening. About one lakh houses and standing crops have been damaged.

According to officials, electricity has been restored; telecom services are expected to be restored shortly in most affected areas in the state. Meanwhile, in Odisha, though there have been no reports of casualties so far, but extensive damage to standing crops in over two lakh hectares has been reported. Electricity and piped water supply services in Odisha, which were affected by

severe cyclone Bulbul, are expected to be completely restored in several districts of Odisha by 12 November, Office of the Special Relief Commissioner said on Sunday. The deep depression weakened into a depression over southeast Bangladesh and adjoining south Tripura at 05:30 am on Monday, according to the India Meteorological Department (IMD). It will weaken into a low during the next six hours, IMD stated in its latest update over cyclone 'Bulbul'. The deep depression over coastal Bangladesh and neighbourhood lay centred at 5:30 pm on Sunday about 170 km east-northeast of Sunderban National Park.

According to IMD, the deep depression weakened into a depression over southeast Bangladesh and adjoining Tripura at 05:30 am on Monday morning. It will weaken into a low during the next six hours said IMD. The deep depression over coastal Bangladesh and neighbourhood lay centred at 5:30 pm on Sunday about 170 km east-northeast of Sunderban National Park, reports weather agency. A meeting of the National Crisis Management Committee (NCMC), was held on Monday at the Cabinet Secretariat, New Delhi, to review Relief and Restoration work in the aftermath of Cyclone 'Bulbul' over West Bengal and Odisha.

The NCMC has assured central assistance in terms of additional stocks of food items, drinking water, health services as well as restoration of telecom and power services to affected areas. Central teams would be visiting the affected areas in both states within this week to take stock of the damages, said NCMC. Both the states have indicated that they are carrying out detailed assessment after which they may seek specific central assistance if required. Other concerned central agencies including NDRF, Coast Guard etc have also been fully involved in rescue and relief operations. Cyclone Bulbul: Seven dead, one lakh houses damaged after storm lashes West Bengal; toll rises to 12 in Bangladesh Some 30 people were injured and around 6,000 homes were partially or fully damaged, Bangladeshi authorities said.

Two fishing boats have not yet returned and relatives have been unable to contact the roughly 36 men on board, added Anwar Uddin, a local public representative in the southern Bhola district. No major damage was immediately reported in camps in southeast Bangladesh where hundreds of thousands of refugees from neighbouring Myanmar are living. India's meteorological department said the cyclone was expected to weaken but warned fishermen not to venture into the sea for the next 12 hours. Some two million people from all of Bangladesh's 13 coastal districts huddled in about 5,558 shelters on Saturday night. Outside, wind speeds rose to between 100 and 120 km per hour (62-75 mph), and some low-lying coastal areas were flooded. Wind speeds have now come down to between 70 and 80 kph , authorities said.

“It may take a couple of days to get a normal situation, Enamur Rahman, junior minister for disaster management and relief, told Reuters. About 1,200 predominantly domestic tourists were stuck on St. Martin's Island, part of the Cox's Bazar district, Rahman said. “All of them will be rescued, he said. The cyclone season in the Bay of Bengal can last from April to December. In 1999 a super-cyclone battered the coast of India's Odisha state for 30 hours, killing 10,000

people.

### **West Bengal: Cyclone Bulbul kills 10, affects 2.73 lakh families**

<https://www.orissapost.com/cyclone-bulbul-kills-10-affects-2-73-lakh-families-in-west-bengal/>

"Cyclone Bulbul, which barrelled through the coastal districts of West Bengal before hurtling towards Bangladesh, claimed at least 10 lives and affected at least 2.73 lakh families in different parts of the state, official reports said Sunday. The severe cyclonic storm, which brought in its wake heavy rain coupled with gale wind till early Sunday, uprooted hundreds of trees and snapped cables in the city and in the coastal districts of North and South 24 Parganas and East Midnapore, bring life to a near-halt. State Disaster Management minister Javed Khan said that at least 2,473 houses were destroyed and another 26,000 were partially damaged in the cyclone in the coastal districts along the Bay of Bengal, with the fishing towns of Bakkhali and Namkhana being among the worst-affected areas.

He said that while 2.73 lakh families were affected in the storm, 1.78 lakh people were moved to relief camps set up in nine places of the state. Bulbul claimed the lives of five persons in separate incidents in North Parganas alone, an official said. According to a senior police officer, a septuagenarian woman, Suchitra Mandal, died at Purba Makala village in Basirhat area of the district when a tree fell on her. Several trees were also uprooted at Gokhna village, one of which claimed the life of Reba Biswas (47). Manirul Gazi (59) was the third casualty in North 24 Parganas. He was electrocuted to death after coming in contact with a lamp post, the officer added. Two more deaths, one due to wall collapse and another after coming under a falling tree, were also reported in the district, a state government official said. In East Midnapore, too, a man died after he was crushed by a falling tree.

Two persons died in South 24 Parganas district in cyclone-related incidents, the official said. Body of one fisherman from Fraserganj fishing harbour in South 24 Parganas was recovered, a senior official of state Disaster Management department said. Eight other fishermen and four trawlers from Fraserganj were still missing, the official said. Earlier Saturday, even before the cyclone hit the coast, an employee of a renowned club in the city was killed when a branch of a cedar tree fell on him during heavy rain. The minister said that 46,000 tarpaulin sheets were distributed among people whose residences were damaged in the cyclone. Gale wind with gusts up to 135 kmph prevailed over the coastal districts of South 24 Parganas and East Midnapore and its adjoining areas in North 24 Parganas as the cyclone made landfall around midnight Saturday. Torrential rain lashed the metropolis throughout Saturday, forcing people to remain indoors. Hundreds of uprooted trees blocked thoroughfares in the state capital and its fringe areas, even as people braved the adverse conditions to come out of homes as the weather improved Sunday afternoon.

The NDRF, along with the Kolkata Municipal Corporation (KMC), police and fire personnel, is working on a war footing to clear road blockades caused by fallen trees and branches. “We have already engaged workers to clear the roads and pump out water from low-lying areas. We are hopeful our work will be over by tonight, said a KMC official. Khan said, all emergency services have been put in place to ensure that the uprooted trees are removed at the earliest. According to the IMD, the very severe cyclonic storm had weakened into severe cyclonic storm before making landfall close to Sunderban Dhanchi forest.

“Yesterday's very severe cyclonic storm Bulbul over northwest Bay of Bengal (BoB) moved northeastwards, weakened into a severe cyclonic storm and crossed West Bengal coast close to Sunderban Dhanchi forest during 8.30 pm to 11.30 pm with a maximum sustained wind speed of 110-120 kmph gusting to 135 kmph, it said. The cyclonic storm is likely to weaken into a deep depression and further into a depression as it moves east-northeastwards over coastal Bangladesh, the IMD said in a bulletin Sunday afternoon. In a tweet, Chief Minister Mamata Banerjee said, she would conduct an aerial survey of the affected areas around Namkhana and Bakkhali in South 24 Parganas.

“Due to the severe cyclonic storm Bulbul, I have decided to postpone my North Bengal visit in the coming week. Instead, tomorrow I would take an aerial survey of the affected areas around Namkhana and Bakkhali. “Later I would take a meeting at Kakdwip with administration to review relief and rehabilitation measures of the cyclone-affected people. I am also planning to visit the cyclone-affected areas of Basirhat of North 24-Parganas 13 November, 2019, Banerjee tweeted Sunday. State power minister Sovandeb Chattopadhyay said, measures were being taken to restore power supply in areas, where electric cables have been torn apart due to the cyclone. Earlier in the day, Prime Minister Narendra Modi spoke with West Bengal Chief Minister Mamata Banerjee about the situation arising out of the cyclone and assured the state of all assistance to deal with the calamity. “Reviewed the situation in the wake of cyclone conditions and heavy rain in parts of Eastern India, the prime minister wrote on Twitter.

### **West Bengal: Shrinking wetlands**

<http://www.millenniumpost.in/opinion/shrinking-wetlands-383184>

"It is established wisdom amongst concerned authorities that it is far more cost-effective to maintain the health of an ecosystem as opposed to the restoration of an unhealthy one. But just how concerned are these 'concerned' authorities in regard to the state of the environment, specifically the wetlands? Wetlands are the most productive type of ecosystems in the world that provide food, agricultural production, fisheries, water quality maintenance and recreation. Furthermore, they vitally serve as one of the key life support systems on Earth, acting to purify water, control floods, replenish groundwater and recycle nutrients. These waters support biological productivity and serve as habitats for a wide diversity of species.

All these benefits or services that wetland ecosystems provide are essential for people's livelihoods, particularly in developing countries like India. Still, even given all these well-documented benefits, wetlands are consistently being destroyed, devastated, contaminated and converted to other types of land at a rate more rapid than any other ecosystem.

Moreover, ecosystem services provided by wetlands are not being adequately advertised in commercial markets and as a result, are not adequately valued as part of development decisions in India. Basking in hypocrisy India has about 757,060 wetlands with a total wetland area of 15.3 million hectares which accounts for nearly 4.7 per cent of the total geographical area of the country. Out of this, areas classified as inland wetlands account for 69 per cent, coastal wetlands account for 27 per cent, and other wetlands (smaller than 2.25 hectares) stand at 4 per cent. Among them, 26 sites have been designated as wetlands of international importance (Ramsar Sites), with a surface area of 689,131 hectares covering the districts of Andhra Pradesh, Assam, Gujarat, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh, Manipur, Odisha, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

A majority of the wetlands that occur in human-dominated landscapes remain acutely threatened by alarming levels of degradation and loss in many cities in India such as Kolkata. Degradation of east Kolkata Wetland (EKW) designated as "Ramsar Site" is further aggravated by social inequalities and poor planning amplifying the environmental pressures of economic expansion. A prudent withdrawal As per estimates, in 2010, the aforementioned wetland received 0.7-1.0 million cubic meters per day of wastewater from Kolkata while producing 16,000 tonnes of rice, 30,000-50,000 tonnes of vegetables and around 8000 tonnes of fish in that year besides its vital role of cleaning up and treating wastewater.

Thereby, the traditional practice of utilising wastewater for fisheries and agriculture in wetlands is a unique example of sustainable socio-economic development pertaining to resource recovery in the present scenario of economic recession and pollution problems. But at present, encroachment of wetland, land-use changes, silt accumulation, proliferation of invasive species and discharge of unauthorised highly contaminated wastewater to the drains have caused, as observed during our studies, a level of pollutant load in wetlands which far exceeds their capacity to retain pollutants and remove them through nitrification, sedimentation, adsorption, and uptake by aquatic plants across the country. This adversely affects among other things the wetland water quality, vegetables and crops which get contaminated, the cradles of biodiversity and key constituents of our environment.

Researchers, on the basis of studies conducted on developments in environmental governance and urban ecology, advocate that understanding complex eco-social dynamics, convoluted policy processes and social equity concerns are imperative for effective environmental management. Despite the enforcement of various rules and regulations by different regulatory authorities, many wetlands continue to be encroached for construction of buildings and flyovers for the

urbanisation and exponential growth of real-estate markets (in the name of public interest) without addressing the adverse impact on the ecosystem service delivery. Then what is this 'public interest' that is often spoken of and for whose benefit does it exist? Practically speaking, this 'public interest' is meant for the corporations who are interested only in developing infrastructure by reducing the wetland at the 'expensive' cost of depriving the local community.

The concerned authorities do not realise the importance of holistically analysing the complex eco-social systems of these wetlands as dictated by the guidelines of the Ramsar convention and the variety of roles played by the local community in exploring the different strands of urban ecological ecosystems. Moreover, environment regulation authorities in the Centre and states are just barely equipped enough to evaluate the environmental burden contributed by point sources, conversion of wetland, water quality and introduction of invasive species but not the complicated stress factors such as urbanisation of watersheds, hydrological alteration and non-point sources pollution.

Thereby, the complex nature of ecological transformation in the wetlands remains elusive. Though conservation programs stipulated by East Kolkata Wetlands Management Authority (EKWMA, formed under the EKW Act) dealing with boundary demarcation, wetland character detection, pollution measures, awareness programs and biodiversity conservation are in place, the urban wetlands are still continuously shrinking. Though wetland degradation is more complex in EKW where social inequalities and poor planning may be attributed to an increase in the significant environmental burden on the wetland ecosystem, there is, all the same, an urgent need to evaluate the developmental plans to ensure that they adhere to wetland conservation policies.

Technically, in addition to EKWMA, the wetlands come under several legal institutions including the KMDA, the West Bengal Housing and Infrastructure Development Corporation (WBHIDCO) which is concerned with urban development, the West Bengal Pollution Control Board (WBPCB) that is concerned with cleanliness of the environment, and the Department of Fisheries, West Bengal. Strategically, EKWMA framed cross-sectoral policy integration, conservation, community participation, etc., but another authority, KMDA – with the political support of the Ministry of Urban Development and financial support of the state, central and corporate – can supersede the decision taken by Wetlands Authority.

Thereby, EKWMA is not in the position of policy advocacy in other sectors. Similarly, the Department of Fisheries (West Bengal) does not possess adequate infrastructure in order to evaluate the urban-specific problems of the wastewater shery in the EKW. Though the monitoring of wastewater passing through the canal in EKW is being carried out by WBPCB, the actual dynamics of these pollutants remain elusive. At present, the protection of cultural values and community use of wetlands as well as conservation and restoration of wetland are the emergent needs. According to the Ramsar Convention, policy integration and integrated planning

by institutional arrangement must be encouraged. In addition to these arrangements, local communities and NGOs who are trying their best to protect the degradation of ecological features in an urbanised landscape must be included alongside more formal institutions.

### **West Bengal: Shrimp farming proves a mixed blessing**

<https://thefishsite.com/articles/shrimp-farming-proves-a-mixed-blessing-in-west-bengal>

"The 40-year-old was a rice producer but was compelled to switch to shrimp four years ago after run-off from neighbouring shrimp farms wreaked havoc on his once fertile fields. "I was happy with rice paddy cultivation because it brought guaranteed, albeit meagre, returns. But I was forced to change to shrimp when farms were dug up beside my land to start shrimp farming. The water in my own paddy field began to turn salty and repeated requests to stop the flow of water into my fields yielded no results. The salty water affected the paddy and the production dropped drastically. I was left with no alternative but to take the same plunge, he says. "Shrimp cultivation is a gamble. Though the income is tentimes more than paddy the risk is also high. I made a profit of Rs 2 lakh (US\$2,825) in a single year but lost all the money when the shrimp died or got hit with diseases. Bhuia is not alone.

Around 80 percent of the farmers in his village, which is a stone's throw from the Bay of Bengal, have started shrimp cultivation, lured by the potential financial dividends. But they are ignoring the permanent damage exposure to brackish water can do to fertile lands, putting food security in jeopardy. This is particularly concerning given that India ranks 102 of 117 countries in the latest Global Hunger Index, behind the likes of Nepal, Pakistan and Bangladesh. Over 1 lakh (100,000) farmers in Bengal, particularly in districts like East Midnapore, have switched over to shrimp cultivation. Though it has brought wealth to some, many have faced devastating losses due to outbreaks of disease. Huge tracts of once fertile land have been dug up for shrimp cultivation across several districts in Bengal.

According to India's Ministry of Agriculture, West Bengal has 405,000 hectares of brackish water – making it the largest area in the country for potential shrimp production. It therefore hardly comes as a surprise that the state is the second largest producer of shrimp (mainly *P. monodon* and *L. vannamei*) in India, only beaten by Andhra Pradesh. According to India's Marine Products Export Development Authority (MPEDA), production of shrimp in West Bengal reached 76,534 tonnes in 2017-18, up from 26,800 tonnes in 2001-02. In the same period, the area under cultivation has also increased from 47,650 to 55,211 hectares. As a result, exports also witnessed a massive growth. In 2016, according to FAO statistics, India exported 438,000 tonnes of shrimp, making it the largest exporter in the world, rising to 615,690 tonnes in 2018 – an increase of 40 percent.

The USA continues to be the major importer of Indian seafood, accounting for 32.76 percent of the value, followed by South East Asia, the European Union, Japan, the Middle East and China.

Impact on wild fish stocks In Bengal, shrimp farms have not only been damaging the land but also ruining the livelihood of small fishermen. Debobroto Khuntiya, 50, who lives in the village of Baguran Jalpai, says that discharged water from the shrimp ponds has been entering the sea and killing local fish stocks. “We used to catch around two tonnes of fish during our 6-7 days expedition at the sea over two decades ago but now it has dwindled to 5-6 kg.

It takes several days of journey far into the sea to catch the fish to compensate the expenses for the trip. The saline water discharged from the shrimp farms has been damaging aquatic life. It has snuffed out the livelihood of small fisherman who depended on the sea to keep their kitchen fire burning. The condition of many shrimp cultivators is not good either. They say that shrimp are getting increasingly hit by diseases, resulting in huge losses, “Even vannamei prawns are no longer profitable and are facing diseases, perhaps due to the residual effect in the pond. The water in the pond left after the cultivation is not discharged properly through the canal and the same dirty water re-enters the pond at high tide.

The water is infested with disease and becomes deadly for the shrimp. The heavy losses leave the farmer with no alternative but to end his life as he fails to clear the loans he took for the business. We fear the recurrence of a similar situation that occurred over seven years ago, said Ratan Bera, 40, a shrimp cultivator from the village of Dadanpatrain. In 2012, Japan, which is a key importer of monodon (tiger prawns) from Purba Medinipur, rejected almost all exports on account of the high antioxidant content in shrimp from the region, due to the high level of chemicals used in shrimp cultivation. East Medinipur was then known for exporting monodon, which traditionally fetched a premium compared to the more commonly exported vannamei shrimp that are mainly cultivated in Andhra Pradesh.

But there were cases of farmers committing suicide after they found no buyers for their shrimp. A return to rice Rattled by the thoughts of the bleak future, a number of farmers in West Bengal are now returning to traditional farming, “I have decided to return to rice paddies after facing huge losses for three consecutive years. I had invested Rs 2 lakh [US\$2,825] in the hope of getting good returns but have been facing constant loses because of unstable market prices of the shrimp and diseases. I have switched to rice paddies and have invested another one lakh to make the land cultivable by laying a cover of fresh soil, said Kalipada Bera, 38, a farmer in Baguran Jalpai village. His friend Ganesh Seth, 35, has also switched back to rice farming after facing loses in shrimp cultivation.

Researchers point to another major hurdle of switching back to agriculture: “Even if the farmers manage to return their farms to productivity, the contemporary structural issues in agriculture make this possibility slim. Technically the farms might well be salvageable; the question is are they socio-economically?” questioned Siddharth Chakravarty from Research Collective, a civil society organisation working for communities relying on natural resources for survival.

## **West Bengal: Tiger killed a fisherman and taken away another into deep forest in Sundarbans**

<http://www.uniindia.com/tiger-killed-a-fisherman-and-taken-away-another-into-deep-forest-in-sundarbans/east/news/1762526.html>

"A fisherman was killed and another went missing after he was taken away into the forest by a Royal Bengal Tiger (RBT) while they were catching crabs from creeks deep into Sundarbans of West Bengal's South 24 Parganas district, forest department and police said today. Shambhu Mandal (48) was first attacked by the RBT, which abandoned its first victim to death instantly after breaking his neck, and then took away Radhapadda Aulia deep into the forest on Thursday evening, a survivor said. The trio went deep on a boat into the riverine forest to catch crabs and fish on October 13. While on return they began to catch crabs in a river at Holdaykhali under Gosaba block but the tiger attacked them on Thursday afternoon as sun downed quickly into the forest. Police from Coastal station and forest department officials found the body and Shambu Mandal but could not find the missing Radhapada Aulia. In the past seven days, two fishermen got killed and the identical number went missing

## **West Bengal: Fishing not on, locals fear losing window to net hilsa**

<https://indianexpress.com/article/cities/kolkata/fishing-not-on-locals-fear-losing-window-to-net-hilsa-6078177/>

"Haidar Ali Sheikh, a fisherman from Sirachar village in West Bengal's Murshidabad district, said he had spent Rs 10,000 buying nets and equipment to catch hilsa in the Padma during the small, three-week window this month. But with fishing on Indian side of the river suspended following the October 17 incident in which a BSF head constable died in firing by BGB personnel, Ali said he is unlikely to make a profit on investments. Like him, hundreds of fishermen who look to book profits during this hilsa season are staring at losses. The Padma hilsa swims several kilometres upstream to spawn in freshwater around this time, and returns to salty water afterwards. Arun Mondal, who has been fishing hilsa in the Padma for over 45 years, said, "We get to catch this fish only once a year, but if fishing is stopped that opportunity will be gone. Simar Haque, who is in the fish business, said, "On a good day, a fisherman makes profit of around Rs 10,000, and it can go up to Rs 50,000 during the entire season lasting 22 days. Those who made investments are staring at heavy losses if more days go waste.

## **West Bengal: The Sundarbans crab farmers battling climate crisis – and pirates**

<https://www.theguardian.com/environment/2019/oct/18/the-sundarbans-crab-farmers-battling-climate-crisis-and-pirates-bangladesh>

"The river is so hungry, says Peramin Ishak, as he gestures to a missing arc of land from the muddy embankment. "It just keeps eating the land. From his village of Datina Khali, which

rests on the edge of the Bangladeshi Sundarbans, Ishak has watched the river swallow up a three hectare (seven acre) chunk of land in the past decade. Stretching across south-western Bangladesh and into neighbouring India, the Sundarbans is the largest mangrove forest in the world, a honeycomb of islands and tributaries that eventually fan out into the Bay of Bengal. It may be one of the most beautiful places on earth, but the families eking out a living in its waters are buffeted by one problem after another.

Here, on the frontline of the climate crisis, rising sea levels claim more and more land each year. Salt infiltrates the drinking water, and imbues the vegetables with a sharp tang. Increasing salinity almost wiped out the local shrimp industry back in the mid-90s, and these days many local fishermen have switched from collecting shrimp to hunting the more climatically resilient mud crab. But even as they adapt, locals remain extremely vulnerable. Mud crabs are becoming increasingly scarce, and as farmers venture into the mangrove forest to collect them, they are falling prey to gangs of pirates who kidnap them for ransom, forcing their families into debt. Loan sharks have spotted the opportunity and are now preying on the villagers too. Somehow they are surviving, but many are looking for a way out.

Around Datina Khali, the aquaculture industry dominates the landscape, with sleepy villages surrounded by an earthen patchwork of shrimp ponds and soft-shell crab farms. In the stifling early morning heat, Shuvendro Nath Mistry is surveying his two hectare shrimp farm, as a group of women knee-deep in water pull weeds from his ponds. “The shrimp haven't grown well this year. In this hot weather it is harder for them to grow, admits Mistry, his arms crossed over his bare chest. “If the salinity increases the shrimp will not die, but production will decrease. But if the heat increases, the shrimp will die. Today the crippling temperatures are one of the shrimp farmers' biggest concerns. Mistry is all too aware of the precarious situation of his trade, and watchful for the next problem that could bring the industry to its knees – as happened 20 years ago, when white spot disease spread through the farms, brought on by the increased levels of salt.

During the crisis, farmers noticed that mud crabs were naturally invading the decimated shrimp ponds, and seized the opportunity for some marginal returns. As a result, some deserted their old stocks and switched to crab cultivation instead. Although still nascent and smaller than the now recovered shrimp industry, Bangladesh's crab production has proved a success story. With rising international demand from countries such as China, Singapore and Malaysia, the export of mud crab from the south Asian nation reached \$24m (£19m) in 2015–16. Now the area's aquaculture is divided between shrimp and soft-shell crab farming, and collecting wild mud crabs from the Sundarbans for export, or to be fattened up in local farms.

Yet the irony is that amid a shift to a more climatically resilient industry, those on its frontline, the fishermen who venture into the mangrove forest, find themselves more and more at risk. For years, small pirate gangs have roamed the watery capillaries of the Sundarbans, hiding out in the

dense forest as they stake out fishermen to kidnap and hold for ransom. There are a few horror stories – of fishermen being severely beaten, or having their Achilles tendons sliced – but for the most part the piratical target is financial. As soon as they capture a victim, the pirates head for areas within the forest known for the best cell reception, sometimes climbing trees for a clear line, so they can call a terrified victim's family to demand a ransom via electronic transfer. So organised are some they even have their own business cards.

“It's so stressful when the men get kidnapped, exclaims Shefali Bibi, a pickle maker and fisherman's wife from Datina Khali, dressed in a bright yellow and purple sari. “Those are the worst days. I can't eat, or sleep or bathe. In the past decade, pirates have twice kidnapped her husband and held him for ransom, each time causing immense financial strain. Of about 1,600 fishermen and crab collectors in Datina Khali, almost all have been kidnapped once – others up to four or five times. To address the rampant banditry, the government has in recent years launched a huge crackdown, offering pirates lucrative sums to surrender. Roughly 29 pirate groups brandishing more than 400 firearms have given themselves up since 2015, with the last batch reportedly surrendering in November 2018, when the Bangladeshi prime minister, Sheikh Hasina, declared the Unesco-listed Sundarbans “pirate free.

But while the situation is significantly better, local fishermen say there are at least three pirate gangs still operating, with kidnappings occurring up to once a week. “There are fewer pirate groups now, but the situation is unchanged. If they find us we still have to pay them, says 32-year-old Moniral Islam Gazi, a crab collector who was captured this April. “I am not really scared of being caught because I have faced it a lot, but I am scared about where to find the money. If pirates capture them as they eke out a meagre existence collecting mud crabs and wild honey, they are quickly plunged into vicious cycles of debt. Back in the village, when a family member receives a ransom call they are thrust into a state of panic. Most have little, if any, savings. With payments ranging anywhere from 20,000 to 250,000 Bangladeshi taka (£182 – £2,270), many are forced to take loans. Of almost half a dozen crab collectors interviewed, all but one had a loan.

Many had multiple loans, from local businessmen, village loan sharks and microcredit agencies. “Sometimes they need a loan just to pay for their forest permit and supplies, explains Srikander Ali, a local crab broker at the nearby Katakhal fish market, who reckons the kidnappings still occur between eight and 10 times a month. “I also give them loans for the ransoms. If they get caught it affects my business too, he says, glancing at baskets of wriggling mud crab stacked against the wall, soon to be trucked to Dhaka for live export. “I estimate that about 80% are in a pretty bad financial position.

‘A lot of fear factors’ Sitting opposite her husband in their canoe, as he gently scoops up his line from the khaki waters, Henna Bibi is pragmatic about her choices. “There are a lot of fear factors in the forest, she says. “But if we get scared we won't be able to raise our children. For safety,

they set out into the forest in numbers. But these days there is also the problem of supply – once bountiful, wild mud crabs are becoming increasingly hard to find. “The number of crabs has dropped noticeably in the last six years, says Muhammad Didar Boxfaksis, 65. “On a good day, we can get 5–7kg, but 15 years ago it was double that. “We used to throw the smaller crabs back, agrees his neighbour, Sobed Ali. “Now, we take everything we can find. Mojibar Rahman, who is researching a PhD on crab cultivation at the Bangladesh Agricultural University, says the shortage is likely to result from over-collection.

To make the industry more sustainable, the government needs to invest in mud-crab hatcheries, he suggests, instead of being almost entirely reliant on wild stocks. “The crab industry is still underdeveloped because of a lack of culture technology and a lack of seeds [baby crabs], he explains, adding that some farmers have also shied away from crab cultivation because, in the Muslim-majority nation, crabs are viewed as haram (forbidden). With the myriad challenges before them, some local fishermen are looking for a way out. Many of the younger men have already left, seeking work in urban brick factories. The older fishermen claim that if it weren't for the pirates they would make more than enough, but Sobed Ali is tired of waiting, and luckily has a small amount of money to invest in adapting his business.

“The money I make, I don't end up using it myself, it ends up as pirate bail, says the exasperated father of three. “It makes my life miserable. With their savings from harvesting crab and selling pickles, and a loan from a Japanese trading company, Ali and his wife have converted a piece of land they own in the village into a small soft-shell crab farm. “I have to secure my children's future, so that's why I am starting the soft-shell crab farming, says Ali, as he hammers together an adjacent shelter in the fading light. “I don't want my sons to go into the forest like me. It's too risky. Hopefully, if this goes well, I can stop going in too.

### **West Bengal: Seed prawn collection depletes fish schools in Sundarbans**

<https://www.downtoearth.org.in/news/wildlife-biodiversity/seed-prawn-collection-depletes-fish-schools-in-sundarbans-67170>

"Rampant collection of seed prawns by locals on Sagar Island in West Bengal's Sundarbans delta has affected the fish population, a legislator admitted. Around 2,000-3,000 people, mostly women and children, eke out a living by catching baby prawns on the island. Sundarbans, the world's largest stretch of mangrove, is ecologically fragile. It has been designated a World Heritage site by Unesco. “Rampant catching of seed prawns and the killing of millions of fish hatchlings in the process is among the main reasons behind the non-availability of some species of fish in the sea around Sagar, Bankim Chandra Hazra, who represents the island in the West Bengal Assembly, told reporters at a workshop on climate change in the Bay of Bengal region.

Residents of the island in the South 24 Parganas district admitted they catch seed prawns using fishing nets and throw away the bycatch. “I earn around Rs 150-Rs 200 collecting baby prawns. I kill other species in the process, but the money is important for me, 57-year-old Rinarani Mandal of Beguakhali, said. Sarita Mandal, 43, from Ghoramara village on the island, said she ventures into creeks and the sea for collecting seed prawns everyday. “Like me, many women are engaged in seed prawn collection because it is an easy source of employment which needs simple technology, she added. The scope for an income drives them despite alleged exploitation by middlemen.

“Women catchers generally sell 100 small prawns to middlemen at only Rs 50. But middlemen, in turn, sell the catch to prawn farm owners at Rs 75-Rs 100, Parameswar Mandal, 45, a fisherman of Beguakhali, alleged. People agreed that catching prawns has depleted the local fish population. “The sea around Sagar Island used to generate huge quantities of fish a few years ago. But since the last two decades, we are not getting sufficient fish. As a result, the fate of large numbers of fishermen who depend on the sea is now at stake, Mahendra Das, 45, a marine fisherman of Beguakhali, said. Hazra, who is the chairperson of Gangasagar Bakkhali Development Authority (GBDA), said, he and his team had been organising many meetings with the district administration and fisheries department to check the catching of seed prawns in the sea and other water bodies in the Sundarbans.

“The fisheries department has also been organising awareness meetings among the villagers to urge them to not catch baby prawns. We are planning to enact a law that will make the catching of baby prawns an offence, added Hazra.

### **West Bengal: Padma hilsa arrives, but price pinches**

[http://timesofindia.indiatimes.com/articleshow/71404312.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://timesofindia.indiatimes.com/articleshow/71404312.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

"Ever since the news of 40 tonnes hilsa of the Padma hitting the city markets has started making rounds, the phones of fish traders of Lake Market, Gariahat and Maniktala kept ringing till midnight. The loyal customers of these fish traders made advance booking over phones. But many of them compromised on the size and quantity on Wednesday as price exceeded their budget. Around 40 tonnes of hilsa had arrived in wholesale fish markets of Barasat, Patipukur, Sealdah and Howrah on Monday night via the Petrapole border on 16 trucks. This is the first consignment of hilsa that has been released by the Bangladesh commerce ministry last week. The seven-year ban on export of hilsa to India has been temporarily lifted ahead of this year's Puja. The Sk Hasina government has allowed export of 500 tonnes of hilsa till October 10. The stock that hit the markets range from 600gm to 1.5kg.

“The hilsa weighing more 1.5 kgs, which have hitherto been unseen in Kolkata markets, was selling at Rs 1800 and above. This is the size that gives heavenly taste. We all came expecting the price would be a little lower. We had to buy smaller variety so that our budget doesn't exceed, said Ranajit Chaudhury, a Deshapriya Park resident. According to Amar Das, a fish trader of Lake Market, “People who had booked 1.5 kgs of fish on Monday evening, eventually bought much less. Many of the buyers shared one fish by cutting it into halves. This was quite unthinkable earlier. A fish lover, he added, used to celebrate buying a big hilsa like winning a coveted trophy.

### **West Bengal: Hilsa changes route, migrates to Bangladesh waters**

<https://timesofindia.indiatimes.com/city/kolkata/hilsa-changes-route-swims-bangla-waters/articleshow/71250754.cms>

"Ghoti or Bangal? Epar or Opar Bangla? Where did the ilish on your plate come from? The answer: most probably, Bangladesh. Or even Myanmar. The king of fishes is changing its migration route. Faced with a mesh of nets at the mouth of the Hooghly and a highly silted riverbed, shoals of hilsa are taking flight to Bangladesh. That is one of the main reasons why the hilsa catch in Bengal's rivers is drastically declining, pushing up prices, say experts. In 2002-03, the total hilsa catch in the Hooghly was 62,600 tonnes. Within a decade and a half (2017-18), that came down to 27,539 tonnes a sheer drop of 56%. During the same period, the catch in Bangladesh increased from 1,99,032 tonnes to 5,17,000 tonnes a rise of 160%. “The hilsa stock that congregate in north Bay of Bengal mainly takes three routes for their upstream journey during the spawning season: the Hooghly estuary, the Meghna in Bangladesh and the Irrawaddy in Myanmar. But, due to high siltation and virtually unrestricted fishing in the Hooghly, the fish has been changing its migration route and is moving up mostly through the Meghna, says Utpal Bhaumik, retired divisional head of Central Inland Fisheries Research Institute. Today, about 75% hilsa is captured in Bangladesh, 15% in Myanmar, just 5% in India and 5% in other countries.

“Hilsa shoals cannot enter a river unless the depth is 30-40 feet. But the Hooghly estuary mouth is fast losing depth, mainly because of the Farakka barrage and lack of proper dredging, says Bhaumik. And then there is the problem of overfishing. “Where there were 3,000 boats just a few years ago, 6,000 fishing boats are churning up the waters now, says Debabrata Khutia, a hilsa fisherman from East Midnapore's Contai. Pradip Chatterjee of National Platform for Small Scale Fish Workers (Inland), says, “Hundreds of nets, each around 2km long, block the mouth of the estuary. How will the fish enter the river? “So, for its survival, hilsa are migrating towards Meghna, where the depth of the river is 50-60 feet, says Bhaumik.

“Hilsa has its own in-built GPS-like system, called otolith. It guides them to safer waters, he adds. Dewan Ahsan of the University of Southern Denmark, who has been studying hilsa fishery

in South Asia for years, said: “In some cases, I have noticed that the migration routes of hilsa are changing. Fishing nets and submerged sand bars are blocking their usual routes. But I don't know of any study that provides more details on the issue. “Hilsa's natural migration route has been affected because of the Farakka barrage, siltation, overfishing and other anthropogenic factors. Earlier, hilsa shoals used to travel up to Allahabad. But now, they cannot cross the Farakka barrage, says Isha Das of Jadavpur University's School of Oceanographic Studies. Das was the lead researcher of a study on sustainable fishing limits for hilsa in northern Bay of Bengal. In 2013, the Bengal government had declared five areas along different stretches of the Hooghly, Matla, Raimangal and Thakuran as hilsa sanctuaries. Catching, possessing, transporting and selling of hilsa of a length below 23cm was banned.

Hilsa fishing was completely banned between “five days prior and post of the full moon for the period of September 15 to October 24 every year. “But it all remained only on paper. The ban is not being implemented. So, no positive impact of it is visible, says Sugata Hazra of the School of Oceanographic Studies, JU. “How can a ban be effective unless any penal provision is there? Has anybody been ever punished for flouting the ban? And has the government done anything to support the fishermen during the ban period? So, illegal nets are still being used to catch the fish round the year, even in prohibited areas, and juvenile hilsa are caught and sold as ‘khoira' fish, says Bhaumik. State fisheries minister Chandranath Sinha, however, says, “Nobody flouts the ban. The fishermen are aware enough. Yes, we had tried to incorporate a penal provision, but it didn't happen because of infrastructural issues. We also have earmarked Rs 1,800 per year for every hilsa fisherman and each of them gets Rs 600 per month when the ban is in force. But the secretary of the National Fishworkers' Forum, Debashis Shyamal, doesn't know of anybody who has got the government dole. “I do not know of any arrest or prosecution for flouting the ban either, he says. “It's time India and Bangladesh jointly addressed the problem of overfishing, siltation and other anthropogenic factors. Otherwise, both countries will lose in the long run, says Ahsan.

### **West Bengal: Press release: Submission of Dakshinbanga Matsyajibi Forum (DMF) on Draft ‘National Marine Fisheries (Regulation & Management) Bill, 2019**

"Dakshinbanga Matsyajibi Forum (DMF) welcomes the publication of the Draft “National Marine Fisheries (Regulation & Management) Bill, 2019. The initiative to enact legislation on fishing in the Exclusive Economic Zone (EEZ) of the country has been long due as there has been no regulation and little management of fishing in the more than 2 million square kilometres of marine waters in Indian EEZ. But Dakshinbanga Matsyajibi Forum (DMF) is constrained to state that publication of the Draft “National Marine Fisheries (Regulation & Management) Bill, 2019 only in English will make the common marine fishers and fish workers, who are the majority of the stakeholders, unable to go through the draft bill and offer their comments.

The draft bill must be published in all the languages of maritime states of the country and sufficient time should be provided for the fishing communities to offer their comments on it. Some basic concerns that deserve to be addressed in the Draft Bill: A. Preferential access of small scale fishers to marine fish resources in the Indian EEZ in compliance with the principles of sustainable fisheries and promotion of fishers' livelihood enshrined in the National Policy for Marine Fisheries (NPMF). B. Promotion of small scale fishing in the Indian EEZ. C. Penalties for violation of the provisions of the Draft Bill should be more for the larger fishing boats or their owners / operators than that for the smaller fishing boats or their owner / operators. D. Dual license regime should be avoided and there should be institutionalisation of single or unified license for fishing boats operating in both the territorial waters and the EEZ by the Central and concerned State/UT Governments.

E. In view of the commonness and integration existing in ecosystems, fish resources and fishing in both territorial and EEZ waters and also in view of the fact that small scale fishers are fishing both within and outside the territorial waters in increasing number, there should be integrated and coordinated approach between the Draft Bill and concerned State Marine Fishing Regulation Acts. This would require creation of relevant provisions in the Draft Bill and existing state Marine Fishing Regulation Acts. F. The operation or implementation of the Draft Bill is largely dependent on the Fisheries Management Plan. As such preparation and adoption of Fisheries Management Plan by concerned authorities in both Central and State / UT Governments should be made a condition to the operationalisation of the Draft Bill.

### **West Bengal: Convergence helps Bengal top MGNREGS utilisation**

<https://timesofindia.indiatimes.com/city/kolkata/convergence-helps-bengal-top-mgnregs-utilisation/articleshow/70985299.cms>

"Bengal has again come up as a topper in convergence and livelihood implementation under the 100-day work scheme. Chief minister Mamata Banerjee said in the assembly on Wednesday the state could overcome practical hurdles in MGNREGS through convergence of various schemes. To a question, she said: "The Centre has imposed restrictions on the 100-day programme. Payment from the Centre is also delayed. Beneficiaries have to wait three months for wages. To overcome the difficulty, we have planned convergence of various departments irrigation, forest, fisheries and Jal Dhara Jal Bharo to engage job card-holders. For instance, for a scheme under the irrigation department, the government engages unskilled labourers enrolled under MGNREGS. The fisheries department is also a case in point. The department gives the fish seedlings for pisciculture while a fisherman enrolled under the MGNREGS rears the seedlings and ekes out a living. The CM has also proposed to include MGNREGS-enrolled women in various schemes.

“Some of these women cook midday meals in schools and get money. But that is not enough. They can be engaged in plantation of saplings within the school premises so that they can get some more money, the CM said. An official said: “The panchayat department, undertaking work under a scheme such as irrigation and social forestry, gives the funds while MGNREGS provides the manpower. It could be the other way round as well. A scheme under MGNREGS needs technical expertise for implementation. The expertise comes from technical departments. Trinamool's Sitalkuchi MLA Hiten Barman drew the panchayat minister's attention during question hour, seeking government intervention in re-issuing job cards to those whose job cards have been deleted because they went to work at brick kilns and other places.

“Job cards, once issued, can't be deleted. I would request you take up the matter with the block development officer. This is a constitutional provision, said panchayat minister Subrata Mukherjee. CPM MLAs Sujan Chakrabarty and Tanmoy Bhattacharya wanted the government to write to the Centre for increase of daily minimum wage under MGNREGS to Rs 350 and increase work tenure to 200 days. “Let all the parties write to the Centre, the government is on the job, Mukherjee said.

### **West Bengal: Fishing resumes in Sundarbans after 60-day ban**

<http://www.unb.com.bd/category/Bangladesh/fishing-resumes-in-sundarbans-after-60-day-ban/27398>

"Fishermen of the Sundarbans region resumed fishing from Sunday following a 60-day ban on fishing in the coastal area. The Ministry of Forestry imposed the ban from July 1 to put an end to use of poison to catch fish and related crimes in the forest. The July-August period is the breeding season for most of the fish available in the rivers hence to protect them the two-month embargo was imposed, said ministry sources. Local fish traders and fishermen are however skeptical about profits as most of them spent the loaned money they took beforehand. Chadpai Range Station Officer Md Kamrul Islam said the ban was imposed to reduce forest crimes. “As the ban has ended, fishermen have started to enter the forest area with passes from September 1. Around 150 fishermen have taken passes from Chadpai Station alone, he added.

### **West Bengal: State Govt helping farmers do organic fish farming in farmlands**

<http://aitcofficial.org/aitc/state-govt-helping-farmers-do-organic-fish-farming-in-farmlands/>

"The Bangla Government has started a project for supplementing farmers' agricultural income with income from fish cultivation, and that too in organic form. The State Agriculture and Fisheries Departments have jointly taken up this project in Malda district, to be taken up elsewhere later on. The project is part of the State's Agricultural Technology Management Agency (ATMA) Scheme. Boon for farmers for small farmers, the income from agriculture, after deducting the cost of inputs, is not much. So, considering the demand for fish in the State (production is still less than the total demand), fishlings are being released in the flooded fields after the planting of paddy. And no pesticides are being allowed for the paddy or any chemicals for helping the fish to grow. So the entire process is organic and hence the end products would be extremely healthy. Fish cultivation in parallel Fish varieties being released include koi, singhi, magur, rohu and catla.

The fish would also help the crops as they would eat away the pests and weeds that can hamper the growth of the paddy. Canals and small waterbodies are being dug beside the plots so that when the water levels come down in the fields, the fish would be able to swim across to them. For the farmers, for six to seven months the fish would grow alongside the crops. After the crops are cut and the fish are caught, the water in the canals can be used for cultivating vegetables. The economics explained Explaining the cost factor, the Malda district project director for the ATMA Scheme said: "On one bigha of land, at least 1,000 fishlings are released. Only three to four less rows of crops need to be planted per plot to accommodate the fish, as that portion is needed to cut canals around the plots. And if there are existing small waterbodies, even that amount of land is not required to be kept free. "One bigha of land generally produces 20 to 22 mons of paddy (in the case of Malda), whose market price is Rs 15,000. This isn't much. But if this is combined with fish cultivation, a substantial income is guaranteed. Rs 5,000 spent per bigha on cultivating fish would produce about five quintals of fish whose market price is Rs 50,000. "To make it economical, cultivation would be done by combining a few plots. This would lead to joint ownership of the projects and would in turn lead to a decrease in the cost of agriculture.

### **West Bengal: Buying fish online is the new Bengali ritual**

<https://www.thehindubusinessline.com/blink/know/new-apps-are-changing-the-bengalis-pattern-of-buying-fish/article29231931.ece>

"Bose-babu knew his fish. Every morning, he would be at the fish market, keenly inspecting the day's catch laid out in rows. He would gingerly lift the gills of a rohu. The right tinge of pink meant the fish was fresh. Satisfied with the colour, Bose-babu would strike a bargain with the fishmonger and return home with the fish wrapped in a newspaper. Once the mustard oil started smoking in the hot kadai, his wife would slide in the fish pieces cleaned, cut

and mixed with salt, turmeric and red chillies. His grandchildren know their fish dishes the steamed hilsa or fried fillets with tartar sauce but they'd rather not know the fish. They don't need to. Unlike Bose-babu, they don't have to visit a maachher baajar (fish market).

All they have to do to get their choice of fish is press a few buttons. For generations, popular art, poetry, prose and cinema have captured the sight of the Bengali bhadralok, in his pristine white dhoti and kurta, on his way back from a Kolkata market, the head of a glistening, beady-eyed fish peeking out of the shopping bag. There is a Mona Lisa-like smile on the babu's face that speaks of delicious fantasies woven around the fine specimen of a ripe rohu or hilsa he has scooped up in his bag. But the romance around the art and culture of fish buying is dying. For Kolkata's younger residents, this chore is increasingly turning into an online affair. Online marketplaces such as Bigbasket and Grofers are bringing the daily grocery, fresh vegetables and fruits, and the occasional fresh or frozen non-vegetarian products to their doorstep.

Many tech-driven players, keen to cater to a far more digitally receptive community, are stepping in. Fresh to Home, Licious and Jalongi are among the apps that offer a variety of fresh fish, apart from other products. The middle class in the city still wants to have its daily interaction with the fish seller. But fish delivery apps and services are a big hit with women, senior citizens and the young. “Many of our clients are senior citizens, says Dippankar Halder, an IIM-Ahmedabad alumnus, who founded Jalongi.com a little less than a year ago. “Sometimes we have clients working in different parts of the country who order supplies for their elderly parents in the city, as they are unable to step out.

The convenience of having fresh fish that's cut, cleaned, ready to use, and delivered at your doorstep, is proving a huge factor for the shift in consumer behaviour. “Buying fish used to be a form of entertainment for some people, observes Halder, who draws from his vast experience in organised retail and supermarket brands. “But not anymore, he says. One of the reasons such services are catching on in Kolkata despite the abundance of fish markets is that, traditionally, the fish was bought whole. It was the job of Bose-Babu's wife to clean and then cut it using a boti, a sharp instrument with a curved blade.

“While the average Bengali man's responsibility ended with procuring the fish, cleaning and prepping it was the onus of our mothers, sisters and wives. And no matter how much you love eating your fish head curry, it is not a pleasant job to clean and prep it, says Halder. Modern homemakers, professional women and other people in their 30s are now driving sales for most of these apps, according to internal surveys and customer support information from some of the companies in the fray. The wife or the homemaker is not willing to spend precious time prepping for the family meal, and gone are the days when the office-goer had the luxury of a fish curry brunch before heading to work. The apps help in getting the products delivered when and where you want them. Those behind the services know that for most Bengalis, fish is a must. “A

Bengali household will consume fish or meat almost five to six days a week, says Abhirup Basak, the co-founder of Delybazar, another such service.

“And because you cannot have the same fish every day, we offer more varieties, he says. In addition to the regular rohu, catla and other such varieties and prawns, it now also sells salmon. At Jalongi, too, the rarer varieties of fish and seafood are the current bestsellers for the Kolkata market. Apart from nadosh and kachki, eaten in many parts of Bengal but getting increasingly rare in middle-class homes, it offers the Himalayan trout, bangda (mackerel) from Mumbai and the large and fatty hilsa from Myanmar. Some of the apps also sell marinated fish that need only be steamed or braised before serving. Urvika Kanoi, a popular chef-restaurateur, who recently launched The Daily Cafe serving everything from the Norwegian salmon to Kolkata bekti, prawns and mussels, buys from the e-tailers when it comes to her personal consumption. She uses several apps for their “fantastic produce, especially for the rare varieties of fish that are not easily available at the local markets.

Recognising the potential that lies in this sector, the West Bengal government has also introduced Smartfish, an app and a website, for those looking to buy fresh fish and meat products online. But users complain that it is not ably supported by technology. While large sections of people are turning to apps, some die-hard fish buyers are not ready to shed their old habits. One of the earliest entrants, Bigbasket, has learnt the hard way how difficult it is to please the Bengali consumer. Seshu Kumar Tirumala, head - buying and merchandising with Bigbasket, says that soon after introducing a range of freshwater fish products customised for the Bengali palate, they reached out to the customers for feedback.

“Most customers who did not buy frequently said they preferred to look at the eyes of the fish before buying, he says. The company though, has remained undeterred. Thirty five per cent of its consumer base in Kolkata buy fish and meat products on the app at least once a week. But they had to tweak their product offering and streamline its in-house butchery. They have introduced customised cuts for the picky fish and meat buyer. The fact that a fish can be cut in different styles according to the recipe of the day poses a tough challenge for online retailers. Some users complain that an app doesn't quite do the trick for they never get the right kind of information when they buy their fish. Madhushree Basu Roy, a food writer, consultant and blogger, tried out the state fisheries app before settling for Bigbasket. It worked as long as she was ordering in prawns, baby bekti, rohu or mourola (anchovy), says the multitasking homemaker and mother of two.

“I have never had a problem with their quality or packaging. But when it came to fish such as the pomfret, I realised I could never guess the size of the individual pieces that would make for the weight I wanted, she says. She switched back to her local fishmonger, who knows her preferences and calls and updates her of fresh arrivals. The competition for fish e-tailers is the neighbourhood seller, who banks on his relationship with the buyer built over time, some spirited

haggling over the price and weight, and exchange of hyperlocal gossip and newspaper headlines. All this, as Bose-Babu knows well, contributes to the experience of buying fish. So the only way the new entrants can make headway is by being consistent with their quality, variety and delivery channels.

Aware that they may be losing a percentage of their consumers to delivery apps, local vendors seem to have upped the ante. They are countering the threat with promises of prompt home delivery, choice of cuts, the fish cleaned and prepped according to customers' liking and the promise to get them the best bekti or hilsa for a weekend lunch. Jaydev Sahu and his wife Shanti, who sell fish at a community market in the satellite township of Salt Lake, talk about how they are now wary of picking up more inventory than they can sell. People are either not consuming as much as they did before, or they are buying online, they say. "But if you want any particular size or variety we will get it for you. Just let us know a bit in advance, says Jaydev. The husband and wife take turns delivering fish to the homes nearby, none of which have lifts.

It is inconvenient, but they would rather take up the challenge than lose out on their customer base. Despite the demand, app owners say Kolkata is by far the toughest market to crack when it comes to e-tailing fish and meat products. Halder says he had the option of launching the services in the national capital region, but chose this city because it was a challenge he could not resist. And now, buoyed by a month-on-month double-digit growth, he is looking at expanding his catalogue. Flush with fresh funding, Delybazar too is looking at new markets in the state, while Bigbasket is adding more customised products such as fillets and other cuts to its offering. Other regional supermarket chains that have been pushing their apps and home delivery services are fishing in these waters as well.

### **West Bengal: Fishermen decry Sundarbans fishing ban**

<https://en.prothomalo.com/bangladesh/news/200874/Fishermen-decry-Sundarbans-fishing-ban>

"Hardship has befallen the people dependent on the Sundarbans for their livelihood ever since a ban on fishing in the mangrove forest was imposed about two months ago. Fishermen said the government move, without providing them an alternative source of income, is forcing their families to live in difficult situations. But the forest department argued that the ban during the breeding season aims to increase fish production. Fishing was banned in canals less than 25 feet wide from 1 July. There are 450 such canals in the mangrove forest. At the same time, the forest department embargoed fishing and hunting crabs for two months. Justifying the ban, the authorities concerned said the July-August period is the breeding season for most of the fish species available in the rivers. Sources at the forest department said 52 per cent area of the east and west Sundarbans (a total of 6,060 square kilometres) is a sanctuary.

The area is under strict surveillance of the administration. From the other 48 per cent forest areas, people dependent on Sundarbans collect fish, crab and honey, among other things. But many unscrupulous fishermen use poison and special nets, designed to catch even the small fishes, in the canals. Currently, the fishermen are unable to enter the forest legally because of the ban on fishing. It has affected an estimated 50,000 fishermen and their families of Khulna and Bagerhat. Many of them have urged the government to ease the ban. Md Shahanur, a fisherman from Khulna's Koyra upazila, said they had been passing a very difficult time since the ban has been imposed. Abdul Morol, a crab businessman from Dakop upazila, said, "How're we supposed to survive? Send us somewhere else if the ban isn't withdrawn. M Bashirul Al Mamun, divisional forest officer of Sundarbans West zone, explained that some fishermen use poison to catch fish during breeding season in July and August. "It kills all types of fish, including the small ones, and this has a negative impact on the biodiversity of the Sundarbans, he said. A two-month ban was imposed to tackle the issue.

Apart from this, fishing in canals with width of 25 feet or less has been prohibited throughout the year. "The move will benefit the fishermen. They'll be able to catch fish when the ban expires, he said.

### **West Bengal: After a dull monsoon, it's finally raining hilsa in Kolkata**

<https://timesofindia.indiatimes.com/city/kolkata/after-a-dull-monsoon-its-finally-raining-hilsa-in-kolkata/articleshow/70714142.cms>

"On Friday, Kolkata experienced its first heavy downpour this monsoon. And soon, weather officials sent out a warning saying the deluge is expected to continue for the next 48 hours. While this would substantially reduce the city's current monsoon deficit of 44%, it has also brought cheer to hilsa lovers who have not been able to indulge in their favourite fish as much this season. Thanks to a dismal spell of rain, the supply of hilsa has remained largely affected this season. But with the current weather, there are no stopping Bengali foodies, who are all geared up for khichuri and ilish maachh bhaja for their Sunday lunch. "I just bought a stock of 1,000 kg of ilish. Finally, I have some good stuff here, said Ratikanta Bar, a wholesale fish seller in Howrah's Kalibabur Bajar, on Saturday morning. So, after months of small, inferior catches, at last good-quality ilish has just started to come in. However, with the depression that set in on Bengal in the last two days, the fishermen boats are stationed in the harbours. "There is a weather alert and no boat can go fishing now.

It is a government instruction. If anyone disobeys, he has to pay a fine. But this is temporary. Since good fish has started coming in, I presume all the markets in Bengal will be stocked up with quality ilish in a week's time, he added. Talking about the price of ilish here, he added, "Any catch between 700-800 gm is available at around `800 per kg. We are selling one-kilo ilish at `1,200 per kg. Fish weighing 1.2 kilo to 1.5 kilo is available for about `1,500 per kg. There is

absolutely no fish coming from Bangladesh. However, given the trend, now we are getting pretty big-size catches too. According to an official from the state fisheries department, until Friday, the amount of rainfall received here was rather low.

So, the fishermen haven't been able to get a good catch this season. But they expect the situation to improve by month-end. "The current downpour that Kolkata is experiencing is a result of a cyclonic circulation over south Bengal and adjoining Bangladesh. We are hoping that the situation will improve by the end of August. With more rain, the supply of hilsa is expected to normalise. However, in between, small amounts of hilsa have been caught from the coasts of Digha and Diamond Harbour, said Chandra Nath Sinha, the West Bengal minister for fisheries. Actor Ritwick Chakraborty, who loves to gorge on ilish, said, ""While my father is from Dhaka, my mom is epar Banglar. So, ilish dishes at home have always been influenced by both the sides. I love the patla jhol of ilish or even bhapa. Even fried ilish along with steamed rice, mixed with the bhaja tel, is so appetising!""

### **West Bengal: Fish vanishing, crabs lure crusader to peril**

<https://m.telegraphindia.com/states/west-bengal/fish-vanishing-crabs-lure-crusader-to-peril/cid/1695608>

"Arjun Mondal from Rajatjubilee village in the Sunderbans was fighting for the women who lost their husbands to tiger attacks. This Monday, two persons accompanying him reported that he was dragged away by a tiger. Official word is still awaited on the fate of Arjun, in his early 40s and a tireless campaigner for the Sunderbans and human rights. He was attacked by a tiger in the Pirkhali Gazi forest, near Sudhanyakhali. He had gone to catch crabs with two other men. Married to Pushpo, Arjun has two daughters and a son. If the worst fears are confirmed, the wife of the protector of women whose husbands were taken away by the big cats also join the list of "tiger widows, a tag attached to those who lose their husbands to tiger attacks. Crabs, available in the mud flats deeper in the forest, are now the most lucrative choice for Sunderbans fishermen.

Fish are disappearing fast from the rivers close to the villages. Thousands of fishermen feel compelled to go deeper into the forest. Dhrubo Mondal and Paritosh Mirdha, who were accompanying Arjun, said they got no chance to save Arjun. "We started on Friday and spent all of Saturday and Sunday catching crabs. On Monday, at noon, we were setting up the fishing net in a narrow creek during low tide. Arjun was on one side and the two of us were on the opposite side of about a 20-ft-long boat, said Dhrubo. "A strong wind was blowing and Arjun was facing the river to anchor the fishing net. The tiger appeared in a flash and took Arjun away... he had no chance. We initially thought about giving the tiger a chase, but did not as we also would have been at a risk.

On Tuesday, a group of local people and forest officials saw Arjun's trousers from a distance near the place of the attack but did not enter as “it was quite inside the forest, said Arjun's younger brother Ranjit, who accompanied the team. “Our mother, all of us, repeatedly asked him not to go for fishing near the forest. Every time he used to say ‘this is the last time’ but again set out after some days. This time it really proved to be the last, said Ranjit who appears to have given up hope in spite of the absence of official confirmation. “Arjunda had a meeting with us even on Friday regarding the possibility of mushroom culture, said Kaushalya Mondal from nearby Dayapur village, who had lost her husband in a tiger attack. She worked with Arjun, and was part of the team of women which visited Calcutta recently to draw the attention of the state authorities to their concerns. “We don't know how to survive without Arjun, said Gita Mirdha, a relative and another tiger widow.

“I know him for 20 to 25 years. His commitment, leadership and organisational skills were unparalleled. “Arjun did not have much formal education but he was a true environmentalist and a social worker. With some money that we could provide, he formed a group of tiger widows in association with Sunderban Rural Development Society, which he had set up a decade back. He was also involved in mangrove plantation and managing plastic garbage in the area dumped mainly by tourists, said Sasanka Deb of the non-profit organisation Disha, with which Arjun worked for the past few years. Arjun was instrumental in organising the Calcutta programme with the “tiger widows to highlight their concerns at the state level. Arjun, a lean man with the strong frame that comes from a life of constant and hard labour, struggled to make ends meet. He would work on his three-bigha agriculture plot, growing paddy and seasonal vegetables, earning about Rs 20,000 a year from this. He had also worked a while in Metro rail construction in Calcutta. He saved some money after this and built his single-storeyed brick home in Rajatjubilee. The home was destroyed in Cyclone Aila in 2009 and had to be built again. He earned a salary from Disha. But this was not enough and that was why he would go fishing. A foray into the forests could fetch Rs 10,000 to Rs 12,000 worth of crabs and fishes.

“Arjun always came with demands for others, particularly for tiger widows, but never asked anything for himself, said Deb of Disha. On Wednesday, Arjun's relatives said the Sunderban coastal police station in Gosaba refused to accept the family's report on Arjun's death. The family is planning to go to the police superintendent's office in Baruipur on Thursday. Arjun wanted his children to be educated, especially younger daughter Priyanka and son Rahul. Priyanka has passed higher secondary and Rahul completed secondary education. Ashok Nayak of ActionAid, one of the organisers of the tiger victims' Calcutta visit, said: “The government should take immediate notice of the situation in the Sunderbans and arrange for compensation for the families of the victims.

**West Bengal: Why Kolkata’s sewage water carp farmers are no longer feeling flush**

<https://thefishsite.com/articles/why-kolkatas-sewage-water-carp-farmers-are-no-longer-lfeeling-flush>

"Bijay Mondal has been a fish farmer and fisherman in the East Kolkata Wetlands, in the Indian state of West Bengal, for over 30 years. The 61-year-old catches fish in a lagoon which has the rare distinction of being part of the largest organic sewage treatment system in the world. Bijay is employed as a labourer in a co-operative fish hatchery which stocks its fingerlings into the wetlands where nutrients in the waste water allow them to grow to commercial size and they are harvested by fishermen. He earns Rs?200 (around £2) after toiling for six to seven hours every day at the hatchery. His job involves catching the small fish and then transferring them into the bigger ponds; they are then collected by other sets of fishermen after they grow to around 200g - 250g.

The maximum size of the fish in the wetlands goes up to 300g as fish are caught daily here. Around 16 tonnes of fish are stocked into the ponds every two months. Cultivating fish in untreated waste water offers employment to nearly 50,000 people like Bijay, who both work as daily labourers and catch local fish species like silver carp, common carp, mrigal, rohu and catla in their time off. These fish, which are essentially reared on household sewage water, with no additional feed being provided, are being consumed by the citizens of Kolkata, the state capital of West Bengal, and its suburbs. Yet Bijay sounds visibly disappointed about his future: "Earlier, the co-operative [which has about 150-250 active members at any one time] used to catch around 2,000 kg of fish every day but now it has dropped to 1,000kg and even less on some days.

The siltation and massive constructions are taking a toll on our livelihood. It seems days are not far when wetlands would soon become the thing of the past. The catch has already been dwindling with each passing day. We might have to resort to stealing if things continue to remain the same, he fumes while pointing to the agglomeration of skyscrapers dotting the city's landscape bordering the bheris which are shallow, flat-bottomed lagoon-type ponds that vary between 50 and 150cm in depth and can be as large as half a square kilometre. Several thousand fishermen who depend on the wetlands are spending sleepless nights thanks to the massive urbanisation that has been devouring the East Kolkata Wetlands – a complex of marshes, ponds and sewage farms that is spread across 125km<sup>2</sup> to the east of the city.

The wetland has been designated "a wetland of international importance by Ramsar (the intergovernmental convention on wetlands) since 2002. Its sewage treatment process is a rare example of an intertwined symbiotic relationship between wastewater treatment and wetland aquaculture. The untreated water and waste from Kolkata's domestic households reaches the lagoons of the wetlands through an interconnected maze of canals and underground drains. Scientists claim that sewage-reared fish are completely safe for consumption: "The wastewater is rich in nutrients and has ample quantities of nitrogen, phosphorous and other ingredients required

for the rearing of fish. It is beneficial for cultivators as it saves at least 40 percent of their cost on fertilisers and thus helps them to enhance profits.

The heavy metals in the water get deposited on the gills and lungs of the fish that are generally not consumed by the people, says Dr Subhendu Adhikari, principal scientist at Regional Research Centre (ICAR-CIFA), the premier research institute on freshwater aquaculture in India. He also emphasises that freshwater fish farming is the future. “The water crisis has been aggravating with each passing year. Aquaculture on wastewater has not only been adding nutrients to the water but also making it reusable and offering people healthier fish, he says, adding that numerous tests have shown that sewage-fed fish are completely safe for human consumption. According to the West Bengal government, around 4,253 hectares of land are being used for sewage fish farming in the state, contributing around 25,000 tonnes of fish per annum. Sewage aquaculture, however, has been finding it tough to cope with the double whammy of mindless urbanisation and siltation. Kolkata, with its population of around 4.5 million (according to a 2011 census), produces more than 1,112 million litres of waste water every day. The wetlands treat around 80 percent of the city's waste water and save millions of rupees that could have been spent on its treatment. An extensive study conducted by Kolkata-based researcher Dr Debanjana Dey has found that nearly 10 percent of the wetlands were lost to urban settlements from 2005 to 2011: “The city has increased by leaps and bounds in the past few decades and the ecosystem has been the biggest casualty.

The wetlands have also been shrinking because of massive constructions, both public and private, and also encroachments. The fast-disappearing natural sewage system would not only snatch the livelihood options of the fishermen but would also spell doom for the city, which would be bereft of a natural body to treat its waste. The increase of accessibility after the laying of roads has led to tremendous pressure on townships bordering the wetlands and land sharks are trying to grab them because of their prime location, says Dey who has done extensive research on urban ecosystem and livelihood on the East Kolkata Wetlands.

Apart from urbanisation, siltation has also been impacting sewage water fishing. Dey says that siltation has reduced the depth of the ponds, affecting aquaculture: “Conversion of wetland into urban settlement has obstructed the free flow of sewage water due to construction of culverts, access roads, etc. Consequently, the rate of silt deposition of the canals has gone up, impacting the fish rearing. The lack of adequate maintenance and regular cleaning exercises has aggravated the problem. Various co-operative societies involved in fish cultivation in the wetlands blame the state government for the dwindling catch: “We are already reeling under urban expansion and facing pressures from developers but the government has also adopted a step-motherly attitude towards us. The removal of silt requires massive funds which we cannot afford and efforts to obtain loans from the government have so far yielded no results.

The low catch has been eating into our business but nobody seems bothered, rues Srinath Mondal, chairman of Bheri Four Fishermen's Co-operative Society – one of 42 such co-operatives in the wetlands. Refuting allegations of ignoring the plight of fishermen, the state government claims that active steps are being taken to curb illegal encroachments and improve the infrastructure of the cultivators: “We have been lodging complaints against the encroachers and it is up to the cops to take action. The removal of silt is not only the responsibility of the government but also the co-operatives, as they are earning revenue from it, but still the government is looking into their issues, assured AS Alvi, deputy director of the West Bengal Fisheries Department.

### **Odisha and West Bengal: IMD: Depression forms over northwest Bay of Bengal, warning issued for fishermen**

<https://www.aninews.in/news/national/general-news/imd-depression-forms-over-northwest-bay-of-bengal-warning-issued-for-fishermen20190807082505/>

“Due to the formation of a depression over the northwest Bay of Bengal, the Indian Meteorological Department (IMD) has advised the fishermen to avoid fishing on Wednesday. “The Depression over northwest Bay of Bengal off north Odisha West Bengal coasts moved west-northwestwards with a speed of about 05 kmph in last 6 hours and lay centered at 17:30 hours IST of today, August 6, near Latitude 20.7 degree North and Longitude 87.8 degree East, above 130 kilometers southeast of Balasore (Odisha) and about 100 kilometers south-southeast of Digha (West Bengal),” said IMD on Tuesday.

“Strong winds, speed reaching 40-50 kmph, are likely to prevail over the entire Arabian Sea and West Coast and central and North Bay of Bengal, West Bengal, Odisha, and Andhra Pradesh coasts. Fishermen are advised not to venture into these areas,” IMD added. According to IMD, the depression over northwest Bay of Bengal is very likely to intensify into a deep depression during next 12 hours. It is very likely to move west-northwestwards and cross north Odisha-West Bengal coasts near Balasore by August 7 noon. The monsoon trough at mean sea level now passes through Ganganagar, Rohtak, Hardoi, Ghazipur, Dhanbad, Bankura and thence to the center of the Depression over northwest Bay of Bengal and extends up to 1.5 km above mean sea level.

The trough from south Gujarat up to the cyclonic circulation associated with the depression over northwest Bay of Bengal across north Maharashtra, south Chattisgarh and south Odisha extending between 3.6 and 7.6 km above mean sea level, tilting southwards with height persists. The cyclonic circulation extending up to 1.5 km above mean sea level over Haryana and neighbourhood embedded in the Monsoon trough persists, IMD informed. The weather forecaster on Tuesday, predicted widespread rainfall over Odisha, south Chattisgarh, south

Madhya Pradesh, central Maharashtra, south Konkan, Goa, Gujarat, Kerala, Karnataka, northern Andhra Pradesh, and Telangana during the coming days.

### **Uttarakhand, Uttar Pradesh, West Bengal and Bihar: Pollution control board directs 4 state to take action against Ganga polluters**

<https://www.asianage.com/india/all-india/020819/pollution-control-board-directs-4-state-to-take-action-against-ganga-polluters.html>

"Taking strict note of effluent and industrial waste being discharged into the Ganga river, the CPCB has directed four state pollution control boards to take action on units, including closing them, if they don't comply with environmental norms. In separate letters to the chairmen of the Uttarakhand, Uttar Pradesh, West Bengal and Bihar pollution control boards, the Central Pollution Control Board (CPCB) has directed them to process reports of inspections within 15 days. It said action, including the closure of industries violating norms, will be taken within 15 days of submission of the inspection reports.

These inspections were carried out by technical institutions or under joint initiatives between them and the state boards. The CPCB said till now, over 400 grossly polluting Industries (GPIs) have been inspected, but ""very few"" reports were submitted to the state boards by institutions such as the IITs, Jamia Milia Islamia, Moti Lal Nehru National Institute of Technology and 12 others. ""Industries like chemical, distillery, sugar, pulp and paper, textile, slaughter house, bleaching, food and dairy located in states of Uttarakhand, Uttar Pradesh, West Bengal and Bihar have been discharging effluent directly or indirectly into the Ganga through drains or tributaries which cause adverse effect on the water quality of the river and its tributaries,"" the apex pollution body said in the letters issued a week ago.

Inspection is supposed to be carried out of all polluting units and reports have to be given to state pollution control boards (PCB) within 15 days by technical institutions, as per CPCB directions. ""However, it has been observed that though 31 GPIs were inspected in Bihar and Uttarakhand each till July 21, out of which, one report was given to the Bihar PCB and four to the Uttarakhand PCB,"" it said. In Uttar Pradesh, 380 GPIs were inspected but 153 reports were submitted to the state pollution control board by technical institutes. In West Bengal, 46 GPIs were inspected, but only nine reports were submitted to its pollution control board, the CPCB noted.

""The central government has notified standards for discharge of environmental pollutants from industries and common effluent treatment plants (CETPs) under the Environment Protection Act,"" it said, adding that annual inspection of GPIs was made mandatory in 2017. The CPCB in a meeting in April with state boards, National Mission for Clean Ganga officials and 19 technical institutions decided that the institutes will submit inspection reports to the state boards concerned, which will then take action within 15 days and ensure follow up actions. However,

the CPCB found that several such reports are yet to be processed.

### **Assam and West Bengal: Bank erosion in the Brahmaputra valley–impact and causes**

<https://nenow.in/north-east-news/bank-erosion-in-the-brahmaputra-valley-impact-and-causes.html>

"The entire Brahmaputra valley is at present reeling under a devastating flood. The peak flow of the Brahmaputra during this wave of flood at Pandu was about 39000 cubic meters per sec (cumec). Statistically, this kind of flood is quite common and happens almost every 10 years. The highest ever recorded flow at Pandu is about 72000 cumec. It is difficult to imagine the kind of devastation such a flood may cause today. Lurking behind this flood is its twin brother – the erosion waiting to strike once the flood recedes. It is even a more serious problem than floods in the Brahmaputra valley. It causes immense damages to life and property. Farmers in the river bank are turned into paupers overnight through a permanent loss of their land. Unlike floods, which have many benefits as well, such as enriching the soil, recharge of groundwater, increased fish population, etc, erosion has no good side and is feared by everyone living on the river banks of the valley.

Complete and permanent immunity from erosion in Brahmaputra valley is a utopian concept. This is because the entire Brahmaputra valley is formed of river deposits (alluviums) brought down by the river and its tributaries. Changes in a river course through erosion and deposition in its alluvial plain is a natural process and cannot be stopped permanently. To assess the extent of erosion from 1988 to 2015, a bank line study of the river was carried out from satellite imagery by Brahmaputra Board in 2016. The study revealed that there has been an erosion of 798 sq km against the deposition of only 208 sq km during this period. Even this deposited land has no immediate value. Such land can be utilized for agricultural purposes only after the formation of the topsoil, which generally takes decades.

Comparative bank line studies on the Brahmaputra have also been carried out by other reputed organizations for different periods and in the Master Plan of the Brahmaputra prepared by the Brahmaputra Board from 1930 to 1967. All such studies indicate erosion to be much higher than land formation from the year 1950 onwards in the Brahmaputra valley. This implies a trend of an increased riverine area and decreased habitable land in the valley. It also indicates an increased instability and higher erosion rate in the river with time which is a worrisome situation. A total of

2534 villages were obliterated and 90726 families rendered homeless during the same period. Thus, the average erosion in this period by the Brahmaputra has been about 75 sq km per year with 5670 families losing their land annually. The Sadiya town was completely eroded away due to erosion after the 1950 earthquake.

In 1954, a major part of Dibrugarh and Palasbari towns were eroded by the Brahmaputra. The Dibrugarh town could be saved through the intervention of no less a person than the late Jawaharlal Nehru, the then Prime Minister of India, who visited Dibrugarh in 1954. Severe erosions still continue in a number of locations along the banks of Brahmaputra and many of its tributaries.

Large damages to private and public properties including roads, bridges, embankments, buildings, power transportation infrastructures, homesteads, and cultivated land happen every year. In addition, intangible losses in the form of loss of forest areas, loss of daily wages/wasted time due to communication breaches are a common feature in the valley. Main causes of bank Erosion: Floods and erosion are interrelated. Floods are intricately linked to causes of erosion whereas erosion leads to floods in many cases. However, the basic reason for erosion in the Brahmaputra is due to the fact that it is an extremely braided river. The characteristic features of a braided river configuration such as the Brahmaputra are -a wide river, unstable and poorly defined banks and shallow depth of water. The braided watercourse consists of a number of entwined channels, divided by islands, which meet, cross and separate again. During floods, the channels are combined, most of the sand bars get submerged and the river appears to be a wide straight unbroken channel.

The main causes which seem to bring about braiding of the Brahmaputra river are: i. Steep slopes: For a river of its size, the river slope of Brahmaputra is considered by experts as steep. Enormous kinetic energy is generated while this huge mass of water flows. The energy generated is higher when the slope is steeper. To dissipate this energy, the river attacks its banks, erodes and widens. The channels meander between the banks and try to lengthen its path thereby making the slope flatter to attain a regime condition. This leads to the braiding of the river. ii. Abundant sediment and bedload: Amongst the largest rivers in the world, Brahmaputra carries the highest sediment. Almost the entire quantity of it is carried by the river during the rainy season. The main stem Siang and numerous tributaries bring down a large amount of silt along with heavier bedload particles from the hills.

On entering the plains of the valley, the river slopes flatten immediately resulting in a drastic reduction of the velocity. The river loses kinetic energy and is unable to carry forward the heavy silt load. Initially, it starts depositing the boulders, pebbles and coarse sediments. As the river moves downstream through the valley, the slope flattens further resulting in the settlement of even finer sediments/silts. The deposited sediments which form the bedload of the river are also

gradually carried downstream by the river but at a much slower pace than the lighter suspended sediments.

Whenever there is a large flow, bedload propagation becomes more active. As soon as flow reduces, the bedload settles down which gets deposited on the river bed and blocks the flow. Unable to find its way forward, the flowing water moves in a lateral direction and attacks the banks. In the process, the river either erodes the banks or forms avulsed channels to make its way, thereby further braiding the river. iii. Erodible banks: Except for a few nodes where the banks on either side are stable, the Brahmaputra banks are not well defined all along its length. The bank materials, other than at these nodes and hard points (rock outcrops) are made of silty or sandy loam in the top layer followed by silty clayey loam or clayey loam in the deeper portions. These are easily erodible materials. Therefore, the river banks keep shifting due to erosion as well as deposition of sediment. The condition also encourages the formation of distributaries by eroding the high banks (levees) and entering into low lying areas in the countryside thereby braiding the river. iv. A highly variable discharge (flow per unit time): The discharge of Brahmaputra varies from 10 to 20 times between its lean periods and normal monsoon periods. During the monsoon itself, there is a wide variation of flow.

The discharge is much higher during the intermittent waves of floods in this period. Along with the heavy siltload present, this variation of flow leads to the instability and braiding of the river. Nature adjusts its hydraulic parameters at a given cross-section of a river. It is done in a manner so that the water and sediment load coming from the upstream is transferred to the downstream in the most efficient way with minimum expenditure of energy. Given the above parameters, nature has chosen the braided river plan form for the Brahmaputra river as the most suitable and efficient pattern to execute the transport of its water and sediment. For the same reason, many of the north bank tributaries of the Brahmaputra originating in the Himalayas such as Lohit, Dibang, Subansiri, Jibhoreli, Manas, Aie, Sankosh, etc have a highly braided form in the valley. Therefore, all these rivers have serious bank erosion problems. But the south bank tributaries have meandering forms in the valley and are much less problematic from the point of bank erosion. This is because they have a much flatter slope and carries about one-fifth of silt load to that of Himalayan rivers for a unit area of the catchment.

### **West Bengal: Sunderbans: Fisherman dragged by tiger; third incident in 2 weeks**

<https://www.deccanchronicle.com/nation/current-affairs/300719/sunderbans-fisherman-dragged-by-tiger-third-incident-in-2-weeks.html>

"A fisherman was dragged away by a tiger in West Bengal's South 24 Parganas district on Monday. The incident has taken place three weeks after two women were killed in separate tiger attacks. A resident of Rajatjubli in Gosaba, Arjun Mandal, 45, was dragged away from a boat where he was preparing his lunch, said forest officials. This was the tenth attack in the Sunderbans since December 2018. Sunderbans is home of the Royal Bengal Tiger. As per the

report released by Prime Minister Narendra Modi on Monday, the number of tigers has increased from 76 in 2014 to 88 in 2019 in Sunderbans. A senior forest official said the search was on but no body has been recovered. According to locals and forest officials, Mandal went to Pirakhali that is a part of the core forest area on Friday (July 26) to catch fish. He was accompanied by two villagers Dhruba Mandal and Paritosh Mridha, Hindustan Times reported. Mandal and Mridha couldn't save him and informed the forest officials. A senior forest official said all three of them had permission to enter the core area of the forest for fishing. The Sunderbans is crisscrossed by rivers and narrow creeks -- often not more than 15-20 feet wide -- hosting a lot of fish and crabs. Those who go to catch fish in these creeks often come under predatory attacks. Usually, the tigers attack fishermen who step on the land. Sometimes, tigers also jump on the boats where the channels are narrow. Fishing, collection of honey and firewood is the primary source of income for the inhabitants of Sunderbans.

**West Bengal: Hilsa woes: Patchy rain puts dent in supply of Bengal's favourite fish, traders stare at loss**

<http://www.millenniumpost.in/kolkata/hilsa-woes-patchy-rain-puts-dent-in-supply-of-bengals-favourite-fish-traders-stare-at-loss-366201>

"The monsoon platter of a Bengali is incomplete without Hilsa and the fish-lovers in the state are unhappy due to scarcity in its supply. Even the Hilsas which are found in Digha Mohana have shrunk in size. The shortage in the supply of Hilsa so far is due to patchy rains. The quantity of the fish found in Digha Mohana so far this year is also lesser in comparison to the figure in the corresponding month of the previous year. The fishes which are stored after being brought from Myanmar naturally lose freshness and taste and hence they cannot be compared to the fresh catch that comes from Digha and Frazerganj. Supplies of Hilsa have hit a five-year low in this season. Prices have gone up, as the customers are buying Hilsa in the retail market at Rs 1,200-1,300 per kg. In some cases, the prices are even higher in various markets across the city.

These fishes are comparatively smaller in size. Some of the good-sized Hilsas are mostly imported from Myanmar but they often lose freshness due to prolonged storage. Fresh catches from Bengal are always of better taste. The experts are saying that lower rainfall in South Bengal has affected Hilsa migration from Bay of Bengal to the estuaries of Hooghly river. There has been no major landing of Hilsa since the beginning of Monsoon this year, which eventually impacted various local markets in the city and the districts. Most of the Hilsas that are caught in Digha and Frazerganj are of smaller size. It may be mentioned here that adult Hilsas migrate to fresh water for spawning. The young ones rear in the river channels and estuaries after they are hatched, before finally going to the sea. Fishermen often catch the Hilsa before migrating from the breeding grounds.

The fishermen community in Digha said that in last two days, the total catch in Digha Mohana weighed around 18 tonnes. On Monday, around 12 tonnes of hilsas have been caught in the area.

Fishes weighing between 500-600 grams cost around Rs 500-600, while those weighing around 700-900 grams are being sold at Rs 700-800 in the markets. Last year, the fishermen managed to catch 75-100 tonnes of Hilsa during this season. The fishermen and fish traders are staring at a loss this year due to the shortage in production.

**West Bengal: Inadequate rains affect freshwater hilsa supply, price shoots up to Rs 1,300/kg**

[https://economictimes.indiatimes.com/news/economy/agriculture/inadequate-rains-affect-freshwater-hilsa-supply-price-shoots-up-to-rs-1300/kg/articleshow/70301344.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](https://economictimes.indiatimes.com/news/economy/agriculture/inadequate-rains-affect-freshwater-hilsa-supply-price-shoots-up-to-rs-1300/kg/articleshow/70301344.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

"Patchy rains have many fallouts among them, this year, a big shortage of the piscine delicacy, freshwater hilsa. Supplies of the fish prized for its flavour have hit a five-year low. Prices have shot up, retailing at Rs 1,200-1,300 per kg, and in some cases even more, in major metro markets. And here's another market twist most good-sized hilsas being sold currently are frozen varieties imported from Myanmar, not fresh catch from Bengal. Scientists at the Central Inland Fisheries Research Institute (CIFRI) said lower rainfall in South Bengal affected hilsa migration from the Bay of Bengal to estuaries of the Hooghly river. Traders say there has been no major landing of hilsa since the beginning of monsoon, and that smaller hilsas that have been caught are being sold locally in Bengal.

Adult hilsas migrate to fresh waters from the sea for spawning. The young, upon hatching, rear in the river channels and estuaries before descending to the sea. Fishermen catch the hilsa during the migration and from the breeding grounds. UK Sarkar, head of reservoir & wetland fisheries at CIFRI, said, "There is hardly any rainfall in south Bengal that can accelerate the migration of hilsa fish from Bay of Bengal to the estuaries of Hooghly and its channels. Weather is the stumbling block for migration this year. According to the regional meteorological department, there has been 50% deficient rainfall from June 1 till date in the Gangetic West Bengal. Fish traders from Delhi and Mumbai said that they are selling hilsa from Myanmar. A fish retailer in Navi Mumbai said there's "huge demand for hilsa but that supply was "very low. Those who love freshwater hilsa have got another reason to hope for better rains in latter part of the monsoon.

## **West Bengal: 516 fishermen who strayed into Bangladesh waters return home**

<https://indianexpress.com/article/india/516-fishermen-who-strayed-into-bangladesh-waters-return-home-5835013/>

"As many as 516 fishermen, who had been stranded in Bangladesh, along with 32 fishing boats were handed over to the West Bengal State Fisheries authorities at Kakdwip fishing harbour, officials said on Wednesday. "The Indian Coast Guard (ICG) in a coordinated operation with Bangladesh Coast Guard (BCG) successfully repatriated 516 fishermen along with 32 Indian fishing boats from Bangladesh, said a statement issued by the Indian Coast Guard. The fishing boats had strayed into Bangladesh waters due to rough sea and strong currents on July 6 and 7. The Bangladesh Coast Guard offered shelter to the fishermen at Payra Port. They were also provided with food, fresh water and fuel to return to India.

The boats started on July 16 and were escorted by Bangladesh Coast Guard ships up to the International Maritime Boundary line (IMBL) for repatriation, where they were taken over by the Indian Coast Guard ships Vijaya and Amogh, read the statement. Meanwhile, out the 61 fishermen, who had gone missing into the Bay of Bengal on July 7, 24 are yet to be rescued. The search for those missing Indian fishermen is in progress with the help of the Bangladesh Coast Guard, naval ships and aircraft on Bangladesh waters. The Indian Coast Guard ships, hovercraft and aircraft are also carrying out the search operation off the West Bengal Coast and along IMBL. Earlier, 37 fishermen had been rescued. The fishermen had started from Namkhana in South 24 Parganas district on four trawlers FB Nayan, FB Dashabhuj, FB Babaji and FB Joy Jogiraj.

## **West Bengal: To save fishermen on trawlers, Bengal minister says life jackets must**

<https://m.hindustantimes.com/india-news/to-save-fishermen-on-trawlers-bengal-minister-says-life-jackets-must/story-ycnDPZfBg7u7OkylDccBPN.html>

"Plagued by the regular sinking of fishing trawlers and loss of lives of fishermen, the West Bengal government will hold a meeting with the fishermen association to prepare a blueprint on how to train them and minimise such accidents, said fisheries minister Chandranath Sinha. While Sinha said that the details of the steps would be worked out in consultation with the fishermen's body, he promised to crack down on the reluctance of those going out to the sea to wear life jackets. Incidentally, last year as many as 27 fishermen died in the Bay of Bengal after their trawlers capsized.

This year, 24 are missing after a trawler sunk on July 6. The matter attracted national attention after one of the survivors, Rabindranath Das, was rescued by a Bangladeshi cargo ship. He managed to survive miraculously for five days without food and drank only rain water after his trawler sunk on July 6. On Friday, Sundarbans Development minister Manturam Pakhira said

that if trawlers don't carry life jackets and fishermen don't wear them, the government might decide to cancel the licence of the trawler owners. According to the state government, 10,000-10,500 trawlers in the state go out to the sea to catch fish.

On an average, about 15 men board each vessel that regularly ventures to a distance of more than 80 nautical miles or more than 150 km from the shore. Officials allege that most fishermen do not follow the safety instructions while going out into the sea. The guidelines that are most frequently violated are carrying floating tubes and wearing life jackets on board. "We have called a meeting on Tuesday where all issues will be discussed. We are concerned about the regular sinking of trawlers that has to be minimised. We are also thinking of imparting training to the fishermen who steer the trawlers," said Chandranath Sinha.

"Many trawlers owners do not follow instructions and rules that enjoin carrying life jackets and rubber tubes in the trawlers so that loss of lives can be avoided, the fisheries minister added. Officials of the fisheries department allege that mishap sometimes takes place because many of those who steer trawlers lack proper training.

"We are contemplating whether we could appoint an agency that would impart training to steer these vessels, said a senior official of the fisheries department. "We would be present at the meeting. If the training is arranged we will welcome it, said Bijan Maity, secretary of the fishermen Association of Kakdwip. He also admitted that most fishermen do not wear life jackets since it is uncomfortable to wear these synthetic materials in sticky weather. "But if the government plans to take strong action against erring fishermen, we would welcome it, since it concerns the most important issue of loss of life, said Maity.

"There are many issues. We insist that while giving a licence, the government should physically verify whether trawlers have all the equipment on board. However, we often hear that there are not an adequate number of officers to carry it out, said Pranab Kar, president Digha Fishermen & Fish Traders Association. Kar also said that they would be greatly benefited if the government dredges the channels connecting the sea and Shankarpur (in East Midnapore district) since trawlers get damaged due to shallow drafts. Some incidents of trawlers capsizing also take place in these areas, said another functionary of a fishermen's body.

## **West Bengal: Fishermen suffer for fishing ban in Sundarbans**

<https://en.prothomalo.com/bangladesh/news/198761/Fishermen-suffer-for-fishing-ban-in-Sundarbans>

"Amid a 65-day-ban on netting fish in the Bay of Bengal, the authorities imposed a fresh ban on all kinds of fishing in rivers and canals that flow through the Sundarbans. In a prohibitive order, the forest department banned fishing in 13 rivers and 450 canals inside the Sundarbans for two months starting from 1 July. The step has been taken to ensure safe breeding and conservation of aquatic animals and prevent poisoning in the river. Fishermen of the area are already facing another ban imposed on fishing in the Bay of Bengal. That ban, which started on 20 May, will continue till 23 July.

In such circumstances, those who earn their livelihoods by fishing got frustrated as they will have to sit idle during the entire period. The authorities did not bother to provide any alternatives for them to earn their way. Hundreds of fishermen are now jobless and without an income. Obviously this affects repayment of their debts with local money lenders. Although they are jobless, they have to repay their loans with the same rate of interest. Ishaq Gazi, a fisherman of Khulna's Koyra Upazila, said after Cyclones Sidr and Aila, most of the residents in Koyra area are dependent on the Sundarbans to manage bread and butter. He also earns his livelihood by fishing here.

"But the authorities imposed ban on fishing for next two months. As a result, I along with family members have to go through severe financial hardship during the period," Ishaq said. Another fisherman of Shyamnagar, Raees Molla, demanded financial assistance from the government as they have to sit idle during the period. Eight members of his family are fully dependent on fishing in the Sundarbans for earning livelihood. ""We are looking for another way of income,"" he added. According to forest department, 13 large rivers, including Bhola, Baleswar, Shal, Pashur, and 450 canals stream through the largest mangrove forest. In these rivers and canals, there are 210 species of white fish, 24 species of shrimp, 14 species of crab, 43 species of molluscs and lobster.

In addition to these, there are 6 species of dolphin, including nearly extinct Irawaddy Dolphin. July-August is the breeding season for these fish. In order to ensure safe breeding, netting fish has been prohibited here. Chandpai Range officer (ACF) of Eastern Sundarbans Md Shahin Kabir said fishermen of the area have already been informed about the ban order. But the forest department will allow limited fishing in big rivers, he added. Apart from the surveillance of forest department, members of the management committee of the forest, CPG, VTRT and Wild Team have been employed to enforce the prohibitory order. Md Mahmudul Hasan, Departmental Forest Officer (DFO) of Eastern Sundarbans in Bagerhat, said fishermen get permission for fishing after paying a certain amount of revenue. But some fishermen enter illegally and net fish indiscriminately. In the breeding season, a huge amount of fish gathers in the rivers and canals of the Sundarbans. Taking the opportunity, some dishonest fishermen spray

poison in canals of the area with a lure to get extra profit. Consequently, all species living in water die being affected by the poison. This practice causes adverse effects on the biodiversity of the area. To avoid this, the authorities have taken the step to ban fishing.

### **West Bengal: Anmol Feeds plans to set up one shrimp feed unit at Kolkata**

<https://economictimes.indiatimes.com/news/economy/agriculture/anmol-feeds-plans-to-set-up-one-shrimp-feed-unit-at-kolkata/articleshow/70155688.cms>

"The Rs 500 crore animal feeds company Anmol Feeds has drawn up plans to set up one shrimp feed unit at Kolkata and floating fish feed facility in the Bihar-Uttar Pradesh border. While the unit in Kolkata will be set up at a cost of Rs 25 crore, the floating fish feed unit will require an investment of Rs 30 crore. Talking to ET, Amit Saraogi, managing director of Anmol Feeds said ""Both the units will come up within a time frame of 2-3 years. After both the units become operations, our capacity will go up to 1500 tonnes of animal feed per day from 1300 tonnes of animal feed now.""

At present, Anmol Feeds has eight state-of-the-art manufacturing plants across six states Uttar Pradesh, Bihar, West Bengal, Jammu & Kashmir, Jharkhand and Haryana. With a cumulative production capacity of 1300 tonnes per day, the company, has been catering to the livestock feed requirements of 19 states across India working with more than 50,000 farmer families and 1,000 employees. As a brand, Anmol Feeds has undertaken measurable efforts to nourish India's livestock, poultry and fisheries and enable farmers to lead a life of prosperity, said Saraogi. The company has been on a steady expansion path. It has strong market presence in the in the cattle and aqua feeds across UP, Bihar, West Bengal, North East and Southern India, while its poultry feed vertical serves the North, Central, North Eastern parts of the country. The company has also strategically expanded beyond the Indian shores to Bangladesh, Nepal and Bhutan.

The Anmol Feeds chief also welcomed the government's decision to import 4 lakh tonnes of maize. "We are extremely glad that the Director General of Foreign Trade has granted permission to import 4 lakh tonnes of feed grade maize. The maize deficit had been plaguing the livestock feed industry since last year due to drought and various other reasons. The price of the crop had increased overnight. This had become quite a grave issue for the industry as maize is a very important raw material for producing poultry feed. Import will help to normalise the situation,"" he said

### **West Bengal: Government takes several initiatives for welfare of fishermen: Mamata**

<http://www.uniindia.com/~/-/bengal-govt-takes-several-initiatives-for-welfare-of-fishermen-mamata/States/news/1661266.html>

"West Bengal Chief Minister Mamata Banerjee on the occasion of National Fish Farmers' Day, on Wednesday, said the state government has taken several initiatives for the welfare of fishermen. "Today is National Fish Farmers' Day. In the last 8 years, the Bengla Government has taken several initiatives for the welfare of fishermen, Ms Banerjee posted on her social networking page. "We have issued 2,52,000 biometric identity cards, so far, to marine fishermen. 56,500 old and infirm fishermen have received old-age pension, she added.

**West Bengal: 27 fishermen still lost at sea after three trawlers submerge in Bay of Bengal**

<https://www.dnaindia.com/india/report-27-fishermen-still-lost-at-sea-after-three-trawlers-submerge-in-bay-of-bengal-2769715>

"Six of the 61 fishermen, who had gone missing in the Bay of Bengal after venturing into deep waters despite weather warnings four days ago, were rescued on Monday but 27 are still missing, officials said. Thirteen other fishermen on another boat, which had developed a snag and drifted into the Bangladesh waters due to inclement weather, were rescued by the coast guards of India and the neighbouring country in a coordinated operation on Saturday, a Defence official had said. With this, 34 fishermen have been rescued since Saturday, the officials said. The secretary of the fishermen's association at Kakdwip, Bijon Maity, said six fishermen of FB Dashabhuja were rescued by fishermen in Haribhanga islet of Bangladesh and they were brought to Kakdwip on Monday morning.

Adding a bit of context, he explained that fishing at sea had been prohibited since July 1 due to warnings of inclement weather. But since fishermen in West Bengal had hit a dry spell recently, four trawlers had gone out to the deep seas despite the warnings. ""However, strong Western winds routed them towards Bangladesh,"" he said, ""where three of the four boats presumably submerged after hitting a ridge near Haribhanga. 61 fishermen had started from Namkhana in South 24 Parganas district of West Bengal on the four trawlers - FB Nayan, FB Dashabhuja, FB Babaji and FB Joy Jogiraj - on Thursday, Maity said. Though FB Dashabhuja, FB Joyjogiraj and FB Babaji are feared to be submerged, 15 fishermen each from FB Joyjogiraj and FB Babaji have been rescued.

The whereabouts of FB Nayan with 18 fishermen on board are still unknown. Nine fishermen from FB Dashabhuja are also missing, Maity said. After getting information about the missing fishermen by the West Bengal Fishermen Association, Sundarban Development Minister Manturam Pakhira had asked the South 24 Parganas district authorities to launch a search and rescue operation. All the missing fishermen were from Kakdwip area. The Indian Coast Guard (ICG) and its Bangladesh counterpart had rescued 13 crew members on board an Indian fishing boat amidst very rough sea conditions and inclement weather, the Defence official said Sunday. The 13 crew members of fishing boat 'FB Tara Shankar', which had ventured to the Bay of Bengal from Kakdwip, were rescued on Saturday amidst very rough sea conditions and inclement weather, the official said.

The boat had developed a technical problem and on receiving the information, the ICG regional headquarters contacted the Bangladesh Coast Guard (BCG) West Zone headquarter at Mongla. A Bangladesh Navy ship located the Indian boat with 13 crew on board near the Mongla Fairway Buoy in the evening on Saturday and rescued all the crew members on the boat. The Bangladesh Naval ship took the Indian disabled boat under tow and brought it to Pussur river mouth, which is approximately 60 nautical miles eastward of the Indo- Bangladesh maritime border, where 100 more Indian fishing boats were sighted. The disabled boat was handed over to one of the operational Indian boats for towing back to India.

As the sea was rough, around 100 Indian fishing boats, including the disabled one under tow, were guided by the Bangladesh Naval ship for taking passage through the riverine/coastal route westward up to the Haribhanga river, the official said. The coast guards of India and Bangladesh have a memorandum of understanding (MoU) followed by a 'Standard Operating Procedure' for helping each other during such incidents and making waters of North Bay of Bengal safe, he added.

### **West Bengal: Sunderbans 'tiger widows' seek damages**

<https://www.telegraphindia.com/states/west-bengal/sunderbans-tiger-widows-seek-damages/cid/1693333>

"If a fisherman in the Sunderbans is killed by a tiger, the family not only has to deal with his death but faces intense harassment from the authorities, in case he was fishing in unlawful territory. In the Sunderbans, fishermen are often forced to do so. "But when a death occurs, government officials, instead of helping us, want to lodge a case against us, said Gita Mirdha from Lahiripur in Gosaba, who had lost her husband in a tiger attack. She was one of the 20 women from various places in the Sunderbans who were in the city on Thursday at Press Club, when the NGO ActionAid launched a small study on single women from economically backward sections in Bengal.

The "tiger widows, as they are labelled, spoke about the severe hardships they and their families were subjected to and the utter neglect they received from the authorities. "The family of a man who dies from a poisoned drink is compensated by lakhs. But the family of a man who had risked his life to work for his family is harassed, Gita said at the event, which was also organised by Disha, a non-profit organisation. Any talk of compensation will not be tolerated because the dead fisherman could be in unlawful territory. The women spoke forcefully about their loss of dignity, when they were interacting with officials. "Ora galigalaj kore (They abuse us verbally), said Mirdha. Kaushalya Mandal, from Dayapur in Gosaba, who lost her husband to a tiger attack as well, also spoke about the loss of dignity and the harassment that follows such a death. Accompanying the women was Milan Das of Dakhin Banga Matsyajibi Forum (South Bengal Fishermen's Forum). He said the number of tiger attacks was on the rise in the Sunderbans, and

those dependent on forest resources for their livelihood, such as fishermen and honey-collectors, were more vulnerable than ever.

Though no official record is available, researchers working on tiger attacks feel there have been about 3,000 such deaths since the 1980s. The number has risen steadily in the last few years. The declining number of fish and the market demand push fishermen deeper into the forested parts. “It is a fact that the fish catch has been gradually declining over the last few years, forcing the fishermen into waters close to forest areas, particularly within narrow creeks adjacent to wild islands, thus increasing their risk to tiger attacks, said Das. Several deaths have occurred of late near the Gosaba block, adjacent to the tiger territory.

While the animals are protected under the Wildlife Protection Act, the Sunderban area does not come under the Forests Rights Act, which would allow them access to forest resources, pointed out environmental activist Naba Dutta. This conflict of law forces men into prohibited territory. Both man and animals need protection; but can one be at the expense of another? The women who have lost their husbands said they wanted to form an organisation to make their demands heard. “We do not want any ‘core/buffer’ differentiation (lawful/unlawful territory for fishing). And we want Rs 3,000 to Rs 4,000 from the government to help us, said Mirdha. “If required we will go on a hunger strike. Climate change impact and market demand have been combining to push up man-tiger conflict in the Sunderbans.

Climate scientist and Sunderbans expert Sugata Hazra linked the decline in fish to climate change. “Due to impact of climate change, particularly sea surface temperature rise, the salinity of the Sunderbans water is steadily increasing. This further enhanced because of recession of fresh water flow from upstream. Fish are generally sensitive to such micro-environmental change, said Hazra, who teaches at the oceanographic department of Jadavpur University. “The surge in crab demand in the Sunderbans is also responsible, added Hazra. Crab catchers often go very close to the forest, in the adjacent mud flat or low level water, to catch crabs. Das agreed that crab demand is on the rise. This year one quintal crab was sold even at Rs 1 lakh.

### **West Bengal: Fishing in Sundarban banned for two months**

<https://www.dhakatribune.com/bangladesh/nation/2019/06/25/fishing-in-sundarban-banned-for-two-months>

"Forest Department has banned fishing in canals of west Sundarban area for two months. According to the Forest Department, July-August is the breeding season for more than 291 species of fish in 450 canals and 13 rivers of the Sundarbans. 210 species of whitefish, 24

species of shrimps, 14 species of crabs and 43 species of lobster can be found on these waterbodies. Sundarban Forest Department (west) Forest Officer Bashirul Al Mamun said: ""We banned fishing in the area, but a limited fishing is allowed with Forest Department's permission. We are patrolling the area to prohibit illegal fishing."" Fishermen from Mothurapur of Munsiganj union, Rabindra, Amol and Ayub said: ""The ban is necessary for our own benefit. We will fish in rivers instead of the canals for next two months.""

### **West Bengal: On the trail of the vanishing waterways of Bengal**

<https://www.telegraphindia.com/states/west-bengal/on-the-trail-of-the-vanishing-waterways-of-bengal/cid/1692964>

"Even as late as the 1920s, squabbling sisters in households across Bengal were rebuked thus Gaang-e gaang-e dekha hoy, kintu bon-e bon-e dekha hoy na. Meaning, even rivers meet but not sisters they are married off early and have to go separate ways. The subtext, therefore, being don't quarrel so. The olden reprimand remains poignant to date, as much for the memory of siblings wrenched apart in a differently wired society, as for the reminder that once upon a time this geography was river-rich. Bengal, the only state in India that has snowy mountains to its north and the sea to the south, bears a natural slope. This helps hundreds of rivers flow through the land and towards the Bay of Bengal. This also helps develop countless other water bodies.

"But in the past 100 years, nearly 700 rivers have died in the delta of the Ganges [in Bengal], and the Padma and the Meghna [in Bangladesh], says Anup Halder, a researcher on the rivers and other water bodies of Bengal. He adds, "In Bengal, we have lost most tributaries and distributaries flowing eastwards of river Hooghly. Even those that are alive are on the verge of death because of human intervention. Historical and geographical factors do play a role in the degradation of rivers, but man-made factors play a greater role. The districts of Nadia and North 24-Parganas in Bengal have already lost a large number of rivers in the past few decades. Environmental activist Swapan Bhowmick and I decide to visit other rivers in that geography that are dying. Pabakhali village is in Nadia, 80 kilometres north of Calcutta.

This is where the mighty Mathabhanga, a distributary of the Padma, bifurcates into the Churni and the Ichhamati. Legend has it that such was the force of the Mathabhanga once that its head (matha) split (bhanga) into two. Today, from our vantage spot in Pabakhali the spot where the three rivers come to a knot it is difficult to imagine such tumble and rush. The place is knitted over with water hyacinth, interspersed with jute and alocasia cultivated by local farmers. The Ichhamati is a trans-boundary river one that crosses at least one political border. Bhowmick and I start walking along the river bank.

The river source at Pabakhali has dried up due to excessive silt deposits, something that was triggered when the British built a "guard wall here in 1942. The idea was to tame the river so

they could build a bridge over it. The wall broke the force of the waters and rich alluvial silt was deposited on the riverbed. In the days that followed, the dry but fertile riverbed began to attract encroachers and even farmers. Ironically enough, today, farmers must extract irrigation water from the river bed using shallow pumps. Jyotirmay Saraswati, a social worker and an activist of the Save Ichhamati Movement, joins me. He talks about “mindless encroachments. He says, “Not just farmland, you will find even roads, markets and temples on the riverbed. In the last 50 years, the average width of the river has come down from 330 feet to 30 feet.

Saraswati believes the river can be saved if all encroachments are removed and the boundary (of the river) is demarcated. Local people allege that these encroachments are happening with the tacit support of political parties and the administration. Activists have appealed for excavation of the riverbed and broadening of the width of the river in order to restore its old glory. Saraswati points out that too many concrete bridges with pillars dug into the riverbed have also damaged natural flow. Saraswati and I keep moving. Close to Narayanpur, 33 kilometres from Pabakhali, I notice an odd construction work. I am told that would be the beginnings of a temple so what if it juts onto the riverbed? About two kilometres away, at Kalopara, we stop for tea. A gaggle of fishermen is playing cards and chatting under a banyan tree. Manmatha Mondal, 78, is particularly chatty. He says, “When I tell young people how we would regularly haul giant fish out of these very waters, they are more disbelieving than incredulous.

According to him, several species of fish such as rayek, bheda and baush have completely disappeared, as have the mechho kumir (fish-eating crocodile), dolphins and turtles. “The river kept getting narrower and narrower. The jungles on the river banks were also cleared. Several species of birds disappeared, says Saraswati. Mondal recalls a bird called kullo similar to the eagle that would be sighted feeding on river fish. He says, “As children we used to recite the rhyme: Kothay neel, Kothay cheel, Kothay kullor basha... Kothay means whither or where in Bengali. In the 1945 Bengali novel, Ichhamati, Bibhutibhushan Bandyopadhyay described this river as “proof of divine artistry, with its banks so verdant, so irresistible to the birds. Kothay se Ichhamati? Whither that Ichhamati? We pick our way downstream along the Mathabhanga there is no way of telling anymore but I was told as much by Bhowmick. Here is where we make the acquaintance of Basudeb Haldar, a fisherman waiting for a catch. It is 12 noon and he has been waiting since early in the morning. There is not enough fish in the waters. Earnings from fishing have gone down drastically. Even families that have been doing this for generations have given up the net. They have turned into daily wage labourers instead. Haldar rears a herd of goats to supplement his income. We visit his home, a mud hut. Some fishing nets are strewn carelessly about the place.

According to Bhowmick, 30,000 fishermen across 130 villages have been rendered jobless. Pradip Chatterjee, president of Dakshinbanga Matsyajibi Forum (a forum of the fisherfolk of southern Bengal), says, “We are the biggest losers as rivers die or deteriorate. The right to fish is a basic right for millions of us. The forum has been fighting for an effective national water policy

that will acknowledge fisherfolk as custodians of the rivers. He adds, “Just like indigenous people have land rights we must have water rights. We, the fisherfolk, can save the rivers for our own survival. And also, for the greater common good. It is funny that Chatterjee should bring up the greater good, especially because from the sound of it, there is a lot of no-good at play here endangering river life as well as the rivers.

Fisherman-turned-labourer Swapan Roy says there is an illegal fish trapping system called badhal that fish merchants resort to in these parts. The badhal uses bamboo poles and specially designed nets to trap river bodies, in the process obstructing the natural flow of water. Roy says, “The system deprives other fishermen of their legitimate catch and damages the biodiversity of the river. Farmers and fishermen living by the river are also adversely impacted by effluents dumped upstream by a sugar mill in Bangladesh.

“Effluents kill aquatic life, says Bhowmick. The affected people have now come together to form a river rescue committee. The committee has appealed to chief minister Mamata Banerjee and the prime ministers of India and Bangladesh to save the river system. “Despite appeals to both the state and the Centre, the simple solution a waste treatment plant in Bangladesh has not materialised, says Bhowmick, the committee secretary. But, he adds, the protests have been successful in checking illegal fishing and efforts are on to stop municipal bodies from dumping waste into rivers. He continues, “Following our petition, the municipal corporation of Ranaghat has been directed by the National Green Tribunal [the all-India forum for redressal of environmental problems] to establish sewage treatment plants and take steps to revive the river that joins the Hooghly at Chakdah.

While the Ichhamati and Churni are both on the verge of death, Halder lists other rivers that have simply vanished or are on the verge of it. The Jamuna tops the list of stolen rivers; all that is left of it are bits and pieces of water bodies in the Kalyani-Haringhata area. It is very difficult to trace the original riverbed that remains lost in a warren of markets, apartments, schools, temples and mosques. He shows me photographs of paddy fields from villages in interior Bengal that used to be tributaries of the Jamuna, or streams, even half a century ago. Chaiti, Jhora, Lavanyamati, Suvarnamati, Sonai, Morali, Anjana and Surodhani are some of the lost rivers. In the case of Morali, says Halder, there is no trace of the river; it is all dirt-track and paddy fields. He blames indiscriminate extraction of water for drinking and irrigation and dumping of wastes and mining of sand and clay for this.

According to Halder, the reckless extraction of water damages the aquifers (an underground layer of water-bearing permeable rock), mobilises minerals deposited deep inside the earth, basically leading to contamination of drinking water with arsenic, fluorides, chlorides and other harmful chemicals. Bijan Darbar is one of many non-government organisations campaigning against these practices and for the resuscitation of rivers. After much protest by villagers and different environmental groups, the Bengal government allocated Rs 26 crore for excavation of

the Jamuna. This was in 2018. It is already dusk by the time we reach Duttapulia, 30 kilometres from Pabakhali. This bit of the Ichhamati now serves as a sewer, thick with waste from the market styrofoam boxes used to store fish, rotting vegetables and fruits. Says Saraswati, "The pile of garbage often catches fire; then it is literally a river on fire. Quintessential Ichhamati lost but lyrical to the end.

### **West Bengal: Brackish water from prawn bheris seeps into farmland, destroys crops**

<http://www.millenniumpost.in/kolkata/brackish-water-from-prawn-bheris-seeps-into-farmland-destroys-crops-354927>

"A large stretch of land in East Midnapore district is steadily getting converted into saline ponds because of the uncontrolled and intensive aquaculture that has increased salt concentration in local water bodies damaging the cultivation of paddy and other food grains. The area is used for rampant production of tiger prawns and vannamei shrimp using traditional methods of farming which fetches dollars from the international market. The money earned from foreign market helps to cover the production cost. Fishermen organisations in the district have alleged that aquaculture was being done illegally by a section of people on the acres of land throughout the district.

They pointed out that the paddy production has dwindled because of the salinity of water and the intensive aquaculture is taking a heavy toll on the environment and contributing marine pollution. As salty water from various rivers that are close to the Bay of Bengal is being channeled to the bheris through canals, it is affecting crops. The water in rivers close to the coast is brackish because sea water enters during high tide. As the salty water seeps into cultivable land, it affects paddy. Several farmers from the district had earlier spoken about a significant drop in paddy production, with several "illegal" ponds or bheris mushrooming in the area in the past five years. In the past few years, it was alleged that many plots of land close to sea have been dotted with saline water bodies. Interestingly, shrimp farms have gone up in the district in the past few years. 'Purba Medinipur Matsyajibi Forum', has written to the Chairman of the state pollution control board urging him to carry out a detailed study and take adequate steps to check rampant aquaculture in the district.

The letter sent by the president of the forum, Debasish Shyamal, says ground water is used for cultivation of tiger prawns and vannamei shrimp and saline water is stored in the fish ponds. The pond water is treated with many medicines and harmful materials which finally reaches the sea through canals. These toxic materials are affecting the marine creatures. The fishermen's organisation urged the Pollution Control Board Chairman to examine the quality of water in the ponds where prawns are being cultivated and the adjoining areas. "We have urged the pollution control board to publish a report on the damage saline water is causing to the farmland. They should publish a report after conducting a probe," Shyamal said.

## **West Bengal: Fighting soil salinity: Land shaping techniques benefit Sundarban farmers**

<https://thewire.in/agriculture/fighting-soil-salinity-land-shaping-interventions-benefit-sundarban-farmers>

"When Panchanan shifted from Dakshin Mokamberia to Motgora village in Basanti block more than five years ago, about 70% of villagers migrated regularly because of low farm productivity. Farmers mostly grew one crop a year; when land was left fallow after kharif harvest, salinity set in. The Sundarbans in the Gangetic delta is known for its soil salinity, which is aggravated by prolonged water-logging during monsoons. The acidic sulfate soil of the region created problems of nutrient management and overall soil management too. Lack of freshwater for irrigation was also becoming a problem in the rabi season, and the villagers did not wish to continue farming.

Today Panchanan grows cucumber, yard-long beans, bitter gourd, cauliflower, tomatoes and winter rice in his father's land that measures a little over two acres. He also has fish in his farm pond and earns about Rs 2 lakh in profits in both kharif and rabi seasons for his family of seven. Migration in the area has decreased by about 80%. While the land shaping interventions brought down salinity, improved productivity and increased farm incomes, farmers are perplexed without continued consultation from local agricultural experts on overcoming new problems. Post-cyclone remediation In 2009, Cyclone Aila left behind a trail of destruction, severely affecting agriculture in the region. Global Environmental Facility funded a project on sustainable management of degraded coastal land to ensure livelihood security of the farming community, through National Agriculture Innovation Project (NAIP) of Indian Council of Agricultural Research. With many local institutions as partners, the project was implemented from 2009 to 2014 in Canning I, Basanti, Patharpratima, Mathurapur II, Kultali, Namkhana and Kakdwip administrative blocks in South 24 Parganas district and Sandeshkhali II block in North 24 Parganas, which were affected by the cyclone.

The regional research station of Central Soil Salinity Research Institute (CSSRI) at Canning led the initiative, introducing different land shaping techniques and studying their impact on soil, water, environment and coastal farmers' livelihood. Four rural technology centres were established for training and capacity building of farmers. Land shaping Major technological interventions were rainwater harvesting, land shaping for improving drainage and enhancing productivity of degraded land. Other measures included crop diversification, besides promotion of vermi-composting and allied methods for improved productivity and soil health. Rainwater harvested in furrows and pond is used to grow a range of vegetables through the year. The root zone soil stays relatively saturated with fresh water during the initial dry months after kharif, reducing the upward capillary flow of brackish water and reducing salinity build-up.

Impact In Dakshin Mokamberia and Motgora, Panchanan and 70 farmers learnt land-shaping techniques from the CSSRI scientists. As efforts bore fruit, another 260 farmers opted for land

shaping of their fields, quite a few doing so at their own cost. “Interacting directly with farmers helped our scientists demonstrate the benefits of the technology and help them handle the challenges in salinity, soil health management, rainwater harvesting and sustainable agriculture, Dhiman Burman, head of CSSRI, Canning told VillageSquare.in. The intervention made Panchanan shift from kharif rice mono-crop to a multiple crop cycle of kharif vegetables, winter rice and rabi vegetables, helping him earn more and stay back in his village.

The farm pond was used for paddy-cum-fish cultivation during kharif. For two consecutive years, Panchanan earned Rs 50,000 selling fish. Over the five-year intervention period, 1,583 households benefitted. Profits from growing vegetables in the kharif season varied between Rs 30,000 and Rs 50,000. In general, farm incomes went up six to 10 times even in the poorest households. Maintaining soil health The template for agricultural sustainability developed by CSSRI scientists through land shaping needs continuous inputs from local block-level experts to sustain it. Land shaping has addressed the salinity issue, said Panchanan.

“However, salinity is a severe problem and the amount of water harvested in the farm ponds may prove insufficient to overcome salinity. That makes us anxious and fearful of how the soil would be in future, he told VillageSquare.in. Unsuitable practices Today, Dakshin Mokamberia and Motgora farmers face problems with cucumber and tomato, the two main income-earning crops. The problem stems from soil health and application of unsuitable fertilisers and pesticides, without consulting local experts at the office of Assistant Director of Agriculture (ADA), Basanti. In Dakshin Mokamberia, pests attacked the cucumber crop in Gautam Bera's one-acre plot quite early. “Parimal Manna (who did land shaping at his own cost) is attending a meeting on organic inputs. He will find a solution, Bera told VillageSquare.in. Bera had not consulted the ADA's office. The local agri-input dealer had suggested the dosage.

Lack of support Indiscriminate use of pesticides may negate gains of using organic fertilisers, as a field visit showed. Another problem is paucity of advice regarding production planning. Narugopal Halder has less than an acre of ridge area to grow vegetables, and two farm ponds for irrigation and pisciculture. His important need is to meet the needs of his family of four and thereafter grow surplus. With nobody to offer advice, he suffered a loss this year as he grew freshwater carp with brackish water prawn – a poor combination.

“The ADA office turns a deaf ear when individual farmers seek advice. They are more interested in working with NGOs and farmer groups, said Panchanan. Repeated attempts to get a response from the ADA's office in Basanti proved futile. The project undoubtedly showed what scientific intervention can do for farmers' livelihood. In total, 13,200 households participated in NAIP's project. However, as ground realities change and farmers face new issues, handholding by local institutions is a must to consolidate the success.

### **West Bengal: Resource crunch threatens Bengal fishers with subsistence crisis**

<https://www.dailypioneer.com/2019/pioneer-exclusive/resource-crunch-threatens-bengal-fishers-with-subsistence-crisis.html>

"Hundreds of fishermen who depend on Bhagirathi-Hooghly stretch of the Ganga in West Bengal for livelihood are staring at a bleak future. Scientists from ICAR-Central Inland Fisheries Research Institute (CIFRI), Kolkata, have said fishery as a profession is unable to provide a decent life to them. Blaming declining fishery resources to alarming levels of pollution, riverfront encroachment, rampant sand mining and unregulated overexploitation of the river, researchers have stressed on providing alternative livelihood to these fishermen. The study is published in the latest edition of Current Science journal. The team of CIFRI researchers Arun Pandit, Anjana Ekka, BK Das, S Samanta, Lokenath Chakraborty and Rohan K Raman examined the socio-economic conditions and nature and extent of livelihood diversification of fishers' households in the Bhagirathi-Hooghly stretch of the Ganga at different locations.

Over 500 fishermen from Sagar to Farakka (560 km stretch) in West Bengal were interviewed. The study area was divided into three stretches depending upon the width of the river and intensity of fishery activities. The lower stretch was from Sagar to Dakshineswar where the river is wide and fishing activity is quite intense. The upper stretch was from Nabadwip to Farakka, where the river is comparatively narrower, while in the middle stretch was from Dakshineswar to Nabadwip, the width of the river and fishing intensity is medium. The outcome was not encouraging. Researchers noted average monthly income was Rs 9,391 per household. "Fishing is the main occupation of around 88.60 per cent of fishers and overall, fishing contributes about 70.30 per cent to the total income of the family, said researchers. They found a large section of those who fish upstream of the Hooghly often return empty-handed or with a light haul. Their income, 70 per cent of which comes from hilsa fish, was not enough to make the both ends meet.

According to data, there are around a dozen hilsa-fishing communities living along the stretches of the Hooghly. In contrast, the income is higher in the lower stretch because of higher catch and high value fishes like mullets, sea bass, hilsa, prawns and shrimps. It was found that not only the average household income and number of income sources were limited the level of diversification was also quite low. The authors also blamed authorities for the plight of the fishermen. "The Ganga River system is a rich ecosystem which supports about 10-13 million fisher folk and about 300 freshwater fish species. The system provides livelihood and nutritional security to millions of people, however, post Independence, the river has been mainly exploited for irrigation, water supply and hydro-power only.

Riverine fisheries are completely being ignored while large dams, barrages and hydro-power projects adversely affected the river flow and impacted hydrological connectivity between rivers and wetlands. The study noted, "Government needs to develop appropriate strategies to facilitate successful livelihood diversification. Facilities may be created for non-fishing activities like fish marketing kiosks, cloth weaving facilities, agro-processing in fruit orchard areas, e-rickshaws

and so on. Fishers may be trained in other income-generating activities like carpentry, embroidery, dress making, driving, etc, for better livelihood. Also, providing education and skill development training to these fishers would have a large impact on their ability to diversify livelihood options, said the study.

### **The West Bengal: Threat' from high-speed boats sets fisheries officials thinking**

<https://www.thehindu.com/news/national/andhra-pradesh/threat-from-high-speed-boats-sets-fisheries-officials-thinking/article27073649.ece>

"Deployment of high-speed boats (above 180 HP) for fishing in the Bay of Bengal across Andhra Pradesh has emerged as an area of concern with the perception gaining ground that juvenile fish population is getting wiped out on account of these operations. The Central Institute of Fisheries Technology and the Fisheries Survey of India have made it clear that boats below 140 HP should only be allowed for fishing in the State, given the permissible sizes of boat for sustainable fishing without impacting the survival of the fish species.

On Wednesday, the State fisheries authorities conducted a consultative meeting with all boat owners here, seeking their opinions on the operation of speed boats and its impact. National-level meet The State government was to present its view on fishing by the speed boats at a national-level meet scheduled to be held in Delhi on May 14 as a part of finalising the Marine Fisheries (Population and Management) Bill, 2019. About 250-300 high-speed boats with trawl nets are in operation in the State, despite strong opposition from the operators of 4,000 mechanised boats and nearly 12,000 traditional boat operators.

Uneven contest Machilipatnam Mechanised Fishing Boat Operators Welfare Association president Moka Ravikumar said; "The two-month fish catch by the bunch of speed boats equals to the annual catch by the rest of the boats in the State. Speedboats with trawling facilities are to be blamed for catching the juvenile fish, wiping out the population, he added. "Realising the damage being done to the juvenile fish population, at least 56 high-speed boat operators have been persuaded to convert their boats into low-speed ones with 'gill net' facility on the Kakinada coast, said Fisheries Department Additional Director Mr. Seetarama Raju. According to the mechanised boat operators, deployment of speed boats is directly affecting the livelihood of about 1.3 lakh fisher folk. The Fisheries Department will convene a consultative meeting on the deployment of the speed boats in Visakhapatnam on Thursday (May 9) and Kakinada on May 10 (Friday).

### **West Bengal: Demand for FRA implementation in the Sundarbans echoes in 2019**

<https://india.mongabay.com/2019/05/demand-for-fra-implementation-in-the-sundarbans-echoes-in-2019-general-elections/>

"The implementation of the Forest Rights Act in the Indian Sundarbans, a demand reiterated by a section of fisher and forest-dependent communities in the 2019 national elections, has been hindered by bureaucratic and vested local political interests, experts have said. But what lends complexity and a unique character to the issue of non-implementation of FRA in the Indian Sundarbans, according to the experts, is the lack of a "uniform need for the Act's execution in the Sundarban Biosphere Reserve (SBR). The politicisation of FRA in Sundarban does not simply imply bureaucratic interventions towards dilution and subversion of the Act's provisions but also revolves around the ways in which the bureaucracy aligns with the local (communities) in denying the act, according to a 2018 study, authored by sociologists Sarmistha Pattanaik and Amrita Sen.

"To get the Act implemented there you need a collective mobilisation but in the SBR you will find a majority of the people are not so much inclined to get the Act implemented in the region and it the onus is on the rest of the inhabitants to get the Act enacted, Amrita Sen told Mongabay-India. The biosphere reserve is part of the Sundarbans, the world's largest mangrove forest straddling India and Bangladesh. It is home to an estimated 425 species of wildlife, including 300 species of birds and 42 species of mammals, including the royal Bengal tiger. Agriculture and fishing predominate in the Indian Sundarbans, in the Bay of Bengal, which is home to 4.5 million people.

As many as 54 of the 104 islands support human settlements and one in five households now has at least one family member who has migrated out of the region for better employment opportunities. At present, the Sundarbans area of India (SBR) comprises 19 community development blocks, administered by the districts of North 24 Parganas and South 24 Parganas in West Bengal. It consists of roughly 4,200 square km of reserve forest and 5,400 square km of non-forested area. The region goes to polls on May 19. Bureaucracy or community: who is hindering the implementation of the FRA? Sen, who has worked extensively in the Sundarbans, said the major reason for this absence of collective mobilisation is the fact that all the inhabitants of the region are not strictly forest-dwelling and dependent.

"Of the 19 blocks, several are well connected to the state capital of Kolkata and their residents come to the city to work so they are no longer dependent on forests. Further, most of the local administrative groups in villages comprise people who no longer go inside forests to earn their livelihood. They include agriculturalists who are wealthy and hold sway in local politics, Sen said. Passed in 2006, the FRA Act seeks to make amends to India's tribal community and other forest dwellers. The Act makes provisions for recognising and giving the forest rights to forest-dwelling scheduled tribes and other traditional communities residing in such forests for generations but whose rights could not be recorded.

The law also aims to strengthen the conservation regime by recognising forest dwellers' right to sustainably use and manage forests. It empowers gram sabhas (village-level local governance

systems), responsible for the supervision of forest management, to accept, verify and decide community and individual claims on forest lands by the tribals. “The Act's implementation is being hindered not only by the bureaucracy but by a section of local communities themselves. It is only when people demand the Act's execution then the question of action and mobilisation by NGOs and activists arise, said Sen, a postdoctoral researcher at Azim Premji University, Bengaluru. However, according to the Jana Sramajibi Manch, an organisation of fishermen and forest dwellers, about six lakh (600,000) forest-dependent people in the islands are being denied the right to access the forests.

“While the forest department acts by its own set of rules and regulations in the islands, the implementation of the FRA rests with the backward classes' welfare department in the state. There is no co-ordination between the two and bureaucracy is hindering the execution of the FRA, Tapas Mondal of the organisation told Mongabay-India. Mondal also questioned why FRA implementation was absent in two West Bengal districts that administer the Indian Sundarbans, while the Act has been in action in other districts of the state and in other states of India. “The erstwhile Left Front regime did nothing to implement the Act and the current regime (Trinamool Congress) has also not gone ahead with it despite promises to implement the Act and repeated deputations by us, rued Mondal.

“The present government also claims there are existing village committees and hence there is no need to form new gram sabhas as per the FRA provisions in these two districts. In our work with the people, we have found that a section of the people is willing to form fresh gram sabhas, Mondal said. Sarmistha Pattanaik, researcher from the Indian Institute of Technology Bombay, also pointed out that if the rights of the forest-dependent communities are recognised through FRA, it would act as a major blow to the established vote banks in the village.

“It would also deal a blow to the incentives, which the different cadres of the political parties presently leverage in the villages, Pattanaik said. Sen expanded: “For instance, the forest department gets funding for conservation projects in the Sundarbans which also helps local communities to improve their economic and living condition through participation in developmental (such as erosion-arresting embankment construction) and alternative livelihood initiatives through the Joint Forest Management Committees. “The local panchayat committee, with political interests, doesn't want to antagonise the forest department because of the benefits and consequently, is not keen to mobilise to bring the law into effect, Sen said.

Research highlights complexity for implementation of FRA the researchers interviewed 75 households in villages under the Satjelia Gram Panchayat in the Sundarbans. About 51 of the households depended entirely on the forests for their livelihoods, while the rest supplemented their income through wage labour or migrated to cities during times unfavourable for fishing. Most of these villages had residents from Scheduled Castes, including migrants from

Bangladesh; Bhumij and Munda tribes, which are Scheduled Tribes; and those from Other Backward Classes.

“The five village-level representatives of the local committee are mainly agriculturalists, fishery owners or service job holders, with no associations with forests, said the authors. The study found that the decisions regarding matters related to forests rested with the state, in violation of FRA (which prescribes that such decisions should be made by gram sabhas), and the bureaucrats used various tactics to prevent the tribal communities from accessing these forests. The needy and poor are unable to recognise their entitlements and are not active in local politics a situation which the local elites have taken advantage of, according to the study.

“The tribals in Sundarbans are also few in numbers compared to other forests in India, said Sen. The party workers in local panchayats detested the implementation of FRA time and again, and the police have interrupted awareness campaigns, the researchers add. Bureaucracy in the region, in collusion with local elites like forest workers, fishery owners, agriculturists and local political leaders, each with their vested interests, has resulted in the denial of forest rights to the tribal communities, they said, based on their research. Also, given the wide diversity of inhabitants in the inhabited areas of Sundarban, a minuscule of which is dependent on the forests for livelihood, forest workers do not constitute a significant vote bank to contest the political elections for enactment.

“Hence, apart from bureaucratic involvement, what further encumbers the implementation of the act is the disaggregated livelihood interests in the region, said Pattnaik. Echoing the concern on the disaggregated livelihood interests, Pradeep Chatterjee, Secretary, National Fishworkers' Forum, Kolkata, said the mechanism of implementation prescribed in the Act is inadequate for the Sundarbans because there is no forest village in the Sundarbans. “All those dependent on the forest, for fish or wood or honey collection, reside outside the forest, in revenue villages, Chatterjee told Mongabay-India. “If the gram sabha is convened then you will find most people are non-forest dependant people.

The common fishing waters are accessed by people from different villages, which are at a distance and not necessarily by people living on the fringe of Sundarbans. So we have to see who comes to these waters from where, said Chatterjee. Fishing community affected by non-implementation of FRA Chatterjee iterated that the fisher community's main demand is the community forest rights (CFR). “It's a question of CFR but CFR implementation is difficult because you will have to consider all the different communities that come to fish, he added. The mangrove habitat is also witnessed constant friction between fisherfolk and forest department because of laws that prevent them from venturing into the tiger reserve's core areas and other protected patches without specific certificates and boat licenses.

At a public hearing in the Sundarbans in 2016, over 200 people from the region who are dependent on the forests raised the issue of unbridled tourism and non-implementation of the

Forest Rights Act (FRA), 2006. They complained that tourists are allowed to travel to the core areas with motorised boats whereas the forest-dependent people are restricted from doing so. Neither the forest department nor the state government is concerned about the increasing tiger attacks in the region or provisions for compensation for the victims' families. It was stressed that the method of demarcating areas as (arbitrarily) as buffer/core area or extension of the core area is done in an unscientific and illegal fashion without following the provision of FRA.

Chatterjee said although there are challenges to the implementation of the FRA in the Sundarbans, nevertheless, the state government should have done it. - The issue of non-implementation of the Forest Rights Act in the Indian Sundarbans has been raised in the 2019 national elections by a section of fisher and forest-dependent communities. - Bureaucracy in the region, in collusion with local elites like forest workers, fishery owners, agriculturists and local political leaders, together have worked to deny forest rights to the tribal communities, research has suggested. - Sociologists say that the implementation of the law has been hindered by bureaucratic and vested, local political interests, and also because of the lack of a collective mobilisation of local communities who are no longer dependent on forests.

### **West Bengal: Whose 'right' is it in the Sundarbans?**

<https://researchmatters.in/news/whose-%E2%80%98right%E2%80%99-it-sundarbans>

"A quarter of India's population, including indigenous tribes or Adivasis, have for centuries lived in and around forests, depending on it for their livelihood. When the British enacted laws to bring forests under the ownership of the state, these communities lost their homes and livelihoods. In 2006, the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, also called the Forest Rights Act (FRA), was passed to assert the rights of these communities over the forests on which they always depended. After more than a decade, do these communities finally have the right on their forests?"

A study by Prof. Sarmistha Pattanaik and Dr Amrita Sen of Dept of Humanities and Social Sciences, Indian Institute of Technology Bombay, has found that implementation of this law has been marred by bureaucracy. The Forest Rights Act allows traditional forest dwelling communities the right to live in the forests, use them for agriculture and to collect non-timber forest products like honey. The tribal communities also have the right to take decisions on the forest and biodiversity conservation. The act also empowers Gram Sabhas, responsible for the supervision of forest management, to accept, verify and decide community and individual claims on forest lands by the tribals.

In the current study, the researchers have looked at the implementation of this law in the Sundarban Biosphere Reserve, the largest estuarine mangrove forests in the world, shared between India and Bangladesh. The findings were published in the journal *Environment*,

Development and Sustainability. “FRA is presently a bone of contention in almost all of India, specifically those with tribal majorities. However the concerns of our study are quite unique and has not been documented earlier, although Odisha, Maharashtra, Jharkhand have a tinge of similar problems, says Amrita Sen, a former PhD scholar at IIT Bombay and the lead author of the study.

The researchers found that bureaucracy in the region, in collusion with local elites like forest workers, fishery owners, agriculturists and local political leaders, each with their vested interests, has resulted in the denial of forest rights to the tribal communities. The researchers interviewed 75 households in villages under the Satjelia Gram Panchayat of West Bengal. About 51 of them depended entirely on the forests for their livelihoods, while the rest supplemented their income through wage labour or migrated to cities during times unfavourable for fishing. Most of these villages had people from Scheduled Castes, including migrants from Bangladesh; Bhumij and Munda tribes, which are Scheduled Tribes; and those from Other Backward Classes.

The study found that the decisions regarding matters related to forests rested with the state in violation of FRA, and the bureaucrats used various tactics to prevent the tribals from accessing these forests. The needy and poor are unable to recognise their entitlements and are not active in local politics a situation which the local elites have taken advantage of. “The five village-level representatives of the committee are mainly agriculturalists, fishery owners or service job holders, with no associations with forests, say the authors. A point in case is the village of Emilibari, where the JFM committee responsible for managing forests is formed by the political elites in the region, who are aligned with political parties currently in power.

The lack of knowledge, literacy, money and power on the part of tribal communities have resulted in unequal representation, which adversely affects decisions on these matters, the study points out. “If the rights of the forest dependents are recognised through FRA, it would act as a major blow to the established vote banks in the village as well as to the incentives, which the different cadres of the political parties presently leverage in the villages, explain the authors. The party workers in local panchayats detested the implementation of FRA time and again, and the police have interrupted awareness campaigns, they add. There are of course many reasons behind this discontent of the local elites. As a norm, powerful politicians pay a ransom to regional party offices to set up eco-hotels to attract tourism revenues and party workers liaise with the forest department to uphold their electoral interests.

However, if FRA is implemented, the owners of the eco-hotels and fisheries, which are set up illegally on forest lands, would have to seek permission from the locals for running their ventures. Hence, attempts have been made by political party leaders to thwart awareness campaigns, conducted by several organisations, to equip the locals with the knowledge of their rights. The study also found that the Backward Classes Welfare Department (BCWD), which is

responsible for implementing FRA in the state, has left out identifying the two districts in the Sunderbans to enforce the act.

“According to the functionaries, the deputations for implementing FRA in North and South 24 Parganas have been overruled repeatedly by the district magistrates and the forest department, considering the global prominence of Sundarban as a World Heritage Site, say the authors. The tribals are also denied their rights in the name of conservation. Officials often cite that human activities are already stressing the Sundarbans, and implementing FRA would further damage these forests. On the contrary, the illegal activities of the local elites have considerably damaged the ecosystem, found the study. Encouraging tourism in a fragile mangrove ecosystem, for example, increases pollution in these forests, harming the health of these forests. Fisheries, spurred by the increased demand for tiger prawns and crabs, is another culprit ruining the livelihood of the locals, say the authors. Most agricultural lands, belonging to the tribals, are being converted into fisheries by intentionally breaching the adjacent embankments.

As a result, brackish water enters the nearby fields and destroys the crops. The owners of these fisheries, who are mostly political elites, thus benefit from the non-implementation of the FRA. Besides, the collection of prawn seeds reduces the young population of other fish, affecting the tribal fishermen. The findings of the study highlight the politicisation and gaps in the implementation of the Forest Rights Act, a topic widely debated in academic circles. They explain how bureaucratic interventions and vested interests of the elites hinder the legal rights of the forest-dependent tribals. The study also shows how the already established mutual agreements between the elites and the bureaucrats in the region falter. “More research needs to be invested in pointing out the kinds of obstructions rendered by local elites and political parties towards FRA, conclude the authors.

### **West Bengal: Fani impact: Sharp price hike keeps fish away from plates in West Bengal**

<https://www.indiatvnews.com/news/india-fani-impact-sharp-price-hike-keeps-fish-away-from-plates-in-west-bengal-518432>

"Cyclone Fani has left a major impact on a Bengali platter as prices of essential commodities; especially fishes have skyrocketed in the kitchen markets. Reportedly, around 50 trucks with fish come from Andhra Pradesh to the Howrah fish market daily and around 40 come from Odisha which were reduced due to Cyclone Fani as the fishermen were warned not to venture into the sea. As Kolkata stared at an supply crunch of the favourite varieties, the number of retailers who sell fish at the door steps have also decreased. Price of fish like Pabha which was earlier selling at Rs 400/kg is now costing Rs 600-700, Pomfret- earlier price at Rs 350, now at Rs 450, Katla fish from Rs 350 to Rs 550, Rohu at Rs 270 from Rs 180, Tiger Prawns at Rs 500 which was earlier Rs 350 per kilo.

Thankfully, the vegetable price has not been that steep comparatively to the dear fish. Cyclone Fani, one of the strongest storms to batter the Indian subcontinent in decades, uprooted trees and triggered rains as it entered West Bengal post midnight on Saturday, hours after making landfall and causing havoc in Odisha on Friday.

### **West Bengal: Can't bear damage of my fishing net, says fisherman as 'Fani' nears**

<https://in.news.yahoo.com/cant-bear-damage-fishing-net-says-fisherman-fani-234223279.html>

"West Bengal is on high alert with the 'extremely severe' cyclonic storm 'Fani' which is set to make landfall in the state today as predicted by the India Meteorological Department (IMD). Fishermen have been prohibited from venturing into the sea, and locals near the seashore are being moved to a 'multipurpose cyclone shelter' that was built in 2009 when Cyclone Aila hit the region. Most of the fishermen in Digha, which faces the Bay of Bengal, live either in thatched huts or houses made of asbestos sheets with a separate makeshift room for cattle and poultry. In a special bulletin issued on Thursday, the IMD forewarned about the destruction of thatched houses and extensive damage to kutchha (mud) houses and some damage to pucca (permanent) houses.

There is also a potential threat from flying objects, the IMD noted. Speaking to ANI, Moena Suri, the member of a fisherman family, said, ""The administration has alerted us regarding some severe storm. They have asked us not to stay here and move inside the village. Although there are not many cemented buildings, we will try to take shelter under one."" Fishermen are also striving to find a secure place for their fishing nets. ""We are scared (about Fani). Our safety is a priority, but once cyclone goes away we need to earn money. I can't bear the damage of my fishing net,"" said Sujit Muiya, a fisherman. District Administration in Purba Medinipur has directed Sub Divisional Officer, Contai, to take immediate measures so that tourists can leave from Digha, Mandarmani, Sankarpur, Tajpur and other tourist spots to avoid any untoward incidents due to the cyclone. Digha, which is situated in the coastal region of Medinipur district, has witnessed a sudden change in weather since 10 pm last night. The sea waves intensified with strong winds and rain. It is being said that Fani is one of the biggest cyclones to hit West Bengal in the last 43 years.

## **West Bengal: Under ‘yellow alert’, gears up against cyclone Fani**

<https://www.outlookindia.com/website/story/india-news-west-bengal-under-yellow-alert-gears-up-against-cyclone-fani/329709>

"With severe cyclonic storm Fani gearing up to make landfall in Odisha, parts of the adjacent state of West Bengal has been put on high alert. The Indian Meteorological Department (IMD) had issued a ""Yellow Alert "" warning for Odisha, West Bengal and in three districts of Andhra Pradesh. In a special bulletin issued today, the weather department has predicted total destruction of thatched houses and extensive damage to kutchha (mud) houses and some damage to pucca (permanent) houses. There is also a potential threat from flying objects. The entire state of West Bengal, especially the coastal regions of Medinipur district which faces the Bay of Bengal is under threat. Fishermen have been asked not to venture out into the sea for fishing from May 1 till May 5th.

The administration has also warned shopkeepers on the beach to not open their shops during the period. One such shopkeeper Gautam Singh said, ""Administration is coming here at regular intervals and announcing not to open our shop during the warning period as an extremely severe storm is about to hit the land anytime."" Tourists have also been alerted and asked to move to a safer zone. Soham Dey, a tourist said, ""we came here to stay for five days but due to the high alert our entire group is going back tomorrow early morning. Also, we have been stopped from getting into the sea."" The bulletin advises temporary halt on fishing activities and has said sailing of motor boats and small ships is also not advisable. Surojit Bag, Assistant Director of Fisheries (Marine) told ANI, ""We have issued severe cyclone alarm from May 1 to 5. Letters have been already issued to Block Development Officer (BDO) and coastal police asking for strict vigilance. Also, the disaster management team have been informed.""

Several trains have been cancelled as very heavy rainfall is expected. East and West Medinipur, Jhargram, South and North 24 Parganas, Howrah, Hooghly and Kolkata are under high alert.

## **West Bengal: Demand-supply gap leaves dear fish dearer**

<https://timesofindia.indiatimes.com/city/kolkata/demand-supply-gap-leaves-dear-fish-dearer/articleshow/68880715.cms>

"A sudden demand-supply mismatch has resulted in fish prices going through the roof, with even the daily staple of rohu and katla selling at double their usual cost and festive-season favourites like hilsa at four-digit prices. Fish delicacies such as Ilish Bhapa, Paturi and Sorshe Chingri, which are some of the inseparable elements of the Poila Baishakh platter, will no doubt have to quietly make way for the more prosaic Doi-Rui, Katla Kalia or Tel Koi to strike a subtle balance between taste and purse. The market in Kolkata has a daily demand of around 550

tonnes. But, over the last few weeks, the supply from the Andhra Pradesh-Telangana-Odisha route has dipped from 150 tonnes to 100 tonnes.

Adding to the problem is the dip in local supply, which has come down from a daily average of 400 tonnes to 150 tonnes. Prices usually head north around Poila Baishakh, but this year has been very different, say market insiders. “Forget Hilsa and King Prawn (Galda chingri), which may have become dearer because of the Poila Baishakh dem-and, said Syed Anwar Maqsoo, secretary, Howrah Wholesale Fish Market Association. “Even daily staples like rohu, katla and soal have now become unaffordable. Despite being the second-largest fish producer after Andhra Pradesh, Bengal (17.4 lakh tonnes, annually) has a deficit of 60,000 tonnes of fish in the Kolkata market, which is being met by Andhra Pradesh, along with Telangana and Odisha. In Bengal, rohu and katla that weigh less than 2kg are sourced from within the state, but larger ones come from Andhra Pradesh, said a fisheries department official.

While hilsa weighing a kilo and more was selling at Rs 1,200, king prawn at Rs 1,000-Rs 1,200 and topse at Rs 1,000- Rs 1,400 on the eve of Poila Baishakh, common varieties like rohu, katla, betki and pabda rose above the Rs 400 range, pinching pockets. “I am paying through my nose to buy fish, as no meal in our family is complete without it, said Behala resident Gourav Sandhukhan. The slump in supply has not been overnight. Supply both domestic and imports have been showing signs of slowing down since February. There are multiple factors behind the slump, notably vagaries of weather, which are playing havoc with fish.

“The sharp and drastic change in weather causes mortality, and young lifeless fish start floating up to the surface of water bodies, said Shankar Basak, who runs a medium-size aquaculture in Hooghly. “Since 53% of the total fish production comes from aquaculture, the mortality is measurable nowadays. Captured fish comprises 43% of the market. Secondly, Bengal's export of fish has increased, shrinking the production line to the domestic market, Basak added. “One of the biggest reasons of a shortage in supply and resultant fish price hike is the high transportation cost. Traders often end up losing heavily because of the transport costs. Thus, Andhra Pradesh traders often get afraid to export fish to Bengal, said Sandip Agarwal, a fish importer. There is hardly any hope of a better supply before monsoon, when domestic production also improves, said Satinath Patra, secretary of the Fishermen's Association of Bengal.

### **West Bengal: Historic Pichaboni Witness Success of the Struggle for Rehabilitation of Fish Vendors**

"At historic Pichaboni, where at the time of the 'Quit India' movement in 1942 the local people blocked the road to stop the British police and firmly announced 'pichaboni' - a Bengali word meaning 'we will not get back', the small fish vendors staged a small but significant struggle for their right to livelihood and won it. The Pichaboni fish market lies just beside the Kanthi-Digha highway. Around 100 to 150 small fish vendors earn their livelihood by selling fish in this

market. People from about 12-14 villages visit this market for their daily requirement of fish. This makes it an important sea fish market of the area.

Without a proper market both fish vendors and buyers had been suffering since 20-22 years from grossly unhygienic conditions and inclement weather, not to mention the high risk of doing business just beside a very busy highway. No toilet, no supply of water, no platform for fish selling, no shed, no drainage no cleaning system - none of the basic civic requirements for a fish market was available. Many memorandums were submitted to the Fisheries Department requesting for a modern fish market with necessary amenities. But there has been absolutely no positive development. On top of this, in August 2017, an eviction notice was suddenly served on the small fish vendors of Pichaboni market under the plea of expansion of the highway. Immediately the market committee and the fish vendor union moved the BDO, District Fisheries Officer, Sub-Divisional Officer, local MLA and MP against the eviction notice. Following this the fish vendors' union raised the issue of eviction of Pichabony fish market to different government authorities at different levels. Unfortunately no move to rehabilitate the poor fish vendors was noticed.

But the work for expansion of the highway continued. There have been continuous threats from the administration on the fish vendors to vacate the area. The local Panchayet also requested the administrative authorities for proper rehabilitation of the fish vendors and the fish market. But there was no assurance. Even the Panchayet asked the vendors to quit immediately. In February this year PWD announced that the area should be vacated within 24 hours. Though the fish vendors were trying to vacate a part of the area squeezing into the other, they were continuously asking for rehabilitation.

Finding no way out the fish vendors and the union prepared for a last fight. They planned to block the highway to make the government listen to their legitimate demand. At the same time they kept continuously in touch with the authorities. The fisheries department and other administrative authorities were again moved by the union. Pintu Das, leader of the fish vendor union of Pichabony, had a talk with the BDO and requested him to do something to avoid the imminent showdown. BDO Manoj Kanjilal assured emergency rehabilitation and inspected the market. In presence of the local Panchayet and Market Committee he assured construction of the fish market at a nearby vacant site that belongs to the Irrigation Department. He also assured of developing the land and arrange for legal sanction. The road side fish market at Pichabony is continuing. It is hoped that the construction work for new fish market will start immediately after the parliamentary elections. The union is having continuous vigil on the developments.

### **West Bengal: Mission Statement of Small Scale Fish Workers' Consolidation**

"We stand and advocate for a fisheries policy that protects the fish resources and the small and marginalised fishing communities' right to use the fish resources in harmony with nature. We dedicate ourselves to establish an alternative paradigm for sustainable development

with peoples' power and involve ourselves in transformative politics to bring in the same. India is gifted with incredible water resources. Great seas on three sides, large number of rivers, lakes, wetlands, reservoirs and ponds not only provide us with water bodies of huge number and bewildering diversity, but also produce large quantity of fish to make India stand second in the world. Total annual fish produced by both capture and culture fisheries in our country has been nearly 11 million tonnes, of which inland fisheries account for more than 66%. About 6 million workers including fishers, fish farmers, fish processing workers, fish sellers alongwith net and boat makers or repairers earn their livelihood from fisheries. Hence there is a fisheries dependent population of no less than 3 crores (30 million). Inland fisheries account for more than two third of the employment in fisheries. Fish provides high quality and cheap animal protein together with many beneficial minerals and vitamins. Around 80 crores (800 million) people eat fish in India. Since 1961 per capita consumption of fish has more than trebled. More than 13% of all animal protein consumed by our countrymen comes from fish and fish provides the next largest supply of animal protein after milk.

Thus the fisheries sector plays a very important role in the food security, nutritional status and employment in our country. Also, with more than 50% of the sector's workforce being women, suffice it to mention that it plays a salient role in maintaining gender balance in employment. Fisheries resources are under tremendous pressure. Indiscriminate encroachments, pollution and consumptive use of water are killing our coastal and inland waters and with that the fish resources they harbour. Over and destructive fishing by mechanised boats and trawlers have made the near shore waters of India's 8,000 kilometre long coastline barren of fish.

The small and traditional fishers and fish farmers are by far the largest non-consumptive primary stakeholders and natural custodians of our water bodies. Good fish needs good water. The small and traditional fishing communities, always and everywhere, strive to protect water bodies and fish resources. It is important to note, in this light, that traditional fishing is nature-friendly and suitable for the ecology of the water body. It may be remembered that traditional fishers let a new born fish mature and produce progeny so that there is natural stock replacement. The port led development project christened as Sagarmala is designed to push up the destruction of coastal natural resources. Linked up with River Linking projects and newly announced 110 National Waterways, the tide of destruction is going to sweep through the great rivers like the Ganges, Brahmaputra, Brahmani, Godavari, Krishna, Kaveri, Mandavi and Zuari killing whatever fish resources have been left in them.

Investment driven enhancement of productivity that cares little for environmental or ecological balance and edges out small fishers and fish farmers promoting their replacement by entrepreneurs from outside the sector, or sustainable production with protection and promotion of livelihood of small fishers and fish farmers – the fisheries sector is witnessing a policy conflict. The small and traditional fishing communities are losing ground and with it pressure is building up against sustainability in fisheries. Blue Revolution promoted by the Government of

India aims to encourage this very process. Most ironically thousands of these small fisher people, who have been struggling to protect their livelihood and the water bodies, are being driven out of the aquatic areas falling within protected areas like wild life sanctuaries and reserves. We stand and advocate for protection and development of small scale fisheries.

Small scale fisheries are fisheries where fishers and allied workers are directly engaged in work mainly for subsistence as against for commercial purpose exploiting others' labour.

We stand and advocate for small scale Fishers' and Fish Farmers' right over water bodies. This means Fishers and Fish Farmers' inalienable right to access and use water bodies including seas, rivers, lakes, wetlands, reservoirs, tanks and ponds for sustainable fishing or fish farming. Fundamental Policy Directions We stand and advocate for the following fundamental policy directions –

I. Sustainable development: Protection, maintenance and promotion of fisheries should be in consonance with the ecological principles and aim at building up on ecological services of water and water bodies.

II. Socio-economic upliftment of small scale fish workers: This should be one of the chief policy concerns. Ample caution should be exercised against pushing out of fishers and fish workers traditionally engaged in work in fishing by a new class of entrepreneurs from outside of the sector and against usurpation of government assistance by the latter.

III. Principle of Subsidiarity: Small scale and poor fish workers constitute the bulk of the work force engaged in fisheries. Their wellbeing is inseparably linked with the wellbeing of the fisheries sector. It is to be ensured that access to fish resources together with protection, support and assistance programmes, services and schemes should start from bottom top wards, whereas the regulations and penalties for non-compliance should start from top downwards. This means that the access to fish resources together with assistance programmes, services and schemes for fisheries should be provided for the smaller and poorer fishers by preference, and conversely the regulations and penalties for non-compliance should be harsher for the larger and richer players in the sector.

IV. Participatory Governance: Governance issues in fisheries involve water policy, policy for protection and upkeep of water bodies including rivers, canals, reservoirs, lakes, wetlands and ponds as well as policy for watershed management. The small scale fishers are by far the largest non-consumptive primary stakeholders of our surface water resources. More importantly, they are the natural custodians of our water bodies as good fish needs good water. As such, the small scale fishing communities and their representatives should be provided with mandatory participation right in determining water, water body and watershed management policies and their implementation.

V. Inter-generational Equity: Natural resource bases have to be preserved not only for the present generation but also for future ones. As such resource preservation with continued inter-generational involvement of fishing communities in fisheries should be made one of the chief concerns of the national policy on fisheries.

VI. Gender Justice: Women fish workers constitute more than half of the total workforce in fisheries. In fisheries sector women workers are more marginalised than their male counterparts and are in less favourable condition to address their problems. This calls for gender sensitive policies in resource allocation and access.

VII. Community Based Resilience to Climate Change Impact: Fisheries, in both marine and inland sectors are largely impacted by climate change. Efficient monitoring of climate change impacts and effective measures to address the impacts are urgently called for. This can be done only through participation of fishing communities and containing anthropogenic impacts on environment and ecology that enhance climate hazards.

VIII. Precautionary Approach: Fisheries being largely based on natural resource and ecological service, utmost caution has to be exercised in introduction of new social groups, technologies, species, feed etc. in its domain. This requires strict adherence to the precautionary principle which calls for abstention from doing anything whose impact is not fully or sufficiently known.

Administrative Measures

We stand and advocate for the following important administrative measures at the central and state governments – a. Separate Fisheries Ministry in Central and State Governments with the mandate to protect and promote sustainable fisheries and the livelihood of small scale fish workers including fishers, fish farmers, fish vendors and other ancillary fish workers; and b. National Commission for Fisheries to look after policy implementation, inter-state disputes, protection and promotion of the rights and entitlements of small scale fishing communities.

Specific Rights and Entitlements We stand and advocate for the following rights and entitlements of small scale fishing communities –

A. Recognition of the occupational dignity of small scale fishing communities: . Each and every fish worker, including fishers, fish farmers and fish vendors, irrespective of caste, creed, gender and religion, should be given government identity card as recognition of their occupational dignity, rights and entitlements.

B. Tenure Rights: . Small scale fishers should have the right to fish in all water bodies like the seas, rivers, lakes, wetlands, reservoirs including in water bodies under protected areas with preferential access to fish resources over large scale fishers. . Small scale fishers should have user right on the land areas they use for pre and post harvest activities. . Small scale fish farmers should have the right to security of tenure (protection against eviction) in water bodies taken on lease . Small scale fish farmers should enjoy the right of regulation of terms and conditions of

lease including fixation and increment of lease rent; . Small scale fish farmers should have farming rights in Government owned water bodies and reservoirs on preferential basis (over non-fish farmer investors) and easy terms (lease rent should be fixed on the basis of present yield and not on the basis of standard yield) with at least 5 years moratorium on increase of lease rent. . Small fish vendors should have the right of protection against eviction from any designated or undesignated market place without his or her consent and adequate rehabilitation; . Small fish vendors selling fish in a market or area must have the right to full accommodation in the event of reconstruction or new construction of fish market.

C. Governance Rights: . Small scale fishing communities should have the right to protect water and fish in all water bodies including the seas, rivers, canals, lakes, wetlands, reservoirs and ponds; . Small scale fishing communities should have the right to participate in and determine marine, river, wetland, reservoir, other water bodies and watershed (catchment and drainage) management including the use of the available water resources; . Small scale fishing communities should have the right to control and stop all activities that impact fisheries including destructive fishing and fish farming practices, pollution and encroachment. . Small fish vendors should have the right of participation in the management of fish depots and fish retailing markets; . Small fish vendors should also have the right of participation in the management of collection and transportation of fish from the fish depots and collection points.

D. Right to Economic Empowerment & Finance: . Small scale fishers, fish farmers and fish vendors should be encouraged and provided with incentives to form and run organisations for economic selfempowerment like Cooperatives, Fish Production Groups, SHGs etc. The terms and conditions for their formation and running should be made easy and transparent. . Small scale fishers, fish farmers and fish vendors should be protected from exploitation by usurers money lenders and micro-finance companies and should enjoy priority in government finance including bank linking and bank loans (Kisan Credit facilities are to be extended to small fishers and fish farmers).

E. Right to information, quality inputs and technology: . Due importance and respect should be given to document traditional knowledge and expertise in fisheries with their appropriate utilisation . Small scale fishers, fish farmers and fish vendors should be provided with technology, information, training and assistance regarding development of boats, nets, maintenance of cold chain, weather, tides, release of water from reservoirs, upgradation of pond preparation techniques, hatchery, quality seeds and fingerlings, farming techniques, quality feed and market; . Small scale fishers, fish farmers and fish vendors should also be provided with technology, information, training and assistance to enhance value addition through procedures like crab fattening and rearing of wild fish as well as manufacturing of different value added products like dry fish, fish pickles, papads etc. with market access; . Small scale fish farmers should be provided with technology, information, training and assistance to diversify into gainful enterprises like ornamental fish breeding and rearing; . There should be public notice regarding

government schemes for fish workers and absolute transparency with procedural regularity in selection of beneficiaries and disbursement of benefits.

F. Right to Infrastructure: Small scale fishers should enjoy the right to have infrastructure support that includes – - Boats and nets with boat and net making facilities; - Jetties / constructed landing stages for landing the catch; - Fish drying platforms and solar driers; - Light, drinking water, resting place and toilet at the landing centre; - Roads and means of transport to and from the landing centres. - Cold storage, fish drying and processing facilities, ice factories. Small scale fish farmers should be provided with support for – - Boats, nets and other implements; - Fish collection, auction and marketing facilities; - Access to hatcheries and quality seed, fish feed and disease management. Small fish vendors should be provided with – - Transport facilities (individual, collective or public) to and from fish collection points, fish depots and retail markets; - Fish depots and retail markets should have basic amenities like drinking water, toilet and resting place; - Markets should have proper approach roads, built up platforms, adequate storage and selling space with cleaning facilities.

G. Right to Social Security & Livelihood Support: Small scale fish workers should have comprehensive social security cover that includes – - Housing for all fish workers; - Food security cover; - Life and health insurance cover; - Insurance cover for boats and nets, fish farming and vehicles employed for fish vending; - Old age and in.rm pension; - Livelihood support during lean season and / or fishing ban period; - Educational assistance for children.

H. Women Fish Workers' Rights: . The government should have a gender policy in fisheries which should be based on gender segregated data on women fish workers' contribution to the work in fisheries. . Women fish workers should have women fish worker specific schemes and allotments – - To make good for the relative exclusion of women fish workers; - To access financial, business and technological support; . Women fish workers should have preferential right to access – - Social security schemes meant for fish workers that include housing, life and health cover, old and in.rm pension, widow pension, educational support for children; - Welfare and benefit schemes meant for fish workers; - Organise and run women fish workers' cooperatives, fish production groups, SHGs; . Special development measures in sectors dominated by women fish workers like fish vending, canoe based fishing, crab and mussel collection etc. . Provide for basic amenities like toilet, resting place and crèche for women fish workers at fish markets, fish depots and places where women fish workers gather for work.

### **West Bengal: Better co-ordination between agencies discussed at coastal s...**

<https://timesofindia.indiatimes.com/city/kolkata/better-co-ordination-between-agencies-discussed-at-coastal-security-meet-in-kolkata/articleshow/68755447.cms>

"Expeditious implementation of coastal security schemes such as coastal mapping, introduction of a common communication network, distribution of biometric identity cards and monitoring of fishing landing points were some of the issues discussed at the 7th Apex-level Committee Review Meeting on Coastal Security for West Bengal on Friday. Special emphasis was laid on effective utilisation of the fishing community as 'eyes and ears' for early warning of sea-ward threat. The meeting, convened at INS Netaji Subhas in Kolkata, was co-chaired by Vice Admiral Karambir Singh, FOC-in-C, Eastern Naval Command (who is slated to take over as the naval chief later this year) and Malay De, chief secretary, West Bengal. Among the others present were senior police officers from the state, Rajan Bargotra, IG, Coast Guard and Commodore Suprobho K De, naval officer-in-charge (West Bengal). "The meeting took stock of coastal security mechanisms in the state and reviewed critical areas and processes, including inter-agency coordination and information sharing.

In addition, various action points of National Committee for Strengthening Maritime and Coastal Security (NCSMCS) towards augmentation of Coastal Security were also reviewed and deliberated, a senior officer said. National Maritime Day was also observed on Friday to commemorate the maiden voyage into international waters of the SS Loyalty, India's first merchant vessel from Mumbai to London on April 5, 1919. It marked a red-letter day in the maritime and navigation history of India. Senior officers of the navy and state government paid tribute to the sailors who sacrificed their lives at sea, by placing wreaths at the Lascar War Memorial in the presence of all ranks of INS Netaji Subhas.

### **West Bengal: More dead fish found in Santragachhi Jheel**

[https://m.timesofindia.com/city/kolkata/more-dead-fish-found-in-santragachhi-jheel/amp\\_articleshow/68695475.cms](https://m.timesofindia.com/city/kolkata/more-dead-fish-found-in-santragachhi-jheel/amp_articleshow/68695475.cms)

"The Howrah Municipal Corporation (HMC) launched a clean-up of the water hyacinth that has covered large swathes of the 33-acre Santragachhi Jheel even as fisheries department collected samples of dead fish found floating again on Tuesday to conduct autopsy and determine the reason behind such large scale mortality at the lake. Locals gathered around the jheel on Tuesday amid heavy police deployment said the number of dead fish, including rohu, katla, telapiya and silver carp, was higher than that of Monday. Police, though, refused to specify the number of buckets of dead fish lifted from the jheel. On Monday, 80 buckets of dead fish were lifted from the lake. Jiban Saha, a local residing opposite the jheel, said: "We can't stay

here. The smell of dead fish has filled the air. Nothing is being cleaned. A day after coming under flak for failing to clear hyacinth, HMC conservancy department deployed staff to remove green cover smothering the lake.

While some hyacinth was retained for the benefit of birds, 10 truckloads of hyacinth were taken to Howrah Belgachhia dumping yard. Officials and researchers of state fisheries department visited Santragachhi and collected samples of water, earth lifted from the bed of the jheel and dead fish. HMC commissioner-cum-administrator Bijin Krishna said, "We will await reports of tests the fisheries department will conduct on samples collected, particularly the autopsy reports of the dead fish. This will indicate the cause of fish mortality.

HMC added area development advisor Masud Alam Khan said, "The water has also turned blackish. While lifting earth from the jheel's bed, our workers also found plastic and domestic waste. Environmentalist Subhash Datta said, "Both HMC and the railways are responsible for such large-scale fish mortality and water contamination. In 2017, the National Green Tribunal (NGT) had directed both the organisations to jointly set up a treatment plant to ensure that the lake remains clean. This directive has not been implemented by the two organisations that only hold discussions. The aquatic life cycle in the jheel has been severely damaged because of reluctance of both railways and HMC. I will move NGT on fish mortality at Santragachhi Jheel.

### **West Bengal: Multimedia: Sorry state of Ganga downstream of Farakka**

<https://indiaclimatedialogue.net/2019/03/25/multimedia-sorry-state-of-ganga-beyond-farakka/>

"The Ganga, which has nourished Indian civilisation for millennia, is fighting its biggest battle for survival. Increasing pollution coupled with the failure of cleanliness drives has turned the river and its banks into a dump. The World Wide Fund for Nature (WWF) has listed the 2,520 km long river as among the world's most endangered. One of the worst stretches is in Murshidabad district of West Bengal, where the Ganga's biodiversity is being affected by constant human intervention. Many blame the Farakka barrage for the pathetic condition of the river. Sourced from a partly snow-bound catchment area of 1,008,500 sq. km, the Ganga has an average annual discharge of 11,811 cumecs at Farakka.

Since 1975, the Farakka barrage diverts an average discharge of 1,046 cumecs from the Ganga into the Hooghly River, towards Kolkata, through a 38 km feeder canal. The discharge of hot water from Farakka Super Thermal Power Station of NTPC at Dhulian in Murshidabad has been causing fluctuations in the water level and temperature, posing a danger to the aquatic life surviving on it. Too hot to handle Locals claim that the water released from the thermal plant is too hot to be touched during the early morning hours. Arif Sheikh, who lives close to the plant, says that it not possible to touch the water in summers, while it is pleasantly warm in winters.

“The water released from NTPC is very hot but still we come to take a bath during the winters. But it is difficult to touch the water during summers.

We might be getting affected by diseases by taking a dip into the river as we have constant itching but absence of any medical check-up fails to identify the ailments, he said. “The authorities should look into this and make alternative arrangements to stop the discharge of hot water into the river. Fishers lament that the hot water discharge from NTPC is affecting aquatic life in the Ganga downstream. “I have been catching fish for the past 10-12 years. But the catch in the river has been dwindling each year. Earlier, we used to get around 20 kg fish everyday, which has now come down to 1-2 kg. It is becoming difficult to run our families as we solely depend on fish for our livelihood. The river is turning dry, may be because of increasing pollution and chemical laced hot water released by NTPC.

Our houses have already been swallowed by erosion. We request the government to look into the matter or else the fishing community would completely migrate to other areas for livelihood, said Subroto Biswas, a fisherman. The small channels close to the plant, whose water gets mixed with the Ganga, are being used by the power plant as dumping ground for fly ash, contaminating the river. Farmers complain that fly ash has been destroying crops year after year, “The crops are getting affected because of the fly ash in the fields but the administration is taking no action despite being informed numerous times. We have been facing severe losses and have also filed a case against the NTPC seeking compensation. But nothing has been done, rued Akbar Ali, 66, a farmer at Japukuria village at Dhuliyán, less than 20 km downstream of Farakka.

NTPC was forced to shut down five units of its power plant in 2016 due to the abysmally low level of water in the Farakka Feeder Canal. The Farakka barrage has also worsened land erosion downstream by driving more water into the Hooghly. Various reports have suggested that the barrage was constructed without regard to the natural behaviour of the river in the Gangetic delta. According to reports, the Ganga annually carries more than 700 million tonnes of sediment at Farakka, of which about 300 million tonnes get trapped in a barrage pond. The water erodes the banks; the lack of silt means banks cannot be built naturally again. The process is leading to the sinking of the entire delta. Mahbub Alam, an environment activist, says that sediment deposits have been creating small islands right in the middle of the river while blocking its natural flow,

“People of Malda and Murshidabad are living in distress due to the land erosion. The sediments are responsible for it as they have blocked the natural course of the river and have led to the increase in depth of channels on both sides of the river. Subsequently, the water is entering the villages and hundreds of people are losing their land and houses. The situation is very alarming and I request everybody to save the river. Erosion havoc Erosion has wreaked havoc in Malda and Murshidabad and has devoured hundreds of houses forcing people to migrate to other areas. Anjuma Bibi, who lives in Muskinagar village of Murshidabad district, shudders to think of the

moments when she along with her family had a miraculous escape after erosion devoured their house in the dead of a night, “The wooden bed on which I was sleeping suddenly started to slip away. I realised that our house was going into the river. I managed to pull my husband and my granddaughter out of the room and within seconds my house got cracked and plunged into the river.

We lost all our belongings to the erosion. It has been three years since but we have received no help from the administration. The villagers helped us and gave us shelter in their house, she said. Over 400 children who study at Muskinagar Primary School come with prayers on their lips and pounding hearts every day. The boundary wall of the school located close to the river has been swallowed by the river thrice in the past one year. School authorities claim they have informed the administration several times about the looming danger to the lives of the children but nothing has been done. “We live in perpetual fear during the monsoon. I have already written to the state irrigation minister and other officials but have received no reply for the past two years. The administration has only thrown some stone bags as a stopgap measure but it is not enough. Hundreds of children in my school might lose their lives if nothing is done to resist the erosion, said Obaidur Rahman, the school headmaster while pointing to the heap of bricks in the river that was once a school but was lost to erosion.

### **West Bengal: Workshop on Preferential Access for Small Scale Fish Workers to Marine Fish Resources & Coastal Regulation Zone Notification-2019 Organised by Sagar Matsyajibi Forum**

"Sagar Matsyajibi Forum, the branch of Dakshinbanga Matsyajibi Fotum (DMF) in Sagar Island (Block) had been keen to organise workshops on Preferential Access for Small Scale Fish Workers to Marine Fish Resources & Coastal Regulation Zone Notification-2019 to develop a common and in depth understanding of the issues related with these. 25 representatives from eight fish landing centres of the island alongwith two representatives from the women fish workers' unit attended the workshop. President of Sagar Matsyajibi Forum, Himangshu Mondal presided over and Abdar Mallick, Secretary of Sagar Matsyajibi Forum coordinated the workshop. Pradip Chatterjee, President of DMF and Convener of the National Platform for Small Scale Fish Workers (Inland) was the main speaker while Milan Das, General Secretary of DMF elucidated some points raised in the workshop.

Sri Himangshu Mondal, President, Sagar Matsyajibi Forum welcomed everybody and requested active participation. Pradip Chatterjee, the main speaker, said that he is sorry that he could not manage time to translate the presentations in Bengali. He promised to prepare and distribute a Bengali version within one month.

The presentation on preferential access for small scale fishers to marine fish resources stressed on the following points - First, it defined the small scale fish workers as those who directly take

part in the work in fishing, who work mainly for subsistence and not mainly for commercial purpose and who do not exploit other peoples' labour.

Second, it advocated for preferential access for small scale fishers because small scale fishing is more sustainable, more traditional and more equitable. Third, it described how the mechanised sector has increased its share of the total marine fish catch from less than 15% in 1961 to more than 80% in 2018 and, conversely, how the small scale fishing sector's share has fallen from more than 85% in 1961 to less than 20% in 2018. Fourth, it showed that most of the catch taken by the mechanised fishing sector was from the near shore (0 to 100 mtrs. depth) area where the small scale fishers fish. Thus, the mechanised sector has been directly responsible for over fishing in the near shore areas and for shortage of fish for the small scale sector.

Fifth, it showed that the number and capacity of the mechanised fishing boats has been more than double the optimum and those of the small fishing boats have been much less than the optimum as recommended by fisheries expert committee. Then it recommended following steps to ensure preferential access of small scale fishing communities to marine fish resources applying the principle of subsidiarity -

- Fishing effort should match with maximum sustainable yield;
- Moratorium on registration of new mechanised boats;
- Stoppage of subsidy and assistance on fuel, boats and nets for mechanised sector;
- To ensure that fishing effort matches sustainable yield
- Reduction of number and effort of the existing mechanised fleet;
- Extension of the exclusive fishing zone of the small scale fishers upto 12 nautical miles in general and even more as required in specific areas;
- 6 months fishing ban on mechanised sector, 3 months ban on motorised sector with livelihood support for small fishers and no ban on manual fishing;
- Right of first catch should be with the small scale sector, mechanised sector to have the residue;
- Ban on destructive fishing methods like bottom trawling, purse seining, fishing with LED lights and fish finders.
- Protection of livelihood rights of small scale fishing communities in the marine or coastal protected areas.

Pradip Chatterjee updated the participants regarding the present status of the struggle for preferential access -

- The National Policy for Marine Fisheries (NPMF) has accepted principle of subsidiarity as its basic policy direction;
- NPMF has admitted the need for extension of exclusive fishing area for small scale fishers;
- NPMF has also accepted protection of livelihood rights of small scale fishing communities in the marine or coastal protected areas.
- The Government of India has banned Bull Trawling and LED Light Fishing in the sea beyond territorial waters.
- He suggested continuous struggle for preferential access to marine fish resources as this has been the lifeline of the small scale fisheries. Next subject was Coastal Regulation Zone Notification 2019 (CRZ-2019). The presentation made by Pradip Chatterjee comprised of - - History of CRZ Notification including the effort of Prime Minister Indira Gandhi and the struggle of fishing communities with the historic Kanyakumari March (1989) and Macchimar Rastriyo Adhikar Yatra (2008) as well as the background of three CRZ Notifications of 1991, 2011 and 2019; - Fundamental weaknesses in the successive CRZ Notifications; - Clause by clause analysis of CRZ-2019 Notification to show how it has further opened up the coast to the loot of the corporate and business houses. Milan Das suggested that DMF should work to build up nation wide rejection of CRZ-2019.

The participants resolved to organise meetings at fish landing centres to aware the fishing communities on these very important issues and build up strong resistance. They demanded awareness materials in Bengali. DMF leaders assured them that the materials will be made available in the earliest.

### **West Bengal: Marine Women Fish Workers' Cooperative Society of Sagar Island: Plans for Economic Empowerment of Women Fish Workers**

"Sagar Samudrik Mahila Matsyajibi Samabay Samity Ltd. drew up plans for economic empowerment of women fish workers of the Island on 22nd March 2019. In a meeting attended by Pradip Chatterjee, President of Dakshinbanga Matsyajibi Forum (DMF), Milan Das, General Secretary of DMF and Abdar Mallick, Secretary of Sagar Matsyajibi Forum detailed discussions were held on the problems faced by the women fish workers and the ways and means to address those. The meeting was attended by around 30 women fish workers. It was presided and coordinated by respectively Mumtaj Begum, President of the Society and Manasi Bera, Secretary of the Society. At the beginning Mumtaj Begum welcomed the participants. Then Manasi Bera gave a brief history of the cooperative and requested the participants to come out with a concrete plan of activities. It may be mentioned that Sagar Samudrik Mahila Matsyajibi Samabay Samity Ltd. has been the first and only women fish workers' cooperative society on the island.

Registered in November 2018, the Cooperative Society was organised through relentless efforts of DMF leadership.

DMF President Pradip Chatterjee asked all participants to come together to discuss and decide on issues that are important for the women fish workers' economic empowerment and refrain from formal speech giving. The first issue raised by the women fish workers was the low wages they receive for sorting and drying job at the fish landing centres. It was stated that the women fish sorters and dryers had to work from 6pm in the morning to 5pm in the afternoon. The wages for 11 hours of hard work have been Rs.200/- plus food. But in one fish landing centre only Rs.180/- was paid to the women fish workers and that too without food. The meeting resolved to demand uniform wages calculated on the basis of minimum wage for 8 hours plus overtime. As a first step it was decided to demand an increase from Rs. 180/- to Rs. 200/ for women workers who are paid Rs. 180/-. The Society would write a letter to the Sagar Matsyajibi Forum in this regard.

In addition, the women fish workers also resolved to develop a fish sorting and drying centre of its own. The women's society will buy wet fish from the fishers, process it and then sell the dry fish to traders. For this they will approach the existing fish landing centres for land and the government for assistance in infrastructure. Further, they resolved to establish a fish meal production unit that would run all around the year and a fish pickle production unit. They resolved to approach the Fisheries Department for necessary training and assistance. Small loans for member women fish workers and additional income generation through goatery, duckery, poultry etc. were also discussed. It was decided that Society members will sit together shortly to discuss and decide on concrete steps. The marginalised women fish workers concluded their meeting with renewed hope and resolve to stride forward.

### **West Bengal: Migration in Bengal delta driven by livelihood issues, gender disparity**

<https://www.thehindu.com/sci-tech/energy-and-environment/migration-in-bengal-delta-driven-by-livelihood-issues-gender-disparity/article26561763.ece>

"Economic reasons are the precipitating factor for migration in the Indian Bengal Delta that comprises the Sunderbans reveals an international study titled Deltas, Vulnerability and Climate Change: Migration and Adaptation (DECMA). The study also points out that there is huge gender disparity when it comes to those migrating from the region. The study which covers 51 blocks of districts of South and North 24 Parganas reveals that 64% people migrate because of economic reasons, unsustainable agriculture, lack of economic opportunities and debt; 28 % of the migration from the region is for social reasons and about 7% for environmental reasons like cyclones and flooding.

The study, held between 2014 and 2018 focusing on three deltas Ganga Brahmaputra Meghna Delta (India and Bangladesh) Volta (Ghana) and Mahanadi (India) looks into the aspect of climate change, adaptation and migration in these deltas. Professor Tuhin Ghosh, the India

country head for DECMA says people surveyed during the study could not relate to reduced agricultural productivity, increased salinity and change in rainfall pattern as environmental reason for their migration. Only in cases of extreme events like flooding and cyclones resulting in loss of livelihood, did the locals say their migration was due to environmental reasons, he points out.

When it comes to migration in the Indian Bengal Delta, the study finds a huge gender disparity, with men outnumbering women by almost five times. It shows that of the people migrating 83% are men and only 17 % are women. While most of the men migrate due to economic reasons, women do so, driven by mostly social factors. The DECMA report also finds that most migrants both in case of men and women are young, in the age group of 20-30 years. Professor Ghosh, who is associated with the School of Oceanographic Studies, Jadavpur University says that in the Sunderbans there are villages where most of the men have migrated for work and the responsibility of the family and agriculture falls on the women.

“Even though the women are doing all the work back home, they have little freedom to take decisions on their own and have to consult their men over telephone for any major decision, he says. In terms of the destination of migrations, the study finds that 51% of migration from the Indian Bengal Delta is to other areas of the State particularly to the city of Kolkata, 10% to Maharashtra, 9% to Tamil Nadu, 7% Kerala and 6% to Gujarat. It shows that 57% of migration is seasonal, where people move once or twice a year; 19% is circular where those migrating move thrice a year irrespective of reasons and 24% permanent where people intend to stay for at least six months in the place they are migrating to. According to experts behind the study, one of the reasons for migration is failed adaptation in the areas which are under stress due to climate change. Vulnerable areas In the study, experts also map the climate change hot spots and highest risk areas of Sunderbans based on an analysis of climate change hazards. The areas of Gosaba, Basanti, Kultali, Sagar, Kakdwip, Namkhana, Canning and Mathurapur (all in South 24 Parganas) have high levels of agriculture dependency and so are sensitive to climate hazards such as flood and salinity.

### **West Bengal: sinking Island in the Sundarbans Delta**

<https://www.bbc.com/news/av/world-asia-india-47560991/sinking-island-in-the-sundarbans-delta>

"Thousands of people still live on the Indian island of Ghoramora, which has shrunk in size to just 4.5 sq km. It's one of scores of low-lying islands in the Sundarbans Delta that are rapidly disappearing. Scientists say global warming has caused melting snow and ice to swell

the rivers, and the sea level has risen. Tens of thousands have fled Ghoramora in recent decades. Full video is available at: <https://www.bbc.com/news/av/world-asia-india-47560991/sinking-island-in-the-sundarbans-delta>

### **West Bengal: State Panchayats dept draws up measures to increase production and sale of fish**

<http://www.millenniumpost.in/kolkata/state-panchayats-dept-draws-up-measures-to-increase-production-and-sale-of-fish-343880>

"In a significant stride to ensure a better livelihood for the fish farmers in the state, the Panchayats and Rural Development department is taking a slew of measures to develop infrastructure for cultivation, storage and quality control of fish, the most favourite delicacy of the Bengalis. Come Saturday and the department is kickstarting a new project 'Meen Mitra' at Tamluk in East Midnapore to provide the fish farmers knowledge and technical knowhow on augmentation of production and handling problems associated with the cultivation of the species.

"There will be a 15 days' hands-on training for 34 members of the Self-Help Groups who are associated with fish cultivation in the area. They will be reaching out to other fish farmers in the state and will impart knowledge and technical knowhow on the nature of cultivation depending upon the quality of water and how to address problems associated with cultivation. They will be acting as a catalyst for the fish producers at the block level," a senior official of the department said. 164 people from nine places in North and South 24-Parganas, Hooghly, Howrah, South Dinajpur, Cooch Behar, Siliguri and Darjeeling and of course East Midnapore will come under the project in the first phase. The department will also provide equipment needed for soil testing, water testing and other requisites.

According to the official, there are broadly four types of water fresh, brackish, marine and cold water. The training will be imparted on the nature of the waterbodies available in a particular area for scientific breeding of fishes. The department for the first time in the state is also boosting the infrastructure for better storage and quality control. "We will come up with solar dehydrated units in certain earmarked areas so that fishermen do not dry fish under the sun beside the sea or the river. The funds for five such units priced at around Rs 2 lakh per unit have already been placed," the official said. The department is also coming up with mini ice plants for storage of fish and funds for five such units have already been placed. "We are also procuring 20 cool boxes which will retain the freshness of fish for a longer period. The equipment are being procured from the National Institute of Rural Development and Panchayati Raj (NIRDPR) in Hyderabad through the West Bengal Comprehensive Area Development Corporation that comes under the aegis of our department," the official maintained.

### **West Bengal: Forums write to Agri and Farmers Welfare ministry to regulate number of trawlers at sea**

<http://www.millenniumpost.in/kolkata/forums-write-to-agri-and-farmers-welfare-ministry-to-regulate-number-of-trawlers-at-sea-344147>

"Various fishermen' organisations in the state have voiced their protest against indiscriminate approval of marine fishing boat registration leading to destruction of the ecological balance in the sea and the livelihoods of the small-scale fishermen in the state. Dakshinbanga Matsyajibi Forum and the National Fishworkers' Forum have written to the ministry of Agriculture and Farmers Welfare to safeguard the interests of the small-scale and traditional fishermen in the state. A letter has been sent with an aim to regulate marine fishing trawlers at sea. The organisations also urged the Centre to reduce the number of trawlers in the sea both for the sustainability of fisheries and also to check destruction caused to the seabed by trawling gear.

It may be mentioned here that since the introduction of trawlers in the 1960s, small-scale fishermen having motorised and non-motorised boats had been opposed to the operation of the trawlers because these boats directly impacted the ecological balance and the livelihood of small scale fishermen. Debasis Shyamal, vice-president, Dakshinbanga Matsyajibi said: ""In line with the National Policy on Marine Fisheries, 2017 we would like to highlight the importance of sustainable development, socio-economic upliftment of fishers, partnership, inter-generational equity, gender justice and precautionary approach. We urge the Centre to take into consideration these factors and look into the long-standing principles demanded by the traditional and small-scale fish workers communities.

The fishermen community also stressed the importance of livelihood of the traditional fishing communities and also the rights to access fish resources in all the maritime zones of India. They demanded equity and sustainability by giving preferential access to small scale fishermen. The capacity of the fishing fleet and the fishing effort has to be matched with that of the fish resources available in the maritime zones of India to ensure that the resource exploitation is sustainable and fishing is a viable activity, Shyamal added.

### **West Bengal: Protecting the Sundarban wetlands**

<https://www.thehindu.com/sci-tech/energy-and-environment/protecting-the-sundarban-wetlands/article26482707.ece>

"On January 30, the Indian Sundarban was accorded the status of 'Wetland of International Importance' under the Ramsar Convention. The Sundarbans comprises hundreds of islands and a network of rivers, tributaries and creeks in the delta of the Ganga and the Brahmaputra at the mouth of the Bay of Bengal in India and Bangladesh. Located on the southwestern part of the delta, the Indian Sundarban constitutes over 60% of the country's total

mangrove forest area. It is the 27th Ramsar Site in India, and with an area of 4,23,000 hectares is now the largest protected wetland in the country. Why is this important? The Convention on Wetlands of International Importance, better known as the Ramsar Convention, is an international agreement promoting the conservation and wise use of wetlands. It is the only global treaty to focus on a single ecosystem. The convention was adopted in the Iranian city of Ramsar in 1971 and came into force in 1975.

Traditionally viewed as a wasteland or breeding ground of disease, wetlands actually provide freshwater and food, and serve as nature's shock absorber. Wetlands, critical for biodiversity, are disappearing rapidly, with recent estimates showing that 64% or more of the world's wetlands have vanished since 1900. Major changes in land use for agriculture and grazing, water diversion for dams and canals and infrastructure development are considered to be some of the main causes of loss and degradation of wetlands. How did it qualify? The Indian Sundarban met four of the nine criteria required for the status of 'Wetland of International Importance' presence of rare species and threatened ecological communities, biological diversity, significant and representative fish and fish spawning ground and migration path. The Indian Sundarban, also a UNESCO world heritage site, is home to the Royal Bengal Tiger.

The Ramsar website points out that the Indian Sundarban is also home to a large number of "rare and globally threatened species, such as the critically endangered northern river terrapin (*Batagur baska*), the endangered Irrawaddy dolphin (*Orcaella brevirostris*), and the vulnerable fishing cat (*Prionailurus viverrinus*). Two of the world's four horseshoe crab species, and eight of India's 12 species of kingfisher are also found here. Recent studies claim that the Indian Sundarban is home to 2,626 faunal species and 90% of the country's mangrove varieties. Will the status help? Environmentalists and forest officials say the Ramsar status will help to highlight conservation issues of the Sundarbans at the international level. The part of the Sundarban delta, which lies in Bangladesh, was accorded the status of a Ramsar site in 1992, and with Indian Sundarban getting it too, international cooperation between the two countries for the protection of this unique ecosystem will increase.

This could lead to a better conservation strategy for flagship species such as the tiger and the northern river terrapin. What are the threats? While the Indian Sundarban is a biodiverse preserve, over four million people live on its northern and northwestern periphery, putting pressure on the ecosystem. Concerns have been raised about natural ecosystems being changed for cultivation of shrimp, crab, molluscs and fish. The Ramsar Information Sheet lists fishing and harvesting of aquatic resources as a "high impact actual threat to the wetland. The other threats are from dredging, oil and gas drilling, logging and wood harvesting, hunting and collecting terrestrial animals. Salinity has been categorised as a medium and tourism as a low impact actual threat in the region.

Experts believe that while the Ramsar status may bring in international recognition to the Indian Sundarban, the wetland, which along with anthropogenic pressures, is also vulnerable to climate change and requires better management and conservation practices.

### **Andhra Pradesh: Coastline to be geomapped on the lines of West Bengal**

<https://timesofindia.indiatimes.com/city/visakhapatnam/ap-coastline-to-be-geomapped-on-the-lines-of-wb/articleshow/68293439.cms>

"The National Remote Sensing Centre (NRSC) will be geo-mapping the state's coastline and the villages located along it, soon. The project will follow West Bengal's example in which the fisheries department had taken the initiative. The government has already accepted the proposal of the coastal security police (CSP) or marine police to conduct the geo-mapping and has sanctioned around Rs 1 crore for the project. An initiative meeting with this regard was conducted three months ago and a second meet will be held soon in which Station House Officers (SHOs) of all the 21 coastal security police stations are expected to participate. The coastal security police DSP M Adinarayana told TOI that the fisheries department of West Bengal had taken the help of National Remote Sensing Centre to geo-map its entire coastline.

AP has a coastline of 974 km and 21 coastal security police stations in nine coastal districts. All the nine districts have more than 541 fishing villages and a few coastal towns. There are about 3.02 lakh active fishermen with more than 70,000 vessels, including 40,000 traditional fishing boats. "The NRSC will develop an application where information related to the coastal areas, its surroundings and available infrastructure will be uploaded. Such information will come handy for evacuation, rescue and relief operations during natural calamities and disasters,' marine police DIG A Sattar Khan told TOI.

According to sources, a team of marine police of AP, led by Khan, had visited Kolkata to study about the geo-mapping of coastal areas by the NRSC Kolkata branch. They also visited the coastal police stations and the NRSC branch. Geo-mapping is a method of surveying land and the sub surface using GPS that presents a detailed view of a site and the surrounding area. Khan said that the geo-mapping of the state coastline will allow data to be gathered about hospitals, schools, cyclone shelters, bus stands, railway stations, police stations, other facilities and infrastructure available in a particular area.

### **West Bengal: Six dead as rain, thunderstorm disrupt life in Bengal**

<https://weather.com/en-IN/india/news/news/2019-02-26-six-dead-as-rain-thunderstorm-disrupt-life-in-bengal>

"Six persons were killed and normal life disrupted as rains accompanied by thunderstorm lashed Kolkata and other southern West Bengal districts on Monday, officials said. A 20-year-old youth died while trying to get down from a jetty at Jhorkhali in South 24 Parganas district,

police said. Another casualty was a 16-year-old girl of Baruipur who was struck by lightning. She was declared dead on arrival at a hospital. In Purulia district, the sudden rainfall spoilt a family's celebration. Pradeep Tantubai, 45, died and two others were injured as a canopy collapsed over them. Three deaths were reported from West Midnapore district - two people struck by lightning, and another electrocuted. The Regional Meteorological Centre, Kolkata said a squall followed by gusty northwesterly wind occurred for a minute at 3.55 a.m. with speed of 44 kmph, followed by highest gust of 56 kmph at 4.25 a.m.

Various parts of Howrah, North and South 24 Parganas, East Midnapore and West Midnapore districts reported uprooted trees and electric poles, and damage to shops and other properties. In Kolkata, arterial roads like Eastern Metropolitan Bypass and Dufferin Road, as also the Maniktala area faced major traffic disruption due to uprooted trees. The rainfall recorded in the morning was 15.6 mm. Officials have predicted ""thunderstorm with gusty winds and lightning at one or two places in West Bengal"" for the next two days. The state government on Monday asked fishermen not to venture into the deep sea off the Bengal and Odisha coasts and towards the Bangladesh coast due to likelihood of inclement weather on Tuesday and Wednesday. Fishermen in the deep seas have been asked to return to the coast by night. The maximum recorded temperature in Kolkata was 32.3 degrees Celsius and the minimum 19.4 degrees.

### **West Bengal: Downsides of development**

<http://www.millenniumpost.in/opinion/downsides-of-development-340550>

"West Bengal is set to develop a deep-sea port in Tajpur in East Midnapur district independent of the Centre. But some concerns persist. The local fishing community has not been apprised about the port project or told how their lives will be affected by it. Down To Earth visited a few of the areas the port would cover and found that not one official has visited these places up till now. ""I have heard of the project, but so far have not officially informed by the government about it. The fishermen there have not received any official intimation yet. The details of the port are still unknown and also how it will affect the 6,000 registered fishermen and labourers,"" says Apurba Kar, an assistant at Tajpur Jaladha Matsya Khoti, one of the two matsya khotis in Tajpur where fishermen come and dry the fishes they catch before dispatching them to the market. Since the fishing community has received no guidance on what they should do to sustain themselves, they have come to believe that for the sake of development they should abandon their traditional source of livelihood.

"I have heard that a port will be built here but that will be in the deep sea and won't affect our work. In fact, our sons will get jobs,"" says Anil Kumar Borai, secretary of Jaladha Ma Bansholi Matsya Khoti, the other matsya khoti of the region. ""We are concerned because we may have to leave our homes. Will we get the right price for that?"" he adds. There are others who think the port will keep them afloat. ""If the government builds a port, it will secure us from washing

away in the sea. We have seen sand dams being washed away and mechanised trawlers also affect our business. A port will affect affected fishing though, but we have to think of a better future,"" says Sukumar Bera, a fisherman in Tajpur. Moreover, the women of the region find the port project threatening them existentially.

"What will we do if the fishing stops? We come from different places and are very poor. We earn whatever we can to support our husbands. The men can go for other jobs on to the port, but we can't. Our families will suffer a lot,"" says a group of fishing women in the region. Even if the fishing community manages to keep their work going, the port could give way to a technical issue. "The port can either increase the speed of waves or decrease it. We cast nets on wooden rods. If the waves increase, it will uproot the rods and the nets will be ripped apart and if it decreases, the fish will not reach the net. Both ways we'll suffer,"" says Pabitra Pradhan, member of Jaladha Ma Bansholi Matsya Khoti. Haldia: An industrialised fishing town West Bengal already has one example of what rapid industrialisation does to ports Haldia. The fishing community in the port city says their income has reduced by one-third since industrialisation started in the region two decades ago.

Few people in the community have thought about that side of the story. Bhabani Barui, a fisherwoman in a Tajpur village, says, "I've heard that we may have to leave our homes and it can be true because Haldia villagers also had to. Near-port villages never remain intact. But, fishing is all we know. What else will we do if we are asked to leave and earn through different means? It will be very painful for us." And now that eight jetties are being planned under the ambitious Sagarmala programme, the fishing community is being threatened even more. Angshuman Midya, president of Rupnarayan Chawk Matsya Obotaran Kendra, says, "A waterway between Haldia and Varanasi may be made under this project. This will massively impact small-scale fishing business. And, setting up jetties is definitely a threat to us." Already the youngsters there are migrating to other states and countries. The matsya kothi members say while earlier 80 per cent of fishing labourers were from the village, the number has come down to just 10 per cent now. Saibul Ali, a fisherman busy repairing a boat on the banks of Rupnarayan river, says, "We have to pay at least Rs 3 lakh to get a job. Plus, there hasn't been any development in the area at all." Although Tajpur's port story is just about to begin, it's not much different from what's still happening to Haldia's fishing community. They, too, haven't been visited by a single official yet to inform them about the jetties. Manju Dolui, a fisherwoman in Haldia, says, "We don't know about jetties but if it affects our livelihood we don't want it. But no higher official has ever come to visit us and heard our problems. If this continues, we will be forced to leave our profession" The fishing communities in both coastal regions are suffering from the effects of industrialisation without proper planning, pollution control methods, or the government offering them any way out to a sustainable livelihood.

**West Bengal: IIT start-up invents technology to enhance fish size and taste**

<http://www.millenniumpost.in/kolkata/iit-start-up-invents-technology-to-enhance-fish-size-and-taste-340469>

"A bioactive product invented by a start-up incubated at IIT Kharagpur's Science and Technology Entrepreneurs' Park is silently changing the face of aquaculture in parts of eastern India. Mr Fish, produced with the latest technology, is one-of-a-kind of product that not only increases the size of the fish in the least possible time but, and more importantly, enhances its taste and nutritional quality. Mr Fish, produced by the IIT Kharagpur start up Zelence, the product has proved to be a boon for the fish farmers. Pijush Kanti Bhanja, a fish farmer from Moyna in Midnapore, who used Mr Fish for a month, saw drastic improvement in the yield. He said: ""All the varieties of carp, particularly the Roopchand, in my farm have undergone a healthy increase in size. My neighbours told me that fish from my farm taste much better than those available in the market."" ""Most of the products in the market deal with disease control in fish farming but no product ensures fish taste and quality. That is why Mr Fish is such a novelty,"" said Prof. Jayanta Bhattacharya of the Department of Mining Engineering and School of Environmental Science and Engineering.

Prof. Bhattacharya is also one of the directors of Zelence. Mr Fish is produced from natural bioactive molecules and some isolated and innovated probiotics. Of liquid consistency, Mr Fish improves the feed conversion ratio, enhances particular amino acids, and regulates the control of uniform distribution of fats and proteins in fish cells that results in improved shine, storability and taste of fish.

### **West Bengal: Tajpur and Haldia: How coastal development is impacting fishing**

<https://www.downtoearth.org.in/news/governance/tajpur-and-haldia-how-coastal-development-is-impacting-fishing-in-west-bengal-63212>

"West Bengal Chief Minister Mamata Banerjee recently took back control of the proposed deep-sea port in Tajpur in East Midnapur district, saying the state will develop the project without the Centre. But, what about the livelihood of the stakeholders? The local fishing community has not been apprised about the port project or told how their lives will be affected by it. Down To Earth visited a few of the areas the port would cover and found that not one official has visited these places up till now. "I have heard of the project, but so far have not officially informed by the government about it. The fishermen there have not received any official intimation yet. The details of the port are still unknown and also how it will affect the 6,000 registered fishermen and labourers, says Apurba Kar, an assistant at Tajpur Jaladha Matsya

Khoti, one of the two matsya khotis in Tajpur where fishermen come and dry the fishes they catch before dispatching them to the market.

Since the fishing community has received no guidance on what they should do to sustain themselves, they have come to believe that for the sake of development they should abandon their traditional source of livelihood. “I have heard that a port will be built here but that will be in the deep sea and won't affect our work. In fact, our sons will get jobs, says Anil Kumar Borai, secretary of Jaladha Ma Bansholi Matsya Khoti, the other matsya khoti of the region. “We are concerned because we may have to leave our homes. Will we get the right price for that? he adds. There are others who think the port will keep them afloat. “If the government builds a port, it will secure us from washing away in the sea. We have seen sand dams being washed away and mechanised trawlers also affect our business. A port will affect affected fishing though, but we have to think of a better future, says Sukumar Bera, a fisherman in Tajpur.

Moreover, the women of the region find the port project threatening them existentially. “What will we do if the fishing stops? We come from different places and are very poor. We earn whatever we can to support our husbands. The men can go for other jobs on to the port, but we can't. Our families will suffer a lot, says a group of fishing women in the region. Even if the fishing community manages to keep their work going, the port could give way to a technical issue. “The port can either increase the speed of waves or decrease it. We cast nets on wooden rods. If the waves increase, it will uproot the rods and the nets will be ripped apart and if it decreases, the fish will not reach the net. Both ways we'll suffer, says Pabitra Pradhan, member of Jaladha Ma Bansholi Matsya Khoti. Haldia: An industrialised fishing town West Bengal already has one example of what rapid industrialisation does to ports Haldia. The fishing community in the port city says their income has reduced by one-third since industrialisation started in the region two decades ago. Few people in the community have thought about that side of the story. Bhabani Barui, a fisherwoman in a Tajpur village, says, “I've heard that we may have to leave our homes and it can be true because Haldia villagers also had to. Near-port villages never remain intact. But, fishing is all we know. What else will we do if we are asked to leave and earn through different means? It will be very painful for us. And now that eight jetties are being planned under the ambitious Sagarmala programme, the fishing community is being threatened even more.

Angshuman Midya, president of Rupnarayan Chawk Matsya Obotaran Kendra, says, “A water way between Haldia and Varanasi may be made under this project. This will massively impact small-scale fishing business. And, setting up jetties is definitely a threat to us. Already the youngsters there are migrating to other states and countries. The matsya kothi members say while earlier 80 per cent of fishing labourers were from the village, the number has come down to just 10 per cent now. Saibul Ali, a fisherman busy repairing a boat on the banks of Rupnarayan river, says, “We have to pay at least Rs 3 lakh to get a job. Plus, there hasn't been any development in the area at all. Although Tajpur's port story is just about to begin, it's not

much different from what's still happening to Haldia's fishing community. They too haven't been visited by a single official yet to inform them about the jetties. Manju Dolui, a fisherwoman in Haldia, says, "We don't know about jetties but if it affects our livelihood we don't want it. But no higher official has ever come to visit us and heard our problems.

If this continues, we will be forced to leave our profession. The fishing communities in both coastal regions are suffering from the effects of industrialisation without proper planning, pollution control methods, or the government offering them any way out to a sustainable livelihood.

### **West Bengal: Sundarbans vulnerable to storm surges**

<https://indiaclimatedialogue.net/2019/01/28/sundarbans-vulnerable-to-storm-surges/>

"Villages located near river creeks and low-lying areas of the Sundarbans are more vulnerable to storm surges, whose frequency is projected to increase due to global warming, a study by scientists from Jamia Milia University in New Delhi says. The scientists assessed people's vulnerability as a function of exposure, sensitivity and resilience capacity, and developed a composite vulnerability index (CVI) based on the three factors. Villages located in the lower and southern parts of the study area were found to be the most vulnerable to storm surges. Most of these villages are near rivers and creeks, while others are located in low-lying areas. Conversely, villages located at higher places faced fewer storm surges. But some villages in the northern part of the study area were highly vulnerable due to presence of low-lying and waterlogged wetlands. The findings of the study, reported in *Remote Sensing Applications: Society and Environment Journal*, may have implications for developing resilience capacity in response to storm surge flooding, the scientists say.

It can help the local policymakers integrate local multi-hazards knowledge and provide information in a form that can help take action to both mitigate and adapt to storm surge floods, they say. Identifying vulnerable villages. The study has identified vulnerable villages, and "nascent efforts will now be made to assess vulnerable populations within these villages, says Haroon Sajjad, lead author of the study. "Poor coastal zone management, limited livelihood facilities, low level of infrastructural development and insufficient institutional management have all made Sundarbans coast more vulnerable to climate-induced disasters, he said. "It is hoped that the government would take necessary steps towards policy recommendations, Sajjad added.

These include location-specific poverty reduction measures to reduce overall vulnerability; exploring tourism as an alternative source of income; community infrastructural development; and improved early warning systems and cyclone and flood centres that serve as shelters during extreme events. However, Tuhin Ghosh, assistant professor at the department of oceanographic

studies at Jadavpur University in Kolkata, who has worked extensively on the Sundarbans and analysed the impacts of the storm surge due to the 2009 cyclone Aila on more than 3,500 km of the old earthen embankments, disagrees with some of research findings. Ghosh says that the maximum surge height, over a 120-year period of 15.6 m in the study area, as reported in the new study, “is a gross overestimation, and more than twice than the storm surge height during the super cyclone in Odisha in 1999.

Ghosh cites a previous study published in *Environmental Fluid Mechanics* journal, which shows that the estimated peak storm surge was about 4 m in the Sundarbans region that propagated into all major rivers, inundating the riverbanks as well inland areas. Ghosh cites this report to point out that the funnelling effect of the Bay of Bengal and intricate network of rivers and tidal creeks in the Sundarbans delta construct a more complex system that may dissipate the propagation of a storm surge to a large extent. “The proximity of the coastline must be considered as a reduction factor, and an important variable in the vulnerability analysis, he says. Bangladesh and India share the Sundarbans, an area of about 25,500 sq. km that is home to the world's largest mangrove forest. Of this, roughly one-third nearly 9,630 sq. km lies in India.

In India, the Sundarbans is bound by water on three sides Hooghly River to the west, Ichamati-Raimangal River to the east and the Bay of Bengal to the south. Only 54 of its 102 islands are inhabited. Most of the people are below the poverty line earning less than USD 1.5 a day with limited access to resources, and are, hence, unable to cope. Salty waters as storm surges are expected to increase in the Bay of Bengal due to climate change, the flood inundation that they bring in their wake “will have far reaching socio-economic and ecological implications on the study area, the report by Sajjad cautions. With the incursion of more seawater due to storm surges, croplands and settlements will become more saline, making agriculture more unproductive. Meanwhile, the mixing of seawater with swamps in the area will also “have deleterious impact on the biodiversity of the region, it says. Scientists and policy analysts are already reporting some long-term impacts of storm surges in the study area that has undergone major economic and social changes during the last 15 years and witnessed the displacement of an estimated 70,000 people. For example, agriculture was heavily affected after the 2009 cyclone Aila that devastated the Sundarbans deltaic area, with most of the agricultural land lying fallow till date.

Similarly, fish production has declined significantly. Sajjad's research findings are in line with a 2017 report of the World Bank, which says that the southwest coastal region of Bangladesh is already becoming increasingly saline, especially between October and May. Laboratory analyses of water and soil samples show an increase of salinity over time in the region. “Climate change induced sea-level rise will further intensify the problem of river and soil salinisation, the report says. World Bank studies also predict that the progressive salinisation of water and soil in a changing climate will significantly impact the fragile ecosystem of the Sundarbans, a UNESCO World Heritage Site, and affect the people living in and around the forest.

The report says, “Increased water salinity will alter the aquatic ecosystem and the mangrove forest, along with significant shortages of water for drinking and irrigation in the south-west coastal area, while soil salinisation is likely to lead to a significant decline in the output of high-yielding rice. Contentious embankments Some scientists and policy analysts also say that the tendency of governments to build embankments to protect the Sundarbans residents from flooding end up compounding the problem due to sea level rise and tidal waves. John Pethik, retired professor and coastal science expert at Newcastle University, Britain, who has worked extensively on the Sundarbans coast, says that his research “has demonstrated that the construction of flood defences in the Sundarbans has acted to increase the rate of sea level rise and thus the vulnerability of its inhabitants. Such constructions amplify the tidal wave as it passes into the channels constricted by embankments. Pethik's studies have also shown that while deltaic subsidence, amplify the effect of sea level rise in the Sundarbans, the main culprit is the increased tidal waves in the channels constricted by embankments.

Yet there are signs of hope. A February 2018 paper of Social, Technological and Environmental Pathways to Sustainability (STEPS) Centre says that despite the predominantly top-down, out-of-context policies that “can often hamper efforts to support locally appropriate and socially just adaptation in the Sundarbans, there are some signs of hope for emerging alternate pathways. Experiments are on by agricultural scientists, non-government organisations and local people to revive salinity-resistant traditional paddy crops, which could usher in changes in agricultural practices, which can help farmers, build climate-resilient crop systems. There are similar experiments on culturing fish and prawn species that can tolerate salinity. “While these alternative pathways can help build local resilience it is important that they are accessible and affordable to the poorest of the poor, especially in a region where most of the people are below the poverty line, the working paper says.

### **West Bengal: 52 held for netting fish without permission inside Sundarbans**

<http://unb.com.bd/category/Bangladesh/52-held-for-netting-fish-without-permission-inside-sundarbans/10151>

"Members of Coast Guard detained 52 fishermen for catching fish in the waters of the Sundarbans without taking authority's prior permission from Bangabandhurchar under Dacope Upazila on Tuesday. On information, a Coast Guard team from Dubla BCG outpost detained them from the place on Monday night and arrested them and seized 8 lakhs Faisa fish fries, five boats and few nets, said Lt Abdullah Al Mahmud, Coast Guard detective of Sundarbans West Zone. The detainees were handed over to Sundarbans Nilkamal Stations, he added.

### **West Bengal: Fish release scheme by Bengal Govt**

<http://www.uniindia.com/fish-release-scheme-by-bengal-govt/east/news/1457557.html>

"The office of the Fisheries Department in North 24 Parganas district has taken up a major scheme of releasing fish hatchlings. This would help the hundreds of fishermen who earn their livelihoods by fishing on the River Hooghly. As part of this scheme, in December, thousands of hatchlings of the commercially profitable fishes of rohu, catla and mrigel were released from six ghats between Dunlop Ghat in Halisahar and Gandhi Ghat in Barrackpore, all on the bank of the Hooghly River.

### **West Bengal: Demands policy changes for gender equity and dignified compensation for Tiger widows, DMF Women delegation**

"A nine member delegation from the women wing of Dakshinbanga Matsyajibi Forum (DMF) met the Hon'ble Fisheries Minister of West Bengal Sri Chandranath Sinha on 20th December 2018. Led by the Convener of women wing of DMF Jharna Acharya, DMF Vice-President Tapasi Dolui and Adviser Shilpa Nandy, the delegation demanded a special comprehensive package of assistance for women fish workers that would include financial, infrastructure and social security support for different categories of women fish workers like fishers, fish farmers, fish sorters and dryers, fish vendors, net makers etc. The delegation also demanded that women fish workers should get priority in all general schemes provided for the benefit of fish workers since women constitute a substantial but weaker part of fish workers. The delegation also submitted in writing that the demands that had been put forward by their first deputation to the Hon'ble Minister on 21.09.2018 are yet to be met. Though the Hon'ble Minister had assured the earlier delegation that at least 20% of their demands would be made, precious little has been done on the ground. Only a very small number (7) of women fish workers were given some assistance through the fisheries department office at Diamond Harbour. The Hon'ble Minister was briefed of the miserable condition of 'Tiger Widows' by DMF organiser Koushalya Mondal, herself a tiger widow. Speedy compensation, respectable widow pension and proper rehabilitation were the demands put forward by the delegation.

The delegation also told the Hon'ble Minister that though he had asked the members of the first women delegation to meet him again in two months, they could not get any appointment in spite of repeatedly seeking the same over phone or in writing. The Hon'ble Minister was non-committal on the demands for policy changes. Instead, he asked for lists of women fish workers with their requirements from every district where DMF works and promised to provide the same within April 2019. He did not commit any assistance to the tiger widows either and advised the delegation to approach the Chief Minister for the same.

Dakshinbanga Matsyajibi Forum welcomes the offer of assistance to the women fish workers made by the Hon'ble Minister and will definitely furnish the Fisheries Department with a district wise list of women fish workers along with their specific needs for assistance. But, at the same time, DMF resents the insensitivity of the government to gender justice (a principle incorporated in the National Policy for Marine Fisheries) shown in its failure to provide a comprehensive

scheme of assistance meant specifically for women fish workers as well as in its reluctance to provide priority to women fish workers in all general benefit schemes for fish workers. DMF also implores the Government of West Bengal's Department of Fisheries to accept it as its responsibility to see that the widows of tiger victim fishermen of Sundarban lead a decent life with dignity, which is their basic human right.

### **West Bengal: Fishers' association demands restoration of Bhandardaha Bil**

"About 400 to 500 years ago Bhagirathi River flowed through Bhandardaha. In course of time with shifting of the course of river large water bodies like Bhandardaha were created in the Bhagirathi-Padma-Jalangi basin. Bhandardaha has been a very important water body of Murshidabad. Its contributions to natural environment and historical sites of the district are undeniable. Thousands of fishers earn their livelihood from this water body. Once a source of large amounts of fish, Bhandardaha played a very important role in the food security and nutritional status of local population. The farmlands around are watered from this water body. Now water inflow from Padma and adjoining areas has almost stopped. Silt, water hyacinth and pollution have devastating effects on the water and fish resources of the bil. Without getting fish the fishers are incessantly roaming around in search of livelihood. There are reports that a fund of Rupees 400 crores had been sanctioned for restoration of Bhandardaha, but nothing happened on the ground. Most of the fishermen's cooperatives that had come up around Bhandardaha have been usurped by people with vested interest. The water areas under these cooperatives are illegally sub-leased and general fishermen members are deprived of livelihood opportunities. Administrative indifference and delay-dallying make the situation worse.

### **West Bengal: Migration aiding Sundarbans youth, women adapt to climate uncertainties**

<https://india.mongabay.com/2018/12/24/migration-aiding-sundarbans-youth-women-adapt-to-climate-uncertainties/>

"As dawn breaks, 26-year-old Onimal Raptan spreads his net as far as it can stretch in the sparkling blue-grey waters of the Indian Bengal delta (IBD) in south Asia. He prepares to haul prawns, but only for the upcoming winter months. When the rains begin six months later, he will move south, to Andhra Pradesh, to work as an agricultural labourer. Raptan, is a resident of Annepur village in Gosaba community block of Sundarbans, world's largest mangrove forests, at the confluence of Ganga, Brahmaputra and Meghna rivers in the Bay of Bengal. Precariously perched at the edge of his wooden boat, Raptan cites the devastating cyclone Aila in 2009 and the barrage of impacts in its aftermath, as his trigger to venture out and look for better income options. "Aila washed our fields with salt water that stagnated for months. It became too salty to grow anything for the next five years.

We only grow paddy and potatoes which is just enough for consumption for our family of four, Raptan told this visiting Mongabay-India correspondent. Natural resource-based livelihoods

such as agriculture and fishing predominate in the Sundarbans that is home to 4.3 million people. Due to paucity of fresh ground water resources, mono-cropping is common, which exposes them more to climate hazards such as floods and cyclones. For many migration is a way out. Men like Raptan make up the largest proportion of migrants, males aged between 21-30 years, according to a 2018 study by researchers associated with the Deltas, vulnerability & Climate Change: Migration & Adaptation (DECCMA) project.

“As an agricultural labourer in Andhra, I make Rs. 40,000 to Rs. 50,000 in two months, more than three times of what I would have earned had I stayed back and worked as a daily labourer, Raptan says with belligerence. “Our two bigha plot yields nine sacks of rice per year. There is no arrangement for irrigation to acquire sweet water. There is no political will to start irrigation, Raptan said. In India's Sundarbans region where 54 of the 102 islands support human settlements, one in five households now has at least one family member who has migrated, said Tuhin Ghosh, a scientist at Jadavpur University's School of Oceanographic Studies and DECCMA India, principal investigator. “Almost two thirds of migrants are moving to seek better employment opportunities, followed by family obligations while 10 percent of respondents mentioned that the migrant left to pursue a degree or obtain training in a new skill, said Ghosh discussing the results of their four-year long study in the Bengal delta. Like Onimal Raptan, only a very small percentage of the respondents (three percent) in the Indian Bengal delta singled out environmental stresses as the direct cause of migration. But environmental stresses indirectly disrupt livelihood security and can contribute to economic circumstances that necessitate migration, pointed out Ghosh. People are shifting from a traditional farm based economy to a labour based one.

Sea level rise in Sundarbans higher than global average The 2018 State of Food and Agriculture: Migration, Agriculture and Rural Development report by the Food and Agriculture Organisation of the UN notes that under slow-onset environmental stressors, rural out-migration can be a risk-management or adaptation strategy, albeit one that is not generally available to the poorest. “Water regulates everything here in the Sundarbans. Water from upland and water from the delta is creating problems and benefiting people at the same time. And climate change (temperature changes in the last 100 years and rainfall patterns) is stressing people because agriculture is no longer profitable. Honey and crab collection, and fishing have been affected, Ghosh explained. At least three Sundarbans islands have gone to their watery grave and villages in neighbouring islands are being claimed by rising sea levels and creeping tides that routinely engulf the remote mangrove ecosystem.

Sugata Hazra, DECCMA Country Lead and Director, School of Oceanographic Sciences at Jadavpur University, had earlier shown that the sea level rise in Sundarbans (3.14 mm per year) is higher than the average global sea level rise. Sea level rise also has significant impact on erosion-deposition processes that shape the islands and subsequent land use changes. The researchers emphasised that people do not have any other option other than migrating, which can

be one of these options – daily commute within the state or seasonal and opportunistic visits to other states and within Bengal itself. For returnee Pradip Mandal of Bali island, picking up work in the southern state of Kerala has become a way to cope with the effects of river bank erosion linked to sea-level rise. The basin like islands, till date are protected by about 3500 km long earthen embankments which are mostly 150 years old.

They are being weakened everyday by the swirling currents that scour at their bases and by tidal surges coupled with strong winds, points out Pradip, the only earning member in his family. “Our homestead is at the edge of the river on the island and is being constantly eroded. His domestic woes are compounded by the fact that local administration has asked his family to evacuate their present property so as to make way for road construction. Remittance has saved them for the time being. Pradip escaped the devastation of the Kerala floods this year as he was in the Sundarbans. “But there are limited options for work here and agriculture is no longer feasible with the available facilities. If I don't work (outside) then my family will not get food, Pradip asserts. Female migrants are increasing Remittance money sent by her mother-in-law working in the western state of Maharashtra staved off poverty for thirty-year old Mamata Mandal, a resident of Dulki in Gosaba, who was widowed eight years ago when her husband was dragged away by a tiger on a fishing trip. With three school-going children to take care of, Mamata, who quit her education in primary school itself, solely depends on her mother-in-law who works as a house help in Pune city of Maharashtra and visits her village only twice a year. For her future, Mamata plans to move to the nearest city, Kolkata, once her children finish school, to support her finances. “I will try to do some work.

I will have to work as a domestic help since I do not have much of an education. No work is menial whether you are educated or not. When Mamata does take the leap of faith, she will contribute to growing numbers of female migrants, a trend mapped by researchers. Although both men and women tend to migrate seasonally, their patterns differ. Both men and women migrate to Kolkata, although men typically to the areas where they work in construction, with women mainly to the peri-urban areas for employment as domestic workers, pointed out Sumana Banerjee, DECCMA co-ordinator. But unlike men, seven out of 10 migrating women stay within their home state of West Bengal, often working in or near Kolkata, caring for children or the elderly, Banerjee observed.

Female migrants with higher levels of education mostly move with their family members. Male migrants also venture further afield, including to Maharashtra, Tamil Nadu, Kerala and Gujarat, the study found. Human animal conflicts in the mangrove habitats are also driving migration. Sushama Das, doubles up as an agricultural labourer in paddy fields and in the fisheries sector in Odisha, twice a year. When she is back in her village in Gosaba's Dulki Island, she supplements her savings by operating an ice cream cart in the block's market place. The 30-year-old switched gears from prawn collection to being a migrant worker following crocodile attacks. “This was more than five years ago. One person was killed by a crocodile. After that incident my husband

never let me go to catch prawns. He said that 'you die on land but I will not let you go for fishing', Das said. Researcher Hazra said working outside their village is the most practised adaptation option for women but is not accepted by the community as a successful adaptation due to inherent gender bias.

Problems versus aspirations But there are trade-offs to contend with for migrants. For Sushama Das it is the toilets. "In Odisha work is good but the toilets and bathrooms are in an extremely bad shape. Plus the region is very salty, there is no sweet water and so I don't like it much, she said. Water-associated problems and irregular food habits due to workload plague Bali Island's Abhijit Mali and friends who are dependant on Tamil Nadu which accommodates 10.67 lakh migrant workers, largely in the manufacturing sector. "We do not like to depend on forests so my father and I have never been into fishery or honey collection. We do not own land so we do not have inclination for agriculture. If youth like us get opportunities to work here in other sectors then I would prefer to have stayed back, Mali said. But Kaushik Mandal in Satjelia island staunchly differs. He would have wanted to purchase land and cultivate paddy but is wary of the climatic hazards. "After Aila, crop yields have declined. And there is not enough of land available, so what can we do. I don't see any future here. I don't foresee anything good, only the bad. Even if you are educated then also jobs are far and few, Kaushik said. Kaushik is a second generation migrant but he returns once a year instead of his father's seasonal approach.

"The company I work in Karnataka employs 3000 to 4000 youth from the islands here. Youth prefer to go out and some even have taken their families. This is the way things are now, Kaushik says with indifference. Policy focus needed on adaptation measures Climate change and development researcher Anurag Danda who has worked extensively in the archipelago says displacement from the Sundarbans is inevitable in our lifetime even if high intensity weather events do not become more frequent or intense. "However, it may not be en mass and dramatic. Global warming will continue despite all the mitigation action, the delta will continue to sink and terrestrial space will become less. Migration can be avoided only if people can manage to live and thrive on lesser amount of land, Danda told Mongabay-India.

But this will need a very different kind of thinking on the part of the political and governmental leadership as well as communities. "For example, if the people of the Sundarban can shift to high value crops on land and water, high-end tourism and can live on raised land or on stilts, he said. According to Hazra adaptation measures that remain top priority for the community include picking up skills and rebuilding houses to make them flood tolerant. However, there are hurdles in practising them because the government does not invest in the options that communities demand."Practised adaptation options are the ones that are popularised by the government but people want different kinds of options which are not often offered by the government, Hazra elaborated. DECCMA outcomes stress that climate change impacts are reflected in a number of relevant policies and plans, for example the National Action Plan on Climate Change (NAPCC)

and the West Bengal State Action Plan on Climate Change (WBSAPCC), which specially refers to the Sundarbans as extremely vulnerable.

“However, various barriers exist to effective implementation of these policies. Despite a recommended budget allocation from 2012 to 2022, there is no information on release of it, nor any progress report on the activities carried out under the WBSAPCC, the study said. At present migration is 18 percent but 23 percent of the current non-migrant households have the intention to migrate in the future, which would lead to migration rates of 37 percent in the IBD, said DECCMA's Sumana Banerjee. Hazra underscored the need to include gender in policy-making. “There is no gender perspective in databases, in policy formulation or in implementation of disaster management plans and policies (the state) so that must be incorporated, he said. Governments must act on the fact that migration is increasingly thought of a livelihood option and help make mass movements successful. “They can have records of migrants, their skill sets and ensuring security in the receiving areas, he said. For example, if the human capital in the Sundarban region can be improved through concerted investment, the trained manpower will move to distant places to take advantage of opportunities that can be made use of with their new skills, said Danda. “As of now, it is the movement of human labour but not skills and therefore it does not cause the economy of the host location to expand the way it should, Danda added. Migration has had a negative connotation for long.

It has been associated with failure at source locations and compounded problems at host locations. In this part of the world, migration brings back memories of famine and partition. This negative construct is due to unplanned movement of people in large numbers. “It's the same narrative in many parts of the world, he said, adding there are a few positive examples from across the world of planned movement, and a school of thought that sees migration as adaptation. The examples are from Australia, Alaska, and even Odisha. - In India's Bengal delta, encompassing the Sundarbans mangrove forests, one in five households now has at least one family member who has migrated, a study has said. - Environmental stresses indirectly disrupt livelihood security and can contribute to economic circumstances that necessitate migration. - More women from the Sundarbans are picking up work in other parts of the country. - Skill development can aid migrant workers to find the right opportunities.

### **West Bengal: Fish worth Tk 1 cr damaged in Sundarban chars as Fethai weakens**

<http://unb.com.bd/category/Special/fish-worth-tk-1-cr-damaged-in-sundarban-chars-as-fethai-weakens/8743>

"Rain and fog in the last couple days have taken a serious toll on the fish-drying process in different fishing colonies across the coastal area adjacent to the Sundarbans resulting in fish worth over Taka 1 crore going bad. Torrential rain and ghastly winds have disrupted the loading-unloading of several national and international commercial ships alongside their transportation as a depression looms over the Northwest Bay leading the Met Office to issue a directive to hoist

signal number three. Dubla Fishermen Group General Secretary Md Kamal Uddin Ahmed said already money lenders of Dubla fishing colonies have suffered losses of a huge sum as the fishes could not be dried up. He further said, "As there has been no sunshine lately, fishermen are failing to dry up fishes resulting tainting and loss of money. Moreover, disastrous weather is hampering fishing process in deep sea since the high waves and incessant rain is forcing fishing trawlers and ships to drift away. Generally every year thousands of fishermen catch fish from October-November to February-March in coastal areas bordering to the Sundarbans.

Later, these fishes are dried up under the sun in different chars of the area and also been prepared for export. Al Amin, a fisherman from Meher Ali Char, told this correspondent that they (fishermen) have invested over millions but still unable to dry up fishes for the foul the weather for last couple of days. This year some 10-15 thousands fishermen have flocked to Dublar Char, Meher Ali Char, Alorkol, Ofiskilla, Majherkill, Shelar Char and Narkelbaria Char to run their drying up process. Mahmudul Hasan, Divisional Forest Officer (DFO) of East Sundarban Division, said, "If this situation continues to exist for more days, the target revenue from this sector might decrease this year. Light drizzles have been frequent for the past few days in the area as 'Cyclone Fethai' in the Bay of Bengal grows weaker. Met Office said the cyclone has turned into a depression upon weakening.

### **West Bengal: Fish population declining in the Sundarbans**

<https://indiaclimatedialogue.net/2018/12/17/fish-population-declining-in-the-sundarbans/>

"A change in human behaviour is critical to save the adversely affected fish population of the Sundarbans, the world's largest mangrove forest, according to a team of scientists. The range of advisable human activities need to be incorporated into government policy, and the best place to do so is the state action plan for climate change, the researchers said. Suman Bhushan Chakraborty, a fish endocrinologist and Assistant Professor at Department of Zoology, University of Calcutta, has been working along with his team in collaboration with counterparts at Visva Bharati University in Santiniketan in West Bengal for three years to chart a how climate change is affecting the fish population.

The Indian Sundarbans boasts of around 172 species of fish, 20 species of prawn and 44 species of crabs, including two commercial species. They act as the nursery ground for nearly 90% of the aquatic species of eastern coast of India, according to earlier research. The availability of important commercial species of the continental shelf that are harvested in India and neighbouring countries is closely linked to the health of the Sundarbans. The Indian Sundarbans meet 15-20% of the requirement for fish in the eastern metropolis of Kolkata, the capital of the Indian state of West Bengal. The Sundarban estuary originally contained vast areas of seasonal and permanent wetlands. The elimination of these wetlands reflected massive human-caused changes to the landscape resulting from alterations of hydrological patterns because of diversions

and changes in use of the land surrounding the area. As a result, today the Sundarban estuary is one of the most highly modified estuaries in the world.

This estuarine ecosystem has lost much of its former variability and complexity, as indicated by major declines of the stock of some of its commonly found fishes. Field survey Chakraborty's team has completed a 36-month survey for the development of an integrated measurement and conservation of fish species of the Indian Sundarbans. They have talked with local fishers and farmers to confirm their statement regarding the declining pattern of certain indigenous fish species. The study area is located in the reserved mangrove forest falling in the Kakdwip-Namkhana range of the Sundarbans within the 24 Parganas Forest Division. In this area, mangroves were lost due to encroachment, climate shift after Cyclone Aila (2009) and human intervention over a period of about 10 years.

“According to our survey and the statement of the farmers, the biggest threat to the fish and other aquatic animals is the invasion of salt water and sudden increase in salt concentration during last 15-20 years and other anthropogenic activities that are altering the physical factors of the aquatic system, Chakraborty told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “I measured salinity in 52 points in Sundarbans villages just one week before Cyclone Aila, and even after nine years the worst effects are yet to be removed, said Subir Ghosh, a veteran wetland scientist who has a research interest in the flora of the Indian Sundarbans. Chakraborty's research team has been studying 8-10 species of fish by examining their biological aspects (sampling done every month) and scrutinising the endocrinological data every month. Out of this, attention has been focused on five edible varieties for local consumption and supply to Kolkata.

These are bhetki (*Lates calcarifer*), nona tangra (*Mystus gulio*), sona tangra (*Mystus tangra*), chital (*Notopterus chitala*) and falui (*Notopterus notopterus*). The physiological data for these fish are compared with production data from the fishermen. Reckless interventions In Bidyadhari delta near the Bali Island (around 70 km from Bakkhali), due to human encroachment and other anthropogenic activity, the surrounding land mass is increasing rapidly, shortening the inner aquatic habitat. Therefore, the depth of the water column remains low (average depth less than 1 ft / 30 cms) due to increased sedimentation for most of the time of a year (average 280-300 days). Due to low water depth and stagnancy of water, most species residing the place are on the verge of losing their natural habitat and are becoming vulnerable. Therefore, the water body is losing most of its aquatic biodiversity.

Another noticeable issue is the change in pattern of tidal currents and the negative effect that this has had on the breeding patterns and on the lifecycle of the fish. Chakraborty and his team have identified four visible reasons for early death of the fish Change in tidal pattern and movement of water that leads to change in tidal bed; birds consuming fish as water level abruptly decreases; bigger fish consuming smaller fish as the water level goes down, increasing the predation pressure on the population of the smaller fish; and humans catching the fish that have come to

breed, since change in tidal patterns exposes the fish. “Due to indiscriminate fishing, there is a noticeable squeeze in biomass. People catch local fish varieties, juvenile prawn, crabs and other molluscs together, all in their eagerness to obtain the juvenile prawn, which they call meen. This has a very destructive effect because it abruptly terminates the lifecycle of the fish, Mohammad Moniruzzaman, who is part of Chakraborty's team, told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “Sadly, people are not even willing to throw back to the sea the live juveniles of the biomass that they incidentally haul up in their nets while scouring the waters for the meen. Any number of requests to these juvenile hunters falls on deaf ears.

Harvesting juvenile prawn, though banned, has continued unabated and this has contributed to loss of fish diversity, said Ghosh. Monofilament nets to add to indiscriminate fishing facilitated by tidal changes, excessive use of monofilament nets to catch surface feeders has also led to unnecessary netting of small-sized fish. Intensive misuse of trawl nets for bottom trawling results in change in turbidity and that in turn, adversely affects the fish habitat. Another problem is the steady change in the economic valuation of fish varieties. For example, *Ailia coila* a near threatened fish in the IUCN Red List (2011) did not fetch any economic returns earlier as it was seldom consumed.

However, with the passage of time, the demand for this fish variety has gone up, and so the rush to catch it has been on the rise. Likewise, red shrimp (*Solenocera melantho*) is economically important for fish feed and poultry feed. “The change in economic valuation lends greater force to overexploitation, Moniruzzaman pointed out. Re-negotiating ban periods Policy interventions are urgently needed, Chakraborty said. “The alteration in tidal patterns has not been matched by corresponding correct information on the changes in reproductive patterns of fish, he said. “So the ban periods that are enforced by the Department of Fisheries need to be reworked according to updated information. His team has recommended a spectrum of ban periods to the fisheries department.

Such bans can be facilitated only when the information obtained by researchers from the field and validated by fish farmers, is communicated to the policy maker. This has not been the case, as it appears from the field experience of the team. Corroborating this observation, Ghosh told [indiaclimatedialogue.net](http://indiaclimatedialogue.net): “Many researchers come to the Sundarbans, but do not communicate their findings to policymakers. The actual loser is the fish farmer, especially the small fish farmer, who stands to take the biggest hit due to the dwindling fish catch. Menace of trawlers Trawlers have emerged as the biggest menace in the list of anthropogenic disturbances in the Sundarbans. A 370 horsepower engine guzzles 40 litres of oil in an hour.

Besides polluting the aquatic environment, trawlers have, at least for the past two years, made it a practice to stay out at sea during the danger period of the signalling system announced jointly by the Department of Fisheries and the Meteorological Office. The 4th signal signifies a complete ban. In fact, sea bound vessels are supposed to come back when the 3rd signal is

announced. But, the trawlers stay on at their own risk and have stuck steadfastly to going out to sea at the announcement of the 4th signal, staying for 17 hours and coming back with an unhindered catch when the other conventional vessels are not going out to sea. This behaviour has its own risks. Recently, between July 16 and 31, four fishing trawlers capsized in the coastal waters of West Bengal, killing 27 fishermen. The trawlers ventured into the sea in spite of repeated warnings issued by the Department of Fisheries, it was reported. The Dakshinbanga Matsyajibi Forum (DMF) a non-political union representing fishermen in southern West Bengal pointed out in a press release dated 10 August: “The owners of the trawlers... need fish to make a profit and the crew are paid by percentage of the sale proceeds of the catch. So the economic interest provokes them to go to sea defying warnings.

DMF has strongly called for the Department of Fisheries to close their fishing harbours to sea-bound vessels after issuing warnings. They have also demanded the putting in place of a system of checking sea-worthiness of the fishing vessels while issuing license for fishing. The West Bengal Action Plan for Climate Change, the document that is best suited to incorporate policy changes for tackling climate change in the Sundarbans, is due for its updated version being released. The current version, however, says little about any concrete plan to tackle climate change due to anthropogenic causes with reference to the Sundarbans.

#### **West Bengal: Favourite fish, the hilsa, could soon be extinct as fishing trawlers flout laws**

<https://www.firstpost.com/long-reads/bengals-favourite-fish-the-hilsa-could-soon-be-extinct-as-fishing-trawlers-flout-laws-5721561.html>

"There are laws but no implementation. The West Bengal government has notified a definite time period banning the fishing of juvenile Hilsa (jatka) to save the state's favourite fish from extinction. But fishers do not obey the prohibition either in rivers or the sea. As a result, the production of Hilsa (*Tenualosa ilisha*) in West Bengal is rapidly declining. Gourmands of West Bengal are now dependent on Bangladesh for large Hilsa. From the estuary of the Ganga to deep in the Bay of Bengal, an estimated 14,000 trawlers are hovering in the migratory path of the Hilsa as the fish approaches the river to spawn, and on its way out. In spite of the ban on nets with mesh holes less than 90 mm in diameter, such nets are used most of the time. Some nets are over a kilometre long. A very large number of juvenile Hilsa are caught. The damage is twofold – the possibility of getting large Hilsa in the future is reduced, and it hampers the reproduction of the fish.

However, in the near absence of government surveillance, juvenile Hilsa fishing goes on in full spate. In order to increase the yield and production of Hilsa and other fish, the State Fisheries Department issues notifications every year to control fishing. According to these, from 15 April to 31 May, fishing is prohibited in the sea and adjoining areas. Moreover, a special ban is imposed specifically for the preservation of the Hilsa. From 15 September to 24 October, before

and after five days of the full moon, catching any type of Hilsa is prohibited. This system was initiated for the undisturbed breeding of Hilsa.

Besides fishing, selling, transporting and hoarding of Hilsa, less than 23 cm long Hilsa is prohibited. Bottom trawling is prohibited up to 12 nautical miles from the coastline. Accepting that the ban is not obeyed by some fishers, State Fisheries Minister Chandranath Sinha told [thethirdpole.net](#), “We try to teach about all kinds of fish under an awareness campaign for fishers. We hold seminars and open discussions with the marine and river fisher organisations. Most of the fishers obey the ban but some do not. Sinha said the Panchayats of the villages on the banks of the Ganga have been helping implement the ban on catching juvenile Hilsa. But fisherman Dipankar Roy narrates a different story. He fishes with a small boat round the year in the Ganga near Barrackpore (25 km upstream of Kolkata).

In his words, “I catch fish in the Ganga throughout the year. There are Hilsas also. Currently nets with very small mesh holes are used in large numbers. Some boats often hunt Hilsa weighing 8 to 10 grams, catching up to 6 kg in a day. Fishers know very well that the surveillance is inadequate. Some fishers use funnel-shaped nets (Binati Jal) to catch juvenile Hilsa and selling it in the name of Khoyra fish. In Digha estuary, this fishing of juvenile Hilsa is evident. If 500 kg of Hilsa is caught, 300 of that weighs 150 to 300 grams, all juvenile fish. A mature Hilsa weighs between 700 grams and a kilogramme. Unapologetic trawler owners In the Bay of Bengal, fishing goes on throughout the year, ignoring government restrictions. Almost admitting this, the secretary of the trawler owners' organisation United Fishermen's Association Shyamsundar Das told [thethirdpole.net](#), “Fish weighing below 300 grams may be hunted, but that does not matter. One Hilsa gives birth to some hundred thousand babies.

However, we try to observe the prohibition on juvenile Hilsa. Further charges against the big trawlers are that they bring up all types of fish through bottom trawling. Catches of juvenile Hilsa weighing less than 10 grams are thrown back into the sea. The fish is being destroyed in this way. Das says, “We have got the modern instruments and how is it possible that those will not be used? At the same time, he accepts the need for the ban, and even wants it extended to the coast off adjacent state Odisha as well as the markets there. “Otherwise, nothing can be done. When sale of juvenile Hilsa is stopped at Digha market (in West Bengal), it goes to the Odisha markets. Then it reaches the markets of Kolkata.

Artisanal fishers suffer Artisanal fishers have a different take than the trawler owners. The joint secretary of small fishers' organisation South Bengal Fishermen Forum, Debashis Shyamal, told [thethirdpole.net](#), “Destructive fishing and trawl fishing hampers Hilsa in the state. Not only Hilsa, but all kinds of fish are declining due to uncontrolled fishing. We the small fishers try to obey the ban. But the big trawlers can break all the rules with the power of their political connections. It has been a longstanding allegation in all coastal states of India that trawlers are owned by politicians and their kin, directly or anonymously. Shyamal recommended that

Bangladesh and India coordinate their Hilsa fishing ban periods and hold joint surveillance to ensure compliance. Blocked path, dirty water Apart from overfishing, a big problem for the migrating Hilsa is siltation at the mouth of the Ganga. This sea fish needs a clean and deep channel so that it can move upriver and spawn. But now there is no deep channel in the mouth of the Ganga except the one kept open by constant dredging, for the shipping to and from Kolkata port. And not a single channel – deep or shallow – has any clean water. The pollution in the Lower Ganga is largely unchecked, and the bacterium E Coli (which causes diarrhoea or worse) has been counted at a million times the safe limit prescribed by the World Health Organisation. That, and an overall lack of fresh water due to dams and barrages upstream in the Ganga basin, has a highly adverse effect on the reproduction of the Hilsa. The increasing salinity of the estuary is an added cause. The Hilsa looks for fresh water to spawn, but does not find any.

Changed life Asimkumar Nath, a fisheries expert in Sidho Kanhu Birsa University of West Bengal, has found another effect of this forced change in the life cycle of the Hilsa. Due to siltation, many fish find their way back to the sea blocked. Studies that include tagging some Hilsa have shown that some have remained in the Ganga and its tributaries for the last several years. He said some such “resident Hilsa have been found as far upstream as Farakka, over 350 km from the mouth of the Ganga. Nath is confident that even if 20 percent of the Hilsa living and breeding in the rivers can be saved from overfishing, there will be no shortage of the fish in West Bengal.

Protection plans though its current plans to protect the Hilsa are yielding limited results, the West Bengal government has new plans to protect the fish. Fisheries Minister Sinha said his department has identified three spawning areas that will be declared sanctuaries. “Special monitoring will be arranged in Raichak-Godakhali, Tribeni-Balagarh and Lalbag-Farakka, he told thethirdpole.net. “Hilsa lays eggs in those places. Hilsa Research centres will also be built there. The minister said scientists are trying to breed Hilsa in ponds. “The Hilsa Conservation and Research Centre (HCRC) in Diamond Harbour will move that work forward. Nofima, a Norwegian institute for food, fisheries and aquaculture research, will work with HCRC. Nofima has been working on salmon production for 45 years and they have expertise in aquaculture. Central Inland Fisheries Research Institute (CIFRI) is also a partner in this project. Six water bodies have been identified in Falta near Raichak and East Kolkata Wetland to conduct the research. Nath says, “There is no necessity to spend a huge amount of money to artificially breed Hilsa in ponds, if the juvenile [fish] are saved by increasing surveillance.

### **West Bengal: Another fisherman mauled by tiger in Sunderbans**

<https://www.timesnownews.com/mirror-now/society/article/west-bengal-another-fisherman-mauled-by-tiger-in-sunderbans/330917>

"A tiger killed a fisherman in the Sunderbans on Wednesday evening. Nilanjul Mullick, Tiger Reserve Field Director said that they have not received any confirmation of the news yet.

According to report in The Times of India, unidentified sources said that the victim has been identified as Ganga Mondal, a resident of Mollakhali aged 53. According to a source, the incident happened in the forests of Panchamukhani. In a similar incident, another fisherman was killed by a Royal Bengal Tiger in Benifeli forest of Sundarbans. Kanai Ghosh (45), the deceased, was a resident of Gurguria village in Kultali. Along with four fishermen, he had gone to the forest to catch some fish.

The other fishermen fled from the forest when the tiger jumped on Ghosh from behind. RP Saini, Director of Sundarban Biosphere Reserve earlier told Millenium Post that the authorities are helping villagers to take up apiculture or beekeeping right in the villages so that they do not need to go deep into the forests. The Forest Department will also help villagers in crab breeding. This will help reduce the number of human deaths due to tiger attack. The women who lose their husbands in tiger attacks are called as the 'tiger widows' of Bengal. They are often blamed for the deaths of their husbands. Researchers estimate that about 50 fishermen or honey collectors are killed in tiger attacks in the country every year. This year, at least 11 villages were killed and three injured in tiger attacks in the Sundarbans this year.

### **West Bengal: 1,700 Sunderbans fishermen to get boat licence certificates**

<http://www.millenniumpost.in/kolkata/1700-sunderbans-fishermen-to-get-boat-licence-certificates-331202>

"The state government will issue as many as 1,700 boat licence certificates (BLCs) to fishermen in the Sunderbans, allowing them the privilege to venture into the rivers for catching fishes and crabs. A majority of the people inhabiting the mangrove forest are dependent on fishing and catching crabs for their livelihood. As per records of the state government, there are a total of 4,700 BLCs issued to the fishermen. Around 1,723 of them are lying inactive, with the licence holders hardly venturing out. The licences were issued over 8 years ago. ""We want needy and poor fishermen to reap the benefits of BLC. I have instructed the committee responsible for dealing with the issues of fishermen to ensure this,"" state Forest minister Binay Krishna Burman said.

A high level meeting was held at Aranya Bhavan in Salt Lake on Monday in presence of ministers in charge and higher officials of the state Forest, Fisheries and Sunderban Affairs department and the Fishermen's Association in the area. Apart from Burman, state Fisheries minister Chandranath Sinha and Sunderban Affairs minister (Independent Charge) Manturam Pakhira were also present in the meeting. Chief Minister Mamata Banerjee had formed a committee in 2017 that has representatives from the ground level to address the issues of fishermen and ensure that they can eke out a decent living. The committee will make a list of the 1,700 fishermen to whom the BLCs will be issued. Meanwhile, an association of fishermen demanded fishing rights in the entire area of Sunderbans Tiger Reserve and also allowance of mechanised boats for fishing. However, officials of the state government made it clear that

fishing activities should be carried out in accordance to the rules earmarked for fishing.

### **West Bengal: Life-support boats for coastal fishermen**

<http://www.uniindia.com/life-support-boats-for-coastal-fishermen/east/news/1430215.html>

"About four lakh people in Bengal are associated with fishery for their livelihoods. The State Government has decided to introduce life-support boats for the benefit of coastal fishermen, for rescuing them during storms, accidents or any other incidents. This was recently announced by the State Fisheries Minister. He also said a new set of rules would be brought into force to enable the setting up of the system. Along with purchase of the specialised boats, space would be made at various ports to store them. These boats are built in a way to quickly reach people stuck at sea.

### **West Bengal: Fishermen call for national policy on Inland Fisheries & Aquaculture**

<http://www.millenniumpost.in/kolkata/fishermen-call-for-national-policy-on-inland-fisheries-aquaculture-330682>

"Various fish workers' forums in the state have written to the Union Agriculture minister, urging him to immediately prepare a national policy on Inland Fisheries and Aquaculture. As the fishermen from Bengal have seen an unprecedented growth in Inland fisheries in the state, the demand for a national policy has been strengthened. Pradip Chatterjee, convener, National Platform for Small Scale Fish Workers (Inland), said that fishermen in the state are disappointed at the inordinate delay in publication of the draft of the National Inland Fisheries and Aquaculture Policy. The National Platform for Small Scale Fish Workers (Inland) has submitted a memorandum to the minister of Agriculture and Farmers' Welfare at the Centre and the Secretary of the department of Animal Husbandry, Dairying and Fisheries, to expedite the process. The department of Animal Husbandry, Dairying and Fisheries in the Ministry of Agriculture and Farmers' Welfare had formed an expert committee on October 21, 2016, under chairperson Dr Dilip Kumar, former V-C of CIFE, Mumbai, to collect stakeholders' responses towards developing a National Policy on Inland Fisheries. The committee collected stakeholders' responses through two sets of questionnaire and held 4 regional consultations with stakeholders at different places of the country.

A national level consultation was organised on April 26-27, 2018, at ICAR-CIFE, Mumbai, to finalise the recommendations towards a draft National Policy for Inland Fisheries and Aquaculture. The expert committee also submitted its recommendations on the draft policy to the

department of Animal Husbandry, Dairying and Fisheries in the Ministry of Agriculture and Farmers' Welfare. But the draft policy is yet to be published by the Centre. "Almost 2 years have passed, but the draft policy has not come out. The inland fisheries sector of our country is yet to get a comprehensive policy document to guide its management and protection. By contrast, the marine fisheries sector of India had its National Policy way back in 2004, which has been revised in 2017. It may be worth mentioning here that the inland fisheries sector of our country is almost twice as large as the marine sector, in both production and employment," Chatterjee maintained.

### **West Bengal: 'Eco-fish tourism' project coming up in Chandanpiri**

<http://www.uniindia.com/-eco-fish-tourism-project-coming-up-in-chandanpiri/east/news/1422246.html>

"The State Fisheries Development Corporation (SFDC) is setting up a tourism project in Chandanpiri, about 12 km from Namkhana in South 24 Parganas district. The place is located in the UNESCO recognised natural heritage site of the Sundarbans. The 'eco fish tourism' project, as it has been termed, is located at the estuary of the river Saptamukhi with the Bay of Bengal. It would be completed at the beginning of 2020. These information were provided by the Fisheries Minister. This project has been taken up after the success of the recently-developed resorts at Henry's Island and Frasersganj, according to the minister. There would be four cottages for tourists at the 5-hectare site. The 600 sq ft structures would be located above the water surface. Each would be able to accommodate two people. The mangrove forests would provide for a wonderful experience for tourists.

A jetty and roads to the site are being constructed. Cultivation of prawn, rohu, catla and mrigel would take place at the site, where tourists would be able to catch them free of cost. The site will also have a 50-ft watchtower, from where beautiful unimpeded views of the Sundarbans and the Bay of Bengal can be had. Along with these there will be a cafeteria, restaurant and children's park. From the resort, tourists would be taken to see tigers and, aboard launches, to the Bhagabatipur Crocodile Project.

### **West Bengal: Hilsa Fishers in West Bengal Driven to the Edge by Overfishing**

<https://thewire.in/environment/hilsa-fishers-in-west-bengal-driven-to-the-edge-by-overfishing>

"Uttam Das, 32, and his two younger brothers of Chauliya village are hilsa (*Tenualosa ilisha*) fishermen. In their village under Nakole panchayat in Shyampur II CD administrative block of Howrah district, there are three motorised boats, and 40 country boats engaged in hilsa fishing. Das has been fishing in the Rupnarayan River since he was 12 years old. In the past 10 years, he has seen the catch decline steadily. "Now getting a good hilsa catch is like winning a

lottery, Das told VillageSquare.in. Their fishing territory stretches from Kolaghat in Purba Medinipur district to Haldia Township, also in the same district. Fish population in Rupnarayan River that was famous for its high quality hilsa catch has been declining steadily, and riverine fishermen have been at the receiving end. Riverine fishing Hilsa belongs to the Clupeidae family, migrating to freshwater habitats for breeding.

The juveniles migrate back to the estuary and sea. For about five months after hatching, the fish stay in the riverine stretch of about 523 km starting from Howrah and moving upstream up to Farakka barrage in Murshidabad district. The fish need 20 to 30 meter depth of freshwater for migration. The hilsa fishermen get about six months to fish hilsa, considered a delicacy in West Bengal and Bangladesh. Mid-July to mid-September is the season for larger hilsa that fetch high prices. Mid-September to mid-October is the spawning season and there's a ban on hilsa fishing. They fish smaller-sized hilsa called khoka ilish from mid-January to mid-March. A typical hilsa fishing trip lasts between 10 and 20 days. During the peak hilsa fishing season, any two-cylinder motorised boat, accommodating up to eight men, or conventional country boat up to five men, will make about five trips to the river.

“The average fecundity of hilsa is 12 to 20 lakh, so conservation measures in the river would yield a good crop of mature fish, Saptarshi Biswas, Deputy Director, Fisheries, Hilsa Conservation Research Center, West Bengal, told VillageSquare.in. Declining fish catch Members of the Rupnarayan Nad Matsyajibi Union (Rupnarayan River fishermen's union) said that indiscriminate fishing by marine hilsa fishermen in high-powered mechanised boats with six or seven cylinder engines was the reason for the declining fish population. “There are also bottom trawlers in the sea with 1,000 feet nets that scour the sea bottom and amass enormous harvests of not just the hilsa, but also other fish including juveniles, marine scientist Amalesh Chaudhuri told VillageSquare.in. “This is ecologically extremely destructive. The year 2010 saw a bumper hilsa catch in the foreshore seas, leading to a rush for marine hilsa in the years that followed. This also led to indiscriminate harvesting of hilsa downstream, affecting the upstream catch. Total catch figures over the years show a widening gap between inland and marine catch. Ban to check decline The West Bengal government announced a ban in 2013. This meant the need for planning for alternative livelihood for hilsa fishermen, especially those in the riverine stretch. This stretch includes the districts of Malda, Murshidabad, Nadia, Bardhaman, Hooghly, and Howrah, Purba Medinipur, North 24 Parganas and South 24 Parganas districts.

Other aspects of the ban include ban on catching, marketing, transportation and possessing juveniles less than 23 cm in length, ban on using monofilament gill nets having mesh size less than 90mm, ban on bottom trawling within 12 nautical miles of the continental shelf, ban on putting up bag nets, scoop nets and small meshed gill nets along the migratory route during February to April and complete ban on fishing within 5 sq. km of Farakka barrage. In addition, the spawning areas have been declared as sanctuaries to facilitate spawning. “This enforcement has to be gradual because of the human aspect and the economic issues involved, said Biswas.

Ban period and beyond During a normal fishing season for full-sized hilsa, a motorised or a country boat will harvest about Rs 4 lakh worth of fish. Those fishing in Rupnarayan said that during a good season, this might go up by another Rs 2 lakh. Das and his fellow fishermen know about the coastal ban, but not about the spawning ban, though they are aware of the spawning season. They admit to fishing during the spawning period.

“We do not fish much during the month of Ashwin, the spawning season for large-sized hilsa, since the fish size gets smaller, said Das. “Since this stretch of the river does not have a sizeable hilsa population, police do not pay much attention to it, Das told VillageSquare.in. “Their focus is on big landing centres such as Diamond Harbor. Even then, managing to get a good fish catch can be difficult. To minimise losses, most of the fishermen in Nakole and the six villages under the panchayat fish jointly. Uttam Das and his brothers fish together, pooling their resources, and dividing the profits. Non-fishing livelihoods after the fishing season, the fishers cultivate their own plots of land for their yearly quota of consumable rice, work as contractual agricultural labor in others' rice fields or work in brick kilns bordering Rupnarayan.

“The last one is hardly an alternative, because brick kilns work on a 5-month labor contract and they do not want us, since our fishing activities would resume after two months, Prahlad Das of Henre village in Nakole panchayat, told VillageSquare.in. “This impacts our overall economic condition. Overcrowded fishing space If the catch is unsatisfactory, Uttam Das and his brothers go up to the Hooghly estuary. The strength of their engines, size of boats as well as compulsion to offload the catch within a stipulated time, limit their operating space and time, and hence the catch size. Within the river stretch, competition is intense. Since hilsa is found over a wide river stretch and is not confined to any place, many fishermen are engaged in catching it.

To supplement their income, fishermen catch other fish also during fishing season. Fishermen native to the Kolaghat region do not allow Uttam and other fishermen from Nakole to catch other fish varieties. Chaudhuri, who served as an advisor to a World Wildlife Fund – International Union for Conservation of Nature (WWF-IUCN) 2014 study on sustainable livelihood strategies for fishermen communities during hilsa fishing ban period in West Bengal, 2014, said that fishing space is occupied by those from other livelihood background.

“Erstwhile cultivators have replaced artisanal fishermen in the rivers, he said. Unviable alternative scheme with the fishing space so crowded and the catch uncertain, respecting restrictions on the size of the fishing net or the ban on catching small-sized hilsa becomes a real challenge. The department of fisheries, West Bengal, started a livelihood scheme in 2013-14, there are several difficulties in implementation. It envisaged creating fish vending units for affected fishermen. The unit consisted of a cycle, an insulated fish box, a fish cutter, weighing scales and a one-time financial help of Rs 500-1000 to buy fish. “The livelihood scheme and its implementation are misdirected, Milan Das of the Dakshinbanga Matsyajibi Forum, a non-party fishermen's union with several hilsa fishermen members told VillageSquare.in.

“The scheme is unsuitable for those fishing in the river. Besides, the total number of hilsa fishermen has not been ascertained. The department has contractually engaged 30 data collectors to collect data about fish catch and the number of fishermen who depend on hilsa for a livelihood. But the data is not yet available in the public domain. The fishermen charge that the vending units given to the panchayats were distributed to those who are not engaged in Hilsa fishing at all. “Fishermen's associations should have been consulted to identify actual fishers and only then the units should have been distributed, said Milan Das. “So today we have desperate fishermen venturing out to fish despite the ban, and getting caught by the authorities, Milan Das told VillageSquare.in. “The scheme is of little benefit at present.

**West Bengal: 70 per cent boats in West Bengal fitted with automated trackers: Navy officer**

<https://www.financialexpress.com/defence/70-per-cent-boats-in-west-bengal-fitted-with-automated-trackers-navy-officer/1402802/>

"Around 70 per cent boats in West Bengal have been fitted with automated trackers, mandated for all vessels in the country to prevent terror attacks from the sea, Navy Officer in-Charge, Bengal area, Commodore Suprobho De said Monday. Union Home Ministry has mandated that all boats or vessels registered in the country will have to be fitted with an Automatic Identification System (AIS) for getting information on their location and details of the vessels, including ownership, De told newsmen here. “All vessels, including fishing boats, are required to be fitted with Automatic Identification System (AIS) so that we can identify a friend from a foe, he said. Lessons learnt from the 26/11 attack in Mumbai, in which the terrorists had taken the sea route to reach the country's shores, has led to mandating the fitting of AIS trackers in all boats, he added. Admitting that there were issues with regard to all fishermen not having biometric cards and of unregistered boats, apart from the cost involved in fitting the trackers, De said “these problems are being taken care of, we are definitely moving forward. The Indian Space Research Organisation (ISRO) has developed a cost-effective transponder, De told the media ahead of Navy Day celebrations to be held on Tuesday. Stating that all agencies were in sync, De said the fisheries department were responsible for checking the license, equipment and life saving material on the boats. The Indian Coast Guard has been asked to check and inform the state government of any shortcoming on these issues, he said.

**West Bengal: Fishermen take survival lessons**

<https://timesofindia.indiatimes.com/city/kolkata/fishermen-take-survival-lessons/articleshow/66908731.cms>

"Many of the nearly 49 fishermen from South 24 Parganas who lost their lives due to rough weather and high seas a few months ago may have been alive today had they carried basic life-saving equipment, it was revealed during a workshop on Maritime Search and Rescue (M-SAR) for the fishing community at the Kakdwip fishing harbour on Friday. Equipment such as Distress

Alert Transmitters (DAT) and radio sets as well as life jackets and life buoys were displayed and demonstrations on their use given by officials from the Coast Guard headquarters at Haldia and unit at Frazerganj. “Not a single life jacket was found in any of the capsized trawlers. There were no DAT signals either, though the transmitters are distributed free of cost to boat owners. In fact, we have not received a single correct alert in the last two years. There have been alerts but they were bogus.

We mobilised our vessels only to realise that some signals got sent by children as the DATs were kept at home instead of the trawlers. In some cases, buttons got pressed when trawlers were being repaired at the harbour. Fishermen need to learn how to use DATs and protect them from harm. After all, it can save several lives. Even a basic item like a life jacket can keep a fisherman alive in the water for a day, however rough the sea, said M A Warsi, DIG and commander, Coast Guard headquarters, Haldia. During the interaction, it also came to light that save for a few, none of the wireless sets on fishing trawlers in West Bengal have licences. This was admitted by Bijon Maity, secretary, Kakdwip Fishermen Welfare Association.

According to Coast Guard records, there are nearly 3.4 lakh fishermen in the state and an estimated 3,000 fishing trawlers are out in the high seas every day. “I admit that except for 2-3 trawlers, none have licences for wireless sets. We did try for licences that cost a few hundred rupees each but touts at the monitoring station at Taratala demanded Rs 25,000-30,000 for every licence. Later, officials did apologise and took steps but the initiative had died down by then, he said. Ambarish Nag Biswas, secretary, West Bengal Radio Club, assured that all assistance will be provided for better wireless communication from trawlers once licences are obtained. “You are unknowingly getting involved in an anti-national activity by using radio sets without licences. We know that the VHF antennae on trawlers get corroded due to the salinity and have developed one that has no such problem.

You will also have to stop encroaching on frequencies meant for others. We often notice you chatting over our frequency that is used for emergencies at times. You will also need HF sets very soon as the extent of your fishing limits has been extended. We shall also train you in the use of HF sets like in Andhra Pradesh but get your licenses first, he said. Commandant Avijit Dasgupta, who heads the Coast Guard station at Frazerganj, warned fishermen against crossing the International Maritime Boundary Line (IMBL) into Bangladesh. “A few days ago, some fishermen reported to the police that two of their trawlers were seized by Bangladeshi authorities. They were dropped off on an island to fend for themselves. Fortunately, they were picked up by other boats. Bangladeshi authorities have warned us repeatedly that you may face jail sentences if caught across the IMBL, he said.

### **West Bengal: Laws flouted, Hilsa dies In West Bengal**

<https://www.thethirdpole.net/en/2018/11/27/laws-flouted-hilsa-dies-in-west-bengal/>

"There are laws but no implementation. The West Bengal government has notified a definite time period banning the fishing of juvenile Hilsa (jatka) to save the state's favourite fish from extinction. But fishers do not obey the prohibition either in rivers or the sea. As a result, the production of Hilsa (*Tenualosa ilisha*) in West Bengal is rapidly declining. Gourmands of West Bengal are now dependent on Bangladesh for large Hilsa. From the estuary of the Ganga to deep in the Bay of Bengal, an estimated 14,000 trawlers are hovering in the migratory path of the Hilsa as the fish approaches the river to spawn, and on its way out. In spite of the ban on nets with mesh holes less than 90 mm in diameter, such nets are used most of the time. Some nets are over a kilometre long. A very large number of juvenile Hilsa are caught. The damage is twofold – the possibility of getting large Hilsa in the future is reduced, and it hampers the reproduction of the fish.

However, in the near absence of government surveillance, juvenile Hilsa fishing is going on in full spate. In order to increase the yield and production of Hilsa and other fish, the State Fisheries Department issues notifications every year to control fishing. According to these, from April 15 to May 31, fishing is prohibited in the sea and adjoining areas. Moreover, a special ban is imposed specifically for the preservation of the Hilsa. From September 15 to October 24, before and after five days of the full moon, catching any type of Hilsa is prohibited. This system was initiated for the undisturbed breeding of Hilsa. Besides fishing, selling, transporting and hoarding of Hilsa less than 23 cm long Hilsa is prohibited. Bottom trawling is prohibited up to 12 nautical miles from the coastline. Accepting that the ban is not obeyed by some fishers, State Fisheries Minister Chandranath Sinha told [thethirdpole.net](http://thethirdpole.net), "We try to teach about all kinds of fish under an awareness campaign for fishers.

We hold seminars and open discussions with the marine and river fisher organisations. Most of the fishers obey the ban but some do not. Sinha said the Panchayats of the villages on the banks of the Ganga have been helping implement the ban on catching juvenile Hilsa. But fisherman Dipankar Roy narrates a different story. He fishes with a small boat round the year in the Ganga near Barrackpore (25 km upstream of Kolkata). In his words, "I catch fish in the Ganga throughout the year. There are Hilsas also. Currently nets with very small mesh holes are used in large numbers. Some boats often hunt Hilsa weighing 8 to 10 grams, catching up to 6 kg in a day. Fishers know very well that the surveillance is inadequate.

Some fishers use funnel-shaped nets (Binati Jal) to catch juvenile Hilsa and selling it in the name of Khoyra fish. In Digha estuary, this fishing of juvenile Hilsa is evident. If 500 kg of Hilsa is caught, 300 of that weighs 150 to 300 grams, all juvenile fish. A mature Hilsa weighs between 700 grams and a kilogramme. Unapologetic trawler owners In the Bay of Bengal, fishing goes on throughout the year, ignoring government restrictions. Almost admitting this, the secretary of the trawler owners' organisation United Fishermen's Association Shyamsundar Das told [thethirdpole.net](http://thethirdpole.net), "Fish weighing below 300 grams may be hunted, but that does not matter. One

Hilsa gives birth to some hundred thousand babies. However, we try to observe the prohibition on juvenile Hilsa.

Further charges against the big trawlers are that they bring up all types of fish through bottom trawling. Catches of juvenile Hilsa weighing less than 10 grams are thrown back into the sea. The fish is being destroyed in this way. Das says, “We have got the modern instruments and how is it possible that those will not be used? At the same time, he accepts the need for the ban, and even wants it extended to the coast off adjacent state Odisha as well as the markets there. “Otherwise, nothing can be done. When sale of juvenile Hilsa is stopped at Digha market (in West Bengal), it goes to the Odisha markets. Then it reaches the markets of Kolkata.

Artisanal fishers suffer Artisanal fishers have a different take than the trawler owners. The joint secretary of small fishers' organisation South Bengal Fishermen Forum, Debashis Shyamal, told thethirdpole.net, “Destructive fishing and trawl fishing hampers Hilsa in the state. Not only Hilsa, but all kinds of fish are declining due to uncontrolled fishing. We the small fishers try to obey the ban. But the big trawlers can break all the rules with the power of their political connections. It has been a longstanding allegation in all coastal states of India that trawlers are owned by politicians and their kin, directly or anonymously. Shyamal recommended that Bangladesh and India coordinate their Hilsa fishing ban periods and hold joint surveillance to ensure compliance.

Blocked path, dirty water Apart from overfishing, a big problem for the migrating Hilsa is siltation at the mouth of the Ganga. This sea fish needs a clean and deep channel so that it can move upriver and spawn. But now there is no deep channel in the mouth of the Ganga except the one kept open by constant dredging, for the shipping to and from Kolkata port. And not a single channel – deep or shallow – has any clean water. The pollution in the Lower Ganga is largely unchecked, and the bacterium E Coli (which causes diarrhoea or worse) has been counted at a million times the safe limit prescribed by the World Health Organisation. That, and an overall lack of fresh water due to dams and barrages upstream in the Ganga basin, has a highly adverse effect on the reproduction of the Hilsa. The increasing salinity of the estuary is an added cause. The Hilsa looks for fresh water to spawn, but does not find any. Changed life Asimkumar Nath, a fisheries expert in Sidho Kanhu Birsra University of West Bengal, has found another effect of this forced change in the life cycle of the Hilsa.

Due to siltation, many fish find their way back to the sea blocked. Studies that include tagging some Hilsa have shown that some have remained in the Ganga and its tributaries for the last several years. He said some such “resident Hilsa have been found as far upstream as Farakka, over 350 km from the mouth of the Ganga. Nath is confident that even if 20% of the Hilsa living and breeding in the rivers can be saved from overfishing, there will be no shortage of the fish in West Bengal. Protection plans Though its current plans to protect the Hilsa are yielding limited results, the West Bengal government has new plans to protect the fish. Fisheries Minister Sinha

said his department has identified three spawning areas that will be declared sanctuaries. “Special monitoring will be arranged in Raichak-Godakhali, Tribeni-Balagarh and Lalbag-Farakka, he told thethirdpole.net. “Hilsa lays eggs in those places. Hilsa Research centres will also be built there.

The minister said scientists are trying to breed Hilsa in ponds. “The Hilsa Conservation and Research Centre (HCRC) in Diamond Harbour will move that work forward. Nofima, a Norwegian institute for food, fisheries and aquaculture research, will work with HCRC. Nofima has been working on salmon production for 45 years and they have expertise in aquaculture. Central Inland Fisheries Research Institute (CIFRI) is also a partner in this project. Six water bodies have been identified in Falta near Raichak and East Kolkata Wetland to conduct the research. Nath says, “There is no necessity to spend a huge amount of money to artificially breed Hilsa in ponds, if the juvenile [fish] are saved by increasing surveillance.

### **West Bengal: DMF Calls Upon the Small Scale Fishing Communities to Rise Up and Build Invincible Resistance Reclaim Right to Water and Fish Resources**

"Dakshinbanga Matsyajibi Forum (DMF) alongwith fish workers and their organisations all over the world is celebrating World Fisheries Day 2018 on 21st November 2018 with both enthusiasm and determination. This year the World Fisheries Day is being celebrated by DMF at more than 24 fishing community hubs across 10 districts of West Bengal. Every year November 21st has been celebrated all over the world as World Fisheries Day to commemorate the establishment of World Forum for Fisher People (WFFP) in 1997 by Father Thomas Kochery and Harekrishna Debnath, two legendary leaders of fishing communities. Every year on 21st November the fisher people celebrate their identity, unity and achievements as a community as well as proclaim their determination to Save Water, Save Fish and Save Fisher People.

This year the World Fisheries Day is going to be celebrated in India at a time when – - Due to the policies of the Government favouring large scale investment in fishing our seas are experiencing over and destructive fishing by mechanised fishing boats and small scale fishers are left with almost no fish; - Sagarmala Project by the Government of India is going to evict the traditional small scale fishing communities from the coast with establishment of large number of ports; - Proposed Coastal Regulation Zone Notification 2018 has been published by the Government of India with a view to further open up the coast to massive investment and utilisation destroying the habitats and livelihood options of indigenous coastal communities including fishing communities; - West Coast Shipping Corridor announced by the Government of India is going to prohibit fishing communities from 85,000 square kilometres of fishing area on the West Coast; - Deep sea port, marine drives and large scale tourism are threatening the small scale coastal fishing communities with eviction and loss of livelihood; - ‘Blue Revolution’ initiated by the Government of India promotes investment driven production increase in fisheries that is replacing the traditional fishing communities by a new breed of entrepreneurs. - The

small and traditional fishing communities of Sundarban and other protected areas are deprived of their right to fish in the waters of the protected areas. Dakshinbanga Matsyajibi Forum (DMF) calls upon all small scale fishing communities to celebrate World Fisheries Day 2018 on 21st November to commemorate glorious movements of the community and vow to build up invincible collective resistance to – Save Water, Save Fish, Save Fisher People.

### **West Bengal: Fishermen forum to protest against Centre's policies**

<http://www.millenniumpost.in/kolkata/fishermen-forum-to-protest-against-centres-policies-327913>

"The National Fishworkers' Forum (NFF) along with other fish workers' organisations will organise a movement in the coastal areas of the state on November 21 on the occasion of World Fisheries Day to protest against various policies of the Centre. Debasis Shyamal, general secretary of National Fishworkers' Forum (NFF) said Center's various policies favour large-scale investors at the cost of traditional fishing community and mechanised fishing boats have been affecting small scale fishermen. He also voiced his protest by saying that the Sagarmala Project is going to evict the traditional small scale fishing communities from the coastal areas. The proposed Coastal Regulation Zone Notification 2018 has been published by the Government of India with a view to further open up the coast to massive investment.

The Centre has also announced about the West Coast Shipping Corridor that will prohibit fishing along the 85,000 square kilometre of sea waters in the West Coast, Shyamal maintained. Apart from Bengal, the NFF will also organise protest movement in 10 other coastal states across the country, besides celebrating the World Fisheries Day. November 21 is celebrated all over the world as World Fisheries Day to commemorate the establishment of World Forum for Fisher People (WFFP) in 1997. This year as well fishermen from various organisations will celebrate the day to commemorate glorious movements of the community and take a vow to build up invincible collective resistance against the implementation of various policies by the Centre. The theme of this year's celebration is ""save water, save fish, save fishing people"".

### **West Bengal: Skilling the Fishermen**

<https://www.ruralmarketing.in/industry/case-studies/skilling-the-fishermen>

"Indian fisheries and aquaculture is an important sector of food production, providing nutritional security to the food basket, contributing to agricultural exports and engaging about 14 million people in different activities. With diverse resources ranging from deep seas to lakes in

the mountains, and more than 10 percent of the global biodiversity in terms of fish and shellfish species, the country has shown continuous and sustained increments in fish production since independence. According to National Fisheries Development Board, constituting about 6.3 percent of the global fish production, the sector contributes to 1.1 percent of the GDP and 5.15 percent of the agricultural GDP. West Bengal is bestowed with all types of fishery resources of immense potential, spread over the state, from the marine jurisdiction in the Bay of Bengal in South India to the cold water region at the base of the Himalayas in North India. As per Government of India figures, fish and fish products have presently emerged as the largest group in agricultural exports of India, with 10.51 lakh tonnes in terms of quantity and Rs. 33,442 crores in value. This accounts for around 10 percent of the total exports of the country and nearly 20 percent of the agricultural exports.

The National Fisheries Development Board (NFDB) is an autonomous organisation under the administrative control of the Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture and Farmers Welfare, Government of India. With an aim to enhance fish production and productivity in the country and to coordinate fishery development in an integrated and holistic manner, NFDB conceptualised the Recognition of Prior Learning (RPL) Programme in Marine Capture Fisherman cum Primary Processor and Aquaculture Worker Job Roles to benefit fish farmers in West Bengal. Recognition of Prior Learning (RPL) is a platform to provide recognition to informal learning or learning through work, to get equal acceptance as the formal levels of education. It aims to appreciate prior learning, irrespective of the medium of achieving it. Agriculture Skill Council of India (ASCI), under the aegis of Ministry of Skill Development & Entrepreneurship (MSDE), works towards capacity building by bridging gaps and upgrading skills of farmers, wage workers, self-employed and extension workers, engaged in organised and unorganised segments of agriculture and allied sectors.

ASCI will certify the candidates after the successful completion of assessment tests for candidates under the NFDB RPL programme. NFDB is providing financial assistance for conducting RPL programme for fish farmers based on QP's approved by ASCI. Sabiruddin Gazi, a resident of Basuldanga, Diamond Harbour, South 24 Praganas in West Bengal, is an aquaculture worker since 2014, earning a monthly remuneration of Rs. 15,000, says "In my family there are 5 members. I took ponds on rent and started fishing with a few ponds; now I am having 16 ponds. During the training, I learnt about fish feed and its importance, types of diseases associated with fish, and how to gain profit by using latest techniques during fishing. Adds Mintu Kayal from Kakdwip, who is a marine capture fisherman cum primary processor, working since 2001, "I have a rich experience in marine capture, but some of the aspects, which I ignored during the fishing at marine such as the importance and usage of safety devices, were reiterated during the training. Besides, I learnt about different types of devices used in marine.

"I believe that agriculture skills can play an instrumental role in shaping the growth trajectory of the country, especially for those living at the fringes of social growth and development. Such

initiatives empower them to grow from being an unskilled workforce to skilled fishermen and yield impact through improvement in income and standard of living, not only for individuals but also their families and communities," explains SS Arya, CEO, Agriculture Skill Council of India. In West Bengal, IL&FS Skills, under the mandate, Recognition of Prior Learning, will train 2500 fish farmers across diverse locations, namely: South 24 Parganas, North 24 Parganas, Murshidabad, Purba Medinipur and Howrah districts. "IL&FS Skills has skilled more than 1.6 million people across manufacturing, engineering, construction and service sectors pan India. Our placement linked and upskilling training programmes link youth with employment or opportunities of self-employment. We have been working with the Agriculture Skills Council of India, and over the years, have implemented various programmes for fresh skilling and upskilling of youth in trades likes dairy farmer entrepreneur, tuber crop cultivator, maize cultivator, organic grower, animal health worker, quality seed grower, micro irrigation technician, gardener among other related works, says Ketul Acharya, COO. & Group Head, IL&FS Skills. "These programmes focus on enhancing the career and employability opportunities of an individual as well as provide alternative routes to higher education. It also envisages providing opportunities for reducing inequalities based on privileging certain forms of knowledge over others," Acharya adds.

### **India: Karnataka to West Bengal: How climate change is ravaging India's coastline**

[https://www.business-standard.com/article/current-affairs/karnataka-to-west-bengal-how-climate-change-is-ravaging-india-s-coastline-118111700272\\_1.html](https://www.business-standard.com/article/current-affairs/karnataka-to-west-bengal-how-climate-change-is-ravaging-india-s-coastline-118111700272_1.html)

"First, in 2011, the sea took away some of their land. Three years later, the waves demolished a section of their home. That is when Budhwant Karvi, 40, knew it was time to move but his elderly parents refused. "They said we have lived here for generations and will continue to do so, said Karvi, a worker on a fishing trawler that sails the Arabian sea. Karvi's home is in Pavinakurve, a village along the scenic Honnavar coast with blue waters reflecting the sky in Western Karnataka. The view from the home was once a narrow strip of sandy beach and the vast Arabian sea. On the right is the island of Basavaraj Durga, a popular tourist destination. The view from Pavinakurve and the island of Basavaraj Durga in northwestern Karnataka.

The sandy beaches of Pavinarkurve are being steadily eroded. Seven years ago, the waves began to crash against the walls of Karvi's home made of red, large bricks. "At times the waves would completely wash over our home and leave behind plastic bottles that were discarded in the sea by people, Karvi said, pointing to the waste bottles on the land. Soon the sandy strip of the beach went under water. Then one by one the sea swallowed six guntas (1/7th of an acre) of the land the family owned, roughly six times the size of an average two-bedroom flat. Millions living on India's coasts are threatened as India has lost 33% of its coastline to erosion in 26 years between 1990 and 2006, according to a report released in July 2018 by the National Centre for Coastal

Research (NCCR) in Chennai, which is mapping changes to India's shoreline, and is affiliated to the Ministry of Earth Sciences.

This is the second story in our series on how climate change is disrupting people's lives (you can read the first part here). The series combines ground reporting from India's climate change hotspots with the latest scientific research. India has a coastline of 7,500 km--nearly three-and-a-half times the distance between Ahmedabad and Kolkata--divided almost equally on the east and the west of the country. Along it are nine states, two union territories (UT) and two island territories. Of the country's 1.28 billion people, 560 million, or 43%, live within these coastal territories. Of the coastline that is eroding, 40% is in four states/UTs alone. West Bengal has lost 99 sq km of land in the past 26 years, making up 63% of the state's coastline and equivalent to the area occupied by 18,500 football fields. Puducherry has lost 57% of its coastline, Kerala 45%, and Tamil Nadu 41%, to heavy erosion.

India's coasts are under attack both from man-made activities--such as growing construction, damming of rivers, sand mining and destruction of mangroves--as well as natural causes linked to climate change such as rising sea levels, according to the report. Growing construction, rising temperature, threatens coastline India has 5,264 large dams and another 437 dams are currently under construction, according to the Central Water Commission (CWC). Of these, the highest--2,354--are in Maharashtra, followed by Madhya Pradesh (906) and Gujarat (632). These dams starve the coasts of sediments that the rivers would otherwise carry, disturbing the natural equilibrium.

Then, there are 13 major ports, 46 fishing harbour and 187 minor ports on the coast for the building and maintenance of which sediments are regularly removed. This sediment is rarely ever returned to the coast. All this has left India's coasts vulnerable to the full impact of climate change. "Climate change is making weather systems in the Bay of Bengal erratic, said M. V. Ramana Murthy, director of NCCR. "We have some evidence for sea level rise. The Lakshadweep lagoons, which are enclosed water bodies, are also getting eroded because of sea level rise. Global warming will cause the sea levels to rise well beyond the year 2100. This rise could be as much as the height of a 500 ml bottle of coke to the height of four such bottles put together if global warming raises temperatures by 1.5 degree Celsius. If the Earth warms beyond this, the rise in sea level could be even more, according to the latest report by United Nations' Intergovernmental Panel on Climate Change released in October this year.

Rising sea levels are predicted to disproportionately affect fishermen like Karvi and farmers owning fields along the coast. In the past two years, Karvi's entire home was ravaged by the sea. Even as his parents refused to move, Karvi and his siblings moved away with their families in tow. They now live in rented homes. With the little money they had, they constructed a two-room mud home with no windows and a roof so low that one has to bend to enter, where their parents lived till their death in 2017. Soon after, the waves began to cross the stone wall built by

the government and gnaw at the remains of their old home, now reduced to rubble. The Karvis return to the old house, now reduced to debris, on special occasions. There is a tulsi plant outside that Karvi returned to on the day of Dussehra to offer prayers. In Honnavar, the only asset those like Karvi have, are their homes and their land. With the sea swallowing up both, Karvi and his siblings have nothing left.

In Pavinakurve village, many high yielding paddy fields along the coast are no longer suitable for agriculture as crops don't grow in soil contaminated with the salty sea water. The waves are only expected to rise higher as climate change causes changes in wind speeds. In the next three decades, coastal erosion will occur 1.5 times faster than the past three decades, according to a 2016 joint study by researchers of the Indian Institute of Technology in Mumbai and the National Centre for Earth Sciences Studies in Thiruvananthapuram, Kerala. Walls to fight waves many countries, including India, have responded to this challenge by building hard engineering structures such as walls or bunds along the coastline. These are just a short-term solution, said Prasanna Patgar, regional director for environment for Karwar district, that also oversees Honnavar.

They also might redirect the waves and cause another area along the coast to erode. Worse, as the sand below them shifts, the walls sink. At the moment, state governments are spending hundreds of crores of taxpayers' money to construct walls which get eroded in a few years. But, why? "People want immediate solution and building a wall is one, Patgar explained. As waves erode wealth accumulated over a lifetime, people panic and administrators are pressured to offer a quick fix. Other alternatives that work, such as mangroves, are either too expensive or time consuming. Natural barriers are most effective against coastal erosion. They take years to establish themselves and become effective.

Mangroves go a long way to reduce wind speeds and the swell of waves during storm surges. They bind the sand together and arrest erosion. "There is also the thermodynamic shelterbelt model in which four levels of vegetation are planted, Patgar explained. "Grass is planted closer towards the sea, followed by shrubs, herbs and finally the trees. But these plants take 5-10 years to establish and become effective. Another option that has worked on a 40 km stretch off the Puducherry coast is a structure based on the erosion patterns and requirements of the particular stretch. "We brought back the sediment naturally by building a submerged structure that mimics how coral reefs protect an island, Murthy explained.

Carrying out a scientific study for the 40 km stretch and coming up with the best design for the structure cost Rs 50 lakh. To do that along India's 7,500 km coastline would be too expensive. Even if the money was found, there aren't as many experts as would be needed to study the entire coastline. A coastline in distress Coastal erosion hotspots are spread all along India's coastline. There are several hotspots along the Kerala coastline, recently left devastated by floods, according to a 2015 study. Areas nearly 2 km inland were found to be eroded. The Tamil Nadu

coast is also impacted by erosion, but the eastern coast, around the Bay of Bengal, is the worst affected. Low and moderate erosion spots along India's coastline. Source: National Assessment of Shoreline Changes along Indian Coast; July 2018. Apart from increasing sea levels, climate change is also going to change weather patterns along the coast. “The intensity and the number of tropical storms, called cyclones, in India are likely to increase in coastal areas, said Gerd Masselink, professor of Coastal Geomorphology at the University of Plymouth, in the United Kingdom.

“The effect will depend on where you are on the globe. Some areas might become less stormy and other areas might become more stormy. “There can be changes in the wave direction as the climate changes. This might change the longshore sediment transport, which is movement of sand along the beach, Masselink added. Some coastal areas are likely to flood more and global warming will cause the water temperatures to rise. All these changes will have a direct impact on the production of fish and consequently those, like Karvi, who depend on it for a living. TH Nayak's extended family owned land on the Pavinakurve island (in background), which has now been eroded by the Arabian Sea in northwestern Karnataka.

Standing at the edge of Karki village in Honnavar, TH Nayak, 74, points to the expanse of the Arabian sea. “We had relatives living on the stretch of land there. Now it is all under water, said the former Karnataka bureaucrat. His home was nearly 5 km away from the sea. Between the sea and his home shielded by Pavinakurve was an estuary. “It was so shallow that we could walk across it, he said. In the last few decades, the entire topography of the area has changed. Left: The mouth of the Sharavathi River has moved over 4 km from Kasarkod (south) to opposite Karki village (north). Right: A 1932 map of the same region that shows the position of the mouth of the Sharavathi River. The island of Pavinkurve is a longer stretch of land and Karki village merely had a stream in front of it, instead of the Arabian Sea Karki village now overlooks the mouth of the Sharavathi River which merges into the Arabian Sea.

When Nayak was growing up, the mouth of the river was several kilometres away near the neighbouring Kasarkod village. “Coastal erosion is a natural process but the rate at which the erosion is happening here has accelerated over the past few decades, explained marine biologist Prakash Mesta, of the Centre for Ecological Sciences in Kumta, who is currently working on a project on coastal ecology and global warming. While land from one side of the river mouth is going under water, new land is emerging on the other side. This process is called accretion. Nearly 29% of India's overall coastline is accreting, according to the NCCR report. Odisha (51%) and Andhra Pradesh (42%) have seen a maximum increase in their coastline. While the island of Pavinakurve (on the left) is losing land to erosion, new land is being formed on the island of Kasarkod (right) due to deposition of sediments called accretion. The new land goes to the government and not the ones who lost their land to erosion. While Karvi and Nayak are losing their land due to erosion and not being compensated for it, the new land the sea throws up goes to the government.

“Climate change along the coast has affected the livelihoods of the fishermen community. The new land can go to them to make up for the land they have lost, said Ramachandra Bhatta, former professor of Fisheries Economics at the College of Fisheries in Mangalore. “If the government does a risk assessment study and offers them an insurance cover, the fishermen will not need to go begging to the authorities after every disaster, the frequency of which will only increase going forward, said Bhatta, explaining that the government has yet to conduct such a risk assessment. Human activities worsen natural erosion for over two decades, Aurofilio Schiavina, co-founder of Pondicherry Citizen's Action Network (PondyCAN), has been watching the beaches of Pondicherry disappear due to erosion. While he agrees climate change is a factor, he highlights the need to check man-made structures like building coastal walls, dams, as well as illegal activities like sand mining.

At Honnavar, for instance, locals revealed a kilogram of sand sells for Rs 5 and the sand mafia routinely take away truckloads of sand from the beach. Schiavina also agreed with the decision recalling the proposal to build a wall from Chennai to Kanyakumari right after the tsunami struck in 2004. “The damage that would have done in ten years would be more than what climate change would have done in decades, Schiavina said. “We need policies rooted in science, he added. New rules on coastal regulation unscientific Avoiding construction close to the coast is one of the easiest steps to take, according to scientists.

The technical knowledge to identify areas that are at risk of erosion is available. “People think erosion is always bad thing, but erosion at one location causes sedimentation somewhere else, Masselink said. “A heavily managed coastline, for example a beach with a seawall, cannot adapt very well to climate change impacts and requires constant attention, whereas a natural coastline, or one that is managed using more sustainable methods on management such as nourishment, can naturally adapt to climate change impacts. Any sand taken away from the coast needs to be replaced, added Murthy.

“We need at least 100 metres of space along the coast. The government, though, has other plans. In April this year, a new coastal regulatory zone draft was released in which the No Development Zone (NDZ) around coastal areas was reduced from 100 mt to 50 mt allowing for more construction along the coast in rural areas--the opposite of what scientists advise. Coasts in urban areas don't have NDZ at all. The move is being hailed as one meant to benefit builders. And what's our defence against climate change? “There is no way other than being vigilant, said Murthy. Full report is available at: National Assessment of Shoreline changes along Indian Coast 1990-2016.

### **West Bengal: Fishes bite into Bhai Phonta pockets**

<https://m.telegraphindia.com/states/west-bengal/fishes-bite-into-bhai-phonta-pockets/cid/1674487>

"Hilsa sold at Rs 1,500 a kilo at Gariahat, Maniktala and other markets in the city on Thursday. Topshe cost Rs 750 and parshe Rs 500 plus. A day before Bhai Phonta, the price of Bengal's favourite fishes soared across the markets but still found takers. Most varieties of fish in the market have become costlier by at least Rs 100 a kilo since last week. Hilsa, on its way out for this year, has seen a steeper rise, fish sellers said. Tarun Parui, a businessman from Howrah, bought a 1.25kg hilsa from Maniktala on Thursday evening. "I was in two minds over hilsa and mutton. But when the fish seller said the hilsa was from Bangladesh, it was a no-brainer, said Parui, who will host his brother-in-law for lunch on Friday.

"I get treated to a lavish feast on Jamai Sashti at my in-laws' place every year. Bhai Phonta is when I get to play host and I don't want a loss of face, said Parui, a regular at Maniktala. He also bought lobsters for Rs 600 a kilo. Bacchu Pramanik, a fish seller at Maniktala, said apart from hilsa and prawn, topshe, parshe and pomfret were the hot selling items. Pratima Roy bought topshe and parshe from Gariahat, for Rs 750 and Rs 500 a kilo respectively. Also on her shopping list was mutton. "I like to cook for my brothers on Bhai Phonta, said Roy, 49, a Bengali teacher at a government school. A group of three sisters came looking for katla, lobsters, pabda and topshe at the Gariahat market on Thursday morning. "We have a grand family feast on Bhai Phonta every year. We have two cousins who come with their families, said Tulika Bandopadhyaya, 40, the elder sister.

### **West Bengal: Water resources ministry turns focus on improving Hilsa population**

<https://www.tribuneindia.com/news/nation/water-resources-ministry-turns-focus-on-improving-hilsa-population/678754.html>

"In a bid to improve the fauna relating to the Ganges, the Water Resources Ministry has turned its focus on improving population of Hilsa -- a high pedigree and arguably East Asia's most prized fish, which has declined due to obstruction to their migration from Bay of Bengal into the river to breed. The obstruction is on account of Farakka barrage commissioned in 1975 on the Hoogly, a branch of the Ganges, in West Bengal. The dwindling migration has been a cause for concern among policy makers at the Centre, and the governments in the Ganges' five basin states which comprise Uttarakhand, Uttar Pradesh, West Bengal, Bihar and Jharkhand. The National Mission for Clean Ganga (NMCG), a nodal body of Water Resources Ministry with regard to

“Namami Gange project, has approved two projects worth Rs 50 crore for West Bengal, including for Hilsa fisheries improvement at Farakka barrage.

“Implementation of the fishery project will increase the natural stock of Hilsa in the river Ganga, upstream of Farakka barrage through ranching of wild collected Hilsa seed/juveniles, the Ministry said. The project includes study and monitoring Hilsa migration across the barrage in the main river Ganga. Hilsa is a salt water fish, but migrates to sweet waters of the Ganges from the Bay of Bengal (the river drains in it). It travels upstream of the river during the mating seasons and returns to its natural abode after spawning. The hatchlings also head to marine water, and the cycle goes on. The breeding season happens thrice a year, the most intense being the monsoon season when the river is in full flow. The Central Inland Fisheries Research Institute (CIFRI) in one of its report on the status of Hilsa in the Hoogly-Bhagirathi river said they used to migrate up to Agra and Kanpur in years of abundance, while in normal years, the fish used to migrate up to Allahabad and further up a distance of about 1,700-1,800 km. It added that following commissioning of the barrage Hilsa fisheries upstream of barrage have been negligible in most of the fish land centres.

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### **West Bengal: Fishermen protest merchant shipping corridor**

<https://www.thestatesman.com/cities/fishermen-protest-merchant-shipping-corridor-1502703043.html>

"The fishermen community belonging to different organisations in the state came together on Tuesday to protest against the proposed Merchant Shipping Corridor (MSC) along the coastal regions of the country, expected to paralyse the fishing industry in West Bengal as well. The protesting fishermen, whose livelihood is mainly dependant on marine fish, demanded withdrawal of the MSC project of the central government, which is presently underway from the West Coast up to some distance beyond Kanyakumari. The stretch meant only for merchant ships, however, is soon to be extended till the Eastern Coast, covering parts of West Bengal, including Tajpur in East Midnapore where mapping work has already been started. According to members of the Dakshinbanga Matsyajibi Forum (DMF), one of the major fishermen associations in the state, the proposed shipping corridor will mean confinement of fishing activities within 15 nautical miles or 27.78km from the coast.

Beyond this stretch, the proposed corridor of 20 nautical miles or 37.04 km wide will be used by merchant ships only and fishing activities would be strictly prohibited. As this part of the coastline harbours most of the marine fish of various edible species, the fishing industry along the corridor is expected to be affected badly. "The project will hit the livelihood of 1.4 lakh fishermen in the state who are fully dependent on this marine stretch for their livelihood, said Milan Das, general secretary of DMF.

"The corridor if it materialises will also destroy the marine ecological balance in the Sunderbans, where lakhs of people are directly or indirectly dependent on this portion of the sea, he added. Underscoring how the development projects in the coastal areas are adversely affecting the fishermen, Debashish Shyamal, member of National Fishworkers' Forum, said: "The development of a deep sea port at Tajpur, and other places under the Sagarmala Project, will mean that not only will the corridor be used by the ships, but also the inner coastline will be occupied with commercial activities. Such extensive industrial use of the part of the sea which accommodates the maximum percentage of useful marine organisms, will not only destroy the marine life but will also take away the livelihood of about 80 per cent of fishermen in the state and four crore fishermen along the MSC.

"A letter has been sent to the Centre on 10 September and a memorandum has been filed with the state government today. However, the state government instead of solving our problems of

livelihood is working in close association with the Centre. The state fisheries minister denied getting any formal intimation on the issue.

### **West Bengal: Cultivates 3 new fish varieties, to go commercial early next year**

<https://timesofindia.indiatimes.com/city/kolkata/west-bengal-cultivates-3-new-fish-varieties-to-go-commercial-early-next-year/articleshow/66410283.cms>

"Your fish platter will soon get three new varieties. The State Fisheries Development Corporation (SFDC) has started cultivating Thai Sarputi, Indian Pompano and Gulas Tangra fish that will be commercially introduced in the markets early next year. SFDC officials said that the fingerlings of these three fishes have already been released in different waterbodies owned by the authorities at Nalban, Goltala and Henry's island in South 24 Parganas for cultivation. "While a Thai Sarputi grows for about four to six months, the same period for Gulas Tangra and Indian Pompano is six to eight months and six to seven months, respectively, he added. Officials said that Thai Sarputi is a substitute of the desi punti fish, with a bigger size and cheaper price. Gulas Tangra substitutes the local tangra and the Indian Pompano is a substitute of the pomfret and silver pompano.

"While Gulas Tangra and Thai Sarputi are being cultured in the sewage fed water of Nalban and in Goltala, Indian Pompano is being cultured in the waterbodies of Henry's Island, said an official. Officials said that initially, SFDC would start selling the fishes, both raw and cooked, from its stalls and mobile vending outlets across the city. "They will also be sold through our app via which customers are already receiving fish they want to have at their doorsteps, he added. Once the trial run is completed and the demand shoots up, the varieties would be placed at the auction market for fish vendors, who will buy them for commercial selling in the retail markets. While the price for Thai Sarputi will be around Rs 150 per kg, the price range for Gulas Tangra and Indian Pompano will be Rs 180 to Rs 200 and Rs 280 to Rs 300, respectively.

SFDC is taking technical help from the Central Marine Fisheries Research Institute and the Inland Fisheries Research Institute for cultivating the three varieties of fish at the SFDC-owned waterbodies. While the fingerlings of Indian Pompano has been supplied by the Central Marine Fisheries Research Institute, the fingerlings of other two species have been given by the Central Inland Fisheries Research Institute. SFDC is also aqua hubs in different waterbodies that they are taking over. "It's a concept where both fish farming and selling of cooked fish will take place, an official said. The authorities are also planning to increase fish cultivation activities by utilising the waterbodies lying unused at Digha.

### **West Bengal: Tiger kills fisherman**

[https://www.business-standard.com/article/pti-stories/tiger-kills-fisherman-in-west-bengal-118102401188\\_1.html](https://www.business-standard.com/article/pti-stories/tiger-kills-fisherman-in-west-bengal-118102401188_1.html)

"A fisherman was mauled to death by an adult Royal Bengal Tiger at Pirkhali forest in West Bengal's South 24 Parganas district Wednesday, the police said. The incident took place at Bally-Satyanarayanpur under Gosaba area in the Sundarbans, where a group of three fishermen had gone to catch crabs. Early Wednesday morning, the tiger attacked 42-year-old Madhu Mondal at Pirkhali forest injuring him severely. When companions of Mondal chased the Tiger, it left the injured Mondal and disappeared in the jungle. Mondal was rushed to nearby Gosaba hospital, where doctors declared him 'dead', the police said. In another incident, two girls drowned in a pond at Sitagachi village in the district Wednesday, police said. The two girls had gone to the pond for a bath and slipped and drowned, they said.

### **West Bengal: DMF welcomes landmark judgement to save east Kolkata wetlands**

"In a landmark order, the east zone bench of National Green Tribunal gave Nabadiganta Industrial Township Authority (NDITA) and Vaidic Dharma Sansthan 30 days to remove encroachments in the East Kolkata Wetlands or face a penalty of Rs 50 lakh each with further fine of Rs 50,000 per day for any delay in implementing the order. The court also warned that it was reserving the right to pass appropriate orders on officials responsible for noncompliance as per provisions of the law. NGT had a year ago passed an order for removal of a road that was built around MunshirBheri in Salt Lake Sector V by NDITA as well as the three-storied, 60-ft tall building named Temple of Knowledge by Vaidic Dharma Sansthan, an organisation affiliated to spiritual guru Sri Sri Ravi Shankar. Environmental action group PUBLIC had filed a petition in 2016 on the blatant violations in East Kolkata Wetlands, an internationally recognised Ramsar site that enjoys protection under a 1992 Calcutta high court order as well as multiple legislations.

PUBLIC had pointed out that neither the private organisation, nor the government body, had sought permission from East Kolkata Wetlands Management Authority (EKWMA) for construction. According to PUBLIC, both of them had violated the East Kolkata Wetlands Act, which prevents change in existing land use. The NGT, hearing the matter over video conference from Delhi, appeared to be upset over the deadline misses. Under the Act, government officials at fault can even be given a prison sentence. Dakshinbanga Matsyajibi Forum (DMF) welcomes the judgement and congratulates PUBLIC for their efforts. East Kolkata Wetlands provide livelihood to thousands of fishers and their livelihood is being threatened by the encroachments. DMF also takes this opportunity to remember the invaluable contributions of Late Dr. Dhrubajyoti Ghosh, who relentlessly fought to protect the East Kolkata Wetlands and has been responsible for its declaration as a Ramsar Site.

### **West Bengal: For the first time in India, pen culture in wetlands to take place in Bengal**

<http://www.uniindia.com/for-the-first-time-in-india-pen-culture-in-wetlands-to-take-place-in-bengal/states/news/1370960.html>

"Keeping in line with numerous success of the West Bengal Government in the cultivation of fish, the National Fisheries Development Board has selected the state for the first pen culture of fish in wetlands in India. The Fisheries Department is now the leading innovator in fish culture in the country. Among its numerous successes is the culture of fish in the East Kolkata Wetlands. Keeping this success in mind, the pen culture project has also been decided to be held at the at the East Kolkata Wetlands, at the section in Goltala near Dhapa. The State Fisheries Development Corporation (SFDC) will be in charge of the project. Depending on the success of the project here, this type of culture will be started in other states.

### **West Bengal: A study of bacteria in the Sundarbans has implications for conservation of the mangrove system**

<https://scroll.in/article/894943/a-study-of-bacteria-in-the-sundarbans-has-implications-for-conservation-of-the-mangrove-system>

"They may be microscopic in size, but bacterioplankton steer major carbon cycling and food webs in aquatic ecosystems. Bacterioplankton are the bacterial component of plankton that live in water bodies, including oceans and lakes. Now, scientists at the Indian Institute of Science Education and Research Kolkata are keeping an eye out for bacterioplankton and how they chow down and use carbon, in the world's largest delta, the Sundarbans, to track changes in freshwater flow that could have implications for the sustainability of coastal fisheries. Explaining the premise for this microbe-based monitoring, they reason that when environmental parameters change (such as influx of fresh or saline water), it throws the existing bacterial community structure into turmoil. This disturbance, in turn, shapes up how nutrients are broken down in the system and made available through the food chain to the organisms higher up in the web, such as fish.

Aiding the team in their observations is a time series, the Sundarbans Biological Observatory Time Series, which maps data monthly to pinpoint trends in the health of the Sundarbans ecosystem. "Understanding elemental cycling [such as carbon cycling] is a good way to understand the health of the ecosystem. I believe this is the only mangrove time series in India if not in Asia, Punyasloke Bhadury of the Centre for Climate and Environmental Studies at the Kolkata institute told Mongabay-India. The Sundarbans study Spread out across 10,000 square km, the Sundarbans, the largest single-track mangroves in the world, lies in the Ganga-Brahmaputra-Meghna delta and is shared by India and Bangladesh. This mangrove ecosystem encompasses over 102 islands in the Indian side (in the state of West Bengal) with a network of innumerable rivers, rivulets and creeks.

The study stations for the time series are located in the 223.4-square-km Sagar Island, the largest compact island of the Sundarbans that sits at the confluence of the Hooghly river (a branch of the Ganga) and the Bay of Bengal. The shrinking island lies 6.7 metres above sea level and is

battling soil erosion, breach of embankments and loss of landmass and rising sea levels. “Based on our preliminary studies, we believe that freshwater flow in the Sundarbans [at Sagar] is now starting to change and these changes are now starting to show clearly through the level of changes happening at the bacterial community structures, Bhadury said on the sidelines of the international Land-Ocean-Atmosphere workshop. At this year's workshop, convened by Bhadury at the institute, it was discussed how understanding land-ocean-atmosphere interactions aids in management of terrestrial and coastal resources nationally to maximise benefits to people's livelihood as well as environmental protection.

A key example of such dynamics, said Bhadury and colleague Anwasha Ghosh, is the land-ocean boundary-based coastal ecosystem in the Sundarbans, a region that experiences the third largest river discharge in the world through the Ganga-Brahmaputra-Meghna outflow. The Indian Sundarbans archipelago acts as the “nursery for nearly 90% of the aquatic species of the eastern coast of India. In Sagar, fisheries rank second after agriculture in terms of livelihood. Based on their research, the scientists say they now have some idea of how carbon cycling is taking place in the system and that the system in the Sagar Island is now “probably transitioning to a marine system from an estuarine system.

“The reason why we set up monthly monitoring since 2010 in the time series is so that we have long-term data to determine the exact changes, explained Ghosh. “What makes it more complex for the Sundarbans is that if you look at all the seven estuaries, each of them is very different. The freshwater inputs differ from the eastern part to the west. [The] Eastern part of the Sundarbans are more protected [very minimal human interference], so the kind of nutrients you would see from anthropogenic sources is different than that you would see in the western part, Ghosh said. Sustainability practitioner Anurag Danda, who was not involved in the study, emphasised on the variability across the estuaries.

“Yes, at this location the system may be transitioning into a marine system but it may not be the case in Meghna estuary at the eastern extreme due to higher volume of freshwater flow, Danda, senior advisor to WWF, told Mongabay-India. Tracking freshwater flow is important, said Danda, as deltas are highly sensitive to changes in freshwater flows. “Progressive layering of sediment over time results in the build-up of delta land mass that will continue to build seaward – as long as rates of erosion do not exceed rates of sedimentation. Reduced freshwater flows reduce the rate of sedimentation thereby impacting the physical integrity of a delta. We are already witnessing this on the south-western sea-facing islands in the Sundarbans, Danda told Mongabay-India. Under rising sea level conditions, freshwater flows become even more important, he said. Reduced freshwater flows result in the saline front being pushed further inland and reduction in mangrove area because of man-made barriers to successful migration of mangroves. The man-made freshwater agro-ecosystem further inland also witnesses falling productivity due to increased soil and water salinity, he said.

“In addition, there is a change in species composition on land and in water. This is not problematic by itself but the change could result in replacement of commercially important species by less important species, he said. The monsoon play Estuarine ecosystems, that form a transition zone from rivers to seas, receive nutrients from a variety of sources, including riverine discharge. Ghosh says that if you can track the microbial milieu and see what they are up to, then you can monitor the health of the ecosystem. Bacterioplankton are indispensable regulators of global element cycles owing to their unique ability to decompose and remineralise dissolved organic matter. “You can track any biological parameter but bacteria are very good because they are present in huge numbers and they are very precise.

The precision level in bacteria is tremendous. Besides, they provide information on the elemental cycling, which is key to sustainable fisheries, Bhadury said. But the bacterioplankton communities have a whole lot of issues to grapple with in the Sundarbans – seasonal changes in surface water temperature, heavy local rains during monsoon, continuous flow of freshwater from Ganga-Brahmaputra-Meghna riverine systems, daily intrusion of saline water from the Bay of Bengal and dynamism of dissolved nutrients. Seasonal influences such as increased freshwater flow during monsoon can flip the script on the stability of estuarine microbes and thereby on nutrient cycling. “Increased freshwater flow alters prevailing environmental factors in coastal ecosystems and may lead to changes in bacterioplankton communities, said study co-author Ghosh.

“This area gets freshwater from the local rainfall from the south-west monsoon and also from the rainfall received in the upper reaches of the Ganga, Meghna and Brahmaputra rivers. All of these rivers have a long course and get a lot of rain in the upstream and if the water volume increases upstream, it also goes up in the estuary, Ghosh observed. Monsoons have two kinds of effects. First, more nutrients become available due to river run off, which comes from both upstream of the river and also from local inputs of nutrients. But at the same time, the nutrients are diluted largely due to increase in volume of water. This increase also causes a flushing action that could decrease the overall time the organism needs to interact and break down nutrients into simpler forms. Further, as sediment is shaken loose and washed out due to the rains, a lot of nutrients in different forms enter the water from the land. “This change in mix of nutrients also influences the bacterial community structure. In addition, a lot of soil bacteria from the sediment shake-up is also pumped into the estuary water. This change in environment hampers the activity of the soil bacteria, Ghosh explained. All of this happens very fast during the monsoons. “But post-monsoons, these effects nullify and the system becomes more stable. The steady supply of freshwater decreases and nutrients become more homogenous. Around December, the East India Coastal Current reverses pattern and brings in a lot of saline water into the Sundarbans. Additionally, the surface water temperature decreases, Ghosh said. So a bacterial population that is more marine in nature starts to emerge due to enhanced salinity.

“We have shown that the system becomes completely dominated by the *Vibrio* [typically marine] in December, Ghosh said. “In a stable estuarine environment where water stands for a longer time, if you look at the bacterial population, it has signatures of marine and freshwater and it has its own signature. This is because the plankton has enough time to get used to this intermediate salinity, said Ghosh. In contrast, when there is a diverse bacterioplankton community structure, the cycling of nutrients is very different when you have the system dominated by a specific set of organisms because this set of organisms would be using very specific nutrients.

This hits the availability of food for the fish, she added. The study said: “Drastic increase in sediment associated bacteria such as members of Firmicutes and *Desulfovibrio* was found in monsoon, hinting possible resuspension of sediment-dwelling bacteria into the overlying water column. Principal component analysis revealed dissolved ammonium and dissolved nitrate to account for maximum variation observed in the bacterioplankton community structure. Overall, the study showed that a “strong interplay exists between environmental parameters and observed variability in bacterioplankton communities as a result of precipitation which can ultimately influence processes and rates linked to coastal biogeochemical cycles. A recent study that sheds light on water-related risks in the Sundarbans and policy alternatives sheds light on concerns due to changes in salinity in the estuaries of the Indian Sundarbans.

The study states: “Owing to higher freshwater flows in the Hooghly estuary, salinity has decreased in that zone. As a consequence, fish species of low commercial value, particularly hilsa [*Tenualosa ilisha*], have increased significantly, but the commercially important taxa have become less abundant [Ghosh, 2015; Sinha, Mukhopadhyay, & Mitra, 1997]. The situation is different in the central portion of the Sundarbans. Salinity has increased in that area because connections to meltwater sources have been eliminated by heavy siltation of the Bidyadhari Channel [Banerjee,2013]

**West Bengal, Odisha and Andhra Pradesh: Warning for fishermen not to venture into sea**

[http://www.incois.gov.in/portal/osf/swan\\_model.jsp?region=swan&area=Pondicherry&param=swell](http://www.incois.gov.in/portal/osf/swan_model.jsp?region=swan&area=Pondicherry&param=swell)

"Wave steepness ( $s$ ) is the ratio between wave height ( $H$ ) and wavelength ( $L$ ). When waves approach shallow waters,  $H$  increases and  $L$  decreases. When the ratio  $H/L$  reaches the value of  $1/7$ , the wave breaks. Pitch poling and capsizing becomes real possibilities for smaller vessels when wave steepness is severe. Wave steepness seems to be a parameter at least as important as wave height, under some special circumstances even more important. The capsizing potential of a wave critically depends on the steepness of the crest front.

**West Bengal: Dwellers to lose source of income**

<https://www.thedailystar.net/country/news/dwellers-lose-source-income-1642261>

"Ministry of Environment, Forest and Climate Change has declared 73 percent forest area of the Sundarbans under Sharankhola Range as Wildlife Sanctuary without ensuring alternative livelihoods of the dwellers living near the world's largest mangrove forest. Due to the move about three months ago, at least 15,000 people, including fishermen, Bawals and Mowals have lost their livelihood and are passing their days in acute hardship. Earlier, the Ministry of Environment, Forest and Climate Change imposed a ban on collection of all types of forest resources from 73 percent areas under Sharankhola Range, which is designated as 'sanctuaries'. Consequently, the Forest Department has demarcated the sanctuary area and blocked the entrance of fishermen, Bawals and Mowals.

"Fishing boats are lying idle beside the river since a major portion of the forest was declared as 'wildlife sanctuary,' said fisherman Rahman of Sharankhola area. "I borrowed money from a local moneylender about four months ago. But, I don't know how I am going to pay my debt as I cannot go for fishing in the forest area, Rahman said. "Only a small area (27 percent) under Sharankhola Range is out of the sanctuary status where as many as 200 to 250 fishermen can catch fish and crabs, another fisherman Masum Farazi said, adding that as a result most of the fishermen near the Sundarbans have become unemployed. Besides, about 18 percent area under Chandpai Range has been declared as 'wildlife sanctuary,' he said. "I went to Chattogram for an alternative job, but had to return home empty handed as could not earn much money to maintain my family, Masum said.

"After being unemployed for long, some of our fellows left the area for alternative jobs but those who are still here are passing an inhuman life, fisherman Keramat Farazi said. Jalal Mollah, a local moneylender of Sharankhola Bazar, said, "I have given over Tk 20 lakh as loan to several fishermen but they are not returning the debt as they could not catch fish. Divisional Forest Officer (DFO) of the Sundarbans East Zone Mahmudul Hasan said, according to Bangladesh Wildlife Preservation Act, 1974, about 1.39 lakh and 699 hectares of Sundarbans East and West region were declared as sanctuaries. "A scheme of Tk 406 crore for 'Sundarbans Protection Project' is going to be implemented soon to rehabilitate the fishermen, he said.

**West Bengal: 20,000 Sundarbans fishermen, woodcutters lose livelihood for sanctuary expansion**

<http://www.unb.com.bd/category/Bangladesh/20000-sundarbans-fishermen-woodcutters-lose-livelihood-for-sanctuary-expansion/3165>

"About 20,000 fishermen and woodcutters of the Sundarbans have been living a measurable life for the last three months due to the extension of its wildlife sanctuary at Sharonkhola range 'without making any rehabilitation plan' for those who depend on the forest for their livelihood. As the Forest and Environment Ministry designated 73 percent of Sharonkhola range of the

Sundarbans as wildlife sanctuary, many fishermen have turned unemployed as they cannot enter the forest for fishing. Al Amin, a fisherman from Charpara village of the upazila, said, "I had been earning my living from fishing in the Sundarbans since my 15 years of age. I had to take loan from mohajon (money lenders) as I couldn't go for fishing in the forest for the last three months. Now the money lenders are forcing me to return their money...I don't know how I'll repay it. Another fisherman, Mamun, said now fishermen have access to 27 percent of the Sharonkhola range where only 200 to 300 fishermen can go for fishing. As a result, the rest of the fishermen have lost their work, and are living in misery.

"After the sanctuary was declared, I went to Chattogram to earn living but had to return after working as a day-labourer for a week, he said alleging that as schoolteachers there refused to enroll his children as they were not permanent residents there. Jalal Molla, a fish trader of Sharonkhali market, said they need to provide loans to fishermen to send them for fishing in the forest, but now the business got stopped. Bachchu Munshi, a ward member of Southkhali Union Parishad, told UNB that if the situation does not change many fishermen of the region will be forced to leave their village to find alternative works. Contacted, Divisional Forest Officer (DFO) of the Sundarbans East Forest Zone Md Mahmudul Hasan said a Tk-406 crore project is coming soon to protect the Sundarbans and for those who have turned unemployed due to the extension of the sanctuary.

Under the project, Tk 250 crore will be spent on rehabilitation of the unemployed people under a five-year livelihood development programme, the DFO added expressing his hope that the unemployed fishermen will get out of the crisis soon. In July 2017, the government issued a new notification on expansion of the sanctuary areas in different parts of the Sundarbans. With this notification, another 178,260 hectares of land were added to the existing sanctuary, giving half of Bangladesh's Sundarbans a sanctuary status. Of the additional 178260 hectares of sanctuary, 91,693 hectares are under Sundarbans East division in Sarankhola; 38,339 hectares under Sundarbans South division in Khulna; and 48,216 hectares under Sundarbans West division in Satkhira, said sources at the Forest Department. The government has banned the collection of forest resources from the sanctuary areas, aiming to help increase the biodiversity of the forest, including the wildlife and trees.

### **West Bengal: Sundarbans sanctuary expansion: Fishermen, woodcutters left in misery**

<https://www.dhakatribune.com/bangladesh/nation/2018/09/30/sundarbans-sanctuary-expansion-fishermen-woodcutters-left-in-misery>

"According to the Divisional Forest Officer (DFO) of the Sundarbans East Forest Zone a project costing Tk406 crore is underway to protect the Sundarbans and for those who have turned unemployed due to the extension of the sanctuary A large number of fishermen and woodcutters, who depend on forest resources of the Sundarbans, are living in misery as they are

unable to earn their livelihood due to restrictions in entering the forests. Many fishermen who live on fishing in water bodies of the Sundarbans have been restricted from entering the area.

The Forest and Environment Ministry designated 73% of the Sharonkhola range of the Sundarbans as wildlife sanctuary and restricted the fishermen and woodcutters from entering the area without taking any measures for their rehabilitation. Al Amin, a fisherman from Charpara village of the upazila, said, "I had been earning my living from fishing in the Sundarbans since I was 15. I am looking after my family with loans from the mohajon (money lenders) as I couldn't fish in the forest for the last three months. Now the money lenders are forcing me to repay the loans...I have no clue how to repay them."

Another fisherman, Mamun, said now fishermen have access to only 27% of the Sharonkhola range where only 200 to 300 fishermen can go fishing. As a result, the rest of the fishermen have lost work, and are living in misery. "After the sanctuary was declared, I went to Chittagong to earn a living but had to come back after working as a day-labourer for a week," he said alleging that teachers there refused to admit his children in the school as they were not permanent residents of the area, reports UNB. Jalal Molla, a fish trader of the Sharonkhali market, said he used to provide loans to fishermen and send them fish in the forest, but the trade is totally collapsing now. Bachchu Munshi, a ward member of the Southkhali Union Parishad, said if the situation does not change many fishermen of the region will be forced to leave their village to find alternative work.

According to the Divisional Forest Officer (DFO) of the Sundarbans East Forest Zone Md Mahmudul Hasan a project costing Tk406 crore is underway to protect the Sundarbans and for those who have turned unemployed due to the extension of the sanctuary. Under the project, Tk250 crore will be spent on rehabilitation of the unemployed people under a five-year livelihood development program, the DFO added expressing hope that the unemployed fishermen will get out of the crisis soon. In July 2017, the government issued a new notification on the expansion of the sanctuary areas in different parts of the Sundarbans. With this notification, another 178,260 hectares of land have been added to the existing sanctuary, giving half of Bangladesh's Sundarbans a sanctuary status.

Of the additional 1,78,260 hectares of the sanctuary, 91,693 hectares are under the Sundarbans East division in Sarankhola; 38,339 hectares under the South division in Khulna; and 48,216 hectares under the West division in Satkhira, sources in the Forest Department said. The government, aiming to help increase the biodiversity of the forest, including wildlife and trees has imposed a ban on collecting forest resources from the sanctuary areas.

**West Bengal: Hilsa timeframe is here, but something is amiss**

<https://cantoncaller.com/hilsa-season-is-here-but-something-is-amiss/155473/>

"The hilsa timeframe is here, but something is amiss about the succulent, silvery delight, without which no monsoon platter is complete. The fish has shrunk in size. About 60%-70% of the catch that reached Kolkata over the last three days weighs less than 500g. The smaller hilsas don't quite taste like the adult ones, agree both buyers and sellers. About 500 tonnes of hilsa reached Kolkata from Digha and between Thursday and Saturday. It has pushed down the price a tad. A 500g hilsa is now selling for Rs 550-600. While the supply has made fish lovers happy, the decrease in the size of the fish has come as a dampener. Wholesellers and fish experts believe indiscriminate fishing is responsible for the smaller hilsas the market this time. Secretary of Fish Importers' Association said, "This trend started a few years ago with smaller hilsas being caught in large numbers.

Over the years, despite laws banning netting of small fish, nothing has changed. Hilsa supply had been scarce till this week. With import from Bangladesh stopped six years ago, Myanmar is the lone source. But the hilsa timeframe in Myanmar is from February to March. So the imported fish are stored for the local timeframe which begins in July. "The fish naturally loses freshness and taste. But this time, the Myanmar stock is exhausted, said a retailer. It is illegal to catch hilsas weighing less than 500g. A net size has been specified to ensure that the smaller ones are not caught. But lax enforcement of the rules has failed to price out indiscriminate fishing. Oceanographer Sugata Hajra, who has been part of several studies on the dwindling hilsa catch, said, "Hilsas are caught randomly in Bengal.

Fishermen often break the rules. As a result, the fish are not able to grow. Also rampant fishing at the mouth of the sea has not spared those that are on the way to lay eggs in the rivers. "This routinely happens every year, he said. The average size of the hilsa will stay below 600g in Kolkata unless fishing rules are adhered to immediately, said a pisciculture () analyst. "Adult hilsas swim into the rivers to lay eggs and swim back once the spawns attain a weight of around 300g. The only way out is to restrict the size of the fishing nets to ensure that smaller hilsas are not caught, Hajra said.

### **West Bengal: 48 fishermen still missing in Bay**

<http://www.newagebd.net/article/51366/48-fishermen-still-missing-in-bay>

"At least 48 fishermen from Barguna and Patuakhali remained missing for four days since Thursday evening trawler owners and fishing community leaders expressed fears on Sunday that their fishing trawlers capsized in the Bay of Bengal during storm. They told New Age that 32 missing fishermen were from Barguna and 16 others from Patuakhali. Coast Guard officials told New Age that since receiving information about the missing fishermen from different places they launched rescue operations in the Bay. Barguna district Fishermen-Trawler Owners' Association president Golam Mostafa Chowdhury told New Age that at least 32 fishermen on three boats from Kalapara, Barguna remained missing. He said that 11 fishermen were on Fishing Boat Tanjila, four on FB Arman and 17 on board the FB Maa.

Quoting his organization members, he said that at least nine fishing boats capsized in the deep sea near Fairway Boya, Narkelbaria and Dubla during Thursday night's storm. He said that on Friday and Saturday fishermen rescued most of 99 fishermen floating in the bay 14 others from the channels passing through the Sunderbans. He said that some of the fishermen were rescued by the Coast Guard and the Bangladesh Navy. Mostafa said that contacted 39 fishermen who with their fishing boats were carried away to Kakdwip off India's West Bengal coast. He said that they told him that they were safe and in good health. New Age Correspondent in Patuakhali reported that 16 fishermen from the district on board three fishing trawlers were missing. He reported that eight of the missing fishermen were on board the Fishing Boat Nur, seven on FB Swapan and one was on the FB Sajeda.

They are from villages in Kalapara upazila, Patuakhali, said Alipur-Mahipur Fish Traders' Cooperative Society president Ansar Uddin Molla. The missing fishermen on board FB Nur are Nur Islam, 30, Shahjahan, 36, Khaleq, 50, Nur Jamal, 28, Shahidul, 30, Rasel 25, Harun, 55 and Sabuj, 40, said Md Monirul Islam of Kalapara, the owner of the fishing boat. The Cooperative Society president Ansar said that FB Sajeda was carrying 16 fishermen, 15 of whom were now at Pekuar Khal in West Bengal, India and the boat was missing with a fisherman. Coast Guard west zone staff officer for operations Lieutenant Zahid Al Hasan told New Age that all the five Coast Guard Stations in the Sunderbans were continuing the search for the missing fishermen.

**West Bengal: Fishermen forum writes to Nitin Gadkari: 'Proposed merchant ship corridors a threat to livelihood'**

<https://indianexpress.com/article/cities/kolkata/west-bengal-fishermen-forum-writes-to-nitin-gadkari-proposed-merchant-ship-corridors-a-threat-to-livelihood-5363654/>

"A fishermen forum in West Bengal has opposed the central government's proposal to set up designated corridors along the west coast for merchant ships in a bid to avoid mid-sea collisions between fishing boats and ships. The Dakshinbanga Matsyajibi Forum (DMF) has submitted memorandums to Union Shipping Minister Nitin Gadkari, Defence Minister Nirmala Sitharaman and Director General of the Indian Coast Guard, Rajendra Singh, claiming that the move would jeopardise the livelihood of fishermen. The National Fish Workers Forum (NFF) the parent organisation of the DMF has also written to Gadkari in this regard.

The forum said that the National Waterway 1, which runs from Allahabad in Uttar Pradesh to Haldia in West Bengal, is having an adverse effect on fishermen in the eastern part of the country. "Director General of Shipping (DGS) is in the process of setting up a traffic corridor for merchant vessels sailing India's western seafront to prevent mid-sea collisions involving commercial ships and fishing boats. The corridor will start from the Gulf of Kutch and the Gulf of Khambhat (Gulf of Cambay) down through the coast of Maharashtra, Goa, Karnataka, Kerala and till some distance beyond Kanyakumari in Tamil Nadu. The proposed corridor is 20 nautical

miles (37.04 km) wide and about 15 nautical miles (27.78 km) away from the coastline, said Debasis Shyamal, secretary of the NFF and vice-president of DMF.

“If implemented, the proposed coastal traffic corridor will confine small-scale fishing communities within 15 nautical miles (27.78 km) from the coast. There will be a prohibited area of about 2,300 km in length and 20 nautical miles (37.04 km) in width. This would amount to an area of about 85,000 sq km of sea waters to be prohibited for fishing. This will endanger their livelihoods. Similarly, the NW-1 is also having an adverse effect on the livelihoods of fishermen in Eastern India, he added. Pradip Chatterjee, a senior member of the DMF, said fishing communities are not going to give up their right to fish. “We demand that the Merchant Shipping Corridor along the Indian coast be stopped and there be no infringement on fishing rights in coastal waters. There should be consultation with fishing communities first to contain the risk of collision between merchant ships and fishing boats, he added.

### **West Bengal: Microbe-based monitoring to conserve Sundarbans**

<https://india.mongabay.com/2018/09/18/microbe-based-monitoring-to-conserve-sundarbans/>

"They may be microscopic in size, but bacterioplankton steer major carbon cycling and food webs in aquatic ecosystems. Bacterioplankton are the bacterial component of plankton that live in water bodies, including oceans and lakes. Now, scientists at the Indian Institute of Science Education and Research Kolkata (IISER Kolkata) are keeping an eye out for bacterioplankton and how they chow down and use carbon, in the world's largest delta, the Sundarbans, to track changes in freshwater flow that could have implications for sustainability of coastal fisheries. Explaining the premise for this microbe-based monitoring, they reason that when environmental parameters change (such as influx of fresh or saline water), it throws the existing bacterial community structure into turmoil.

This disturbance, in turn, shapes up how nutrients are broken down in the system and made available through the food chain to the organisms higher up in the web, such as fish. Aiding the team in their observations is a time series, the Sundarbans Biological Observatory Time Series (SBOTS), which maps data monthly to pinpoint trends in the health of the Sundarbans ecosystem. “Understanding elemental cycling (such as carbon cycling) is a good way to understand the health of the ecosystem. I believe this is the only mangrove time series in India if not in Asia, Punyasloke Bhadury of the Centre for Climate and Environmental Studies (CCES) at IISER Kolkata told Mongabay-India. Spread out across 10,000 square km, Sundarbans, the largest single-track mangroves in the world, lies in the Ganga-Brahmaputra-Meghna (GBM) delta and is shared between India and Bangladesh.

This mangrove ecosystem encompasses over 102 islands in the Indian side (in the state of West Bengal) with a network of innumerable rivers, rivulets and creeks. The study stations for the time

series are located in the 223.4 square km Sagar Island, the largest compact island of Sundarbans that sits at the confluence of the Hooghly river (a branch of the Ganga) and the Bay of Bengal. The shrinking island lies 6.7 metres above sea level and is battling soil erosion, breach of embankments and loss of landmass and rising sea levels. “Based on our preliminary studies, we believe that freshwater flow in the Sundarbans (at Sagar) is now starting to change and these changes are now starting to show clearly through the level of changes happening at the bacterial community structures, Bhadury said on the sidelines of the international Land-Ocean-Atmosphere workshop.

At this year's workshop convened by Bhadury at the institute, it was discussed how understanding the land-ocean-atmosphere interactions aids in management of terrestrial and coastal resources nationally to maximise benefits to people's livelihood as well as environmental protection. A key example of such dynamics, informed Bhadury and colleague Anwasha Ghosh, is the land-ocean boundary based coastal ecosystem in the Sundarbans, a region that experiences the third largest river discharge in the world through the Ganges-Brahmaputra-Meghna outflow. The Indian Sundarbans archipelago acts as the “nursery for nearly 90 percent of the aquatic species of eastern coast of India. In Sagar, fisheries rank second after agriculture in terms of livelihood. Based on their research, the scientists say they now have some idea of how carbon cycling is taking place in the system and that the system in Sagar Island is now “probably transitioning to a marine system from an estuarine system. “The reason why we set up monthly monitoring since 2010 in the time series is so that we have long-term data to determine the exact changes, explained Ghosh.

“What makes it more complex for the Sundarbans is that if you look at all the seven estuaries, each of them is very different. The freshwater inputs differ from the eastern part to the west. Eastern part of the Sundarbans are more protected (very minimal human interference) so the kind of nutrients you would see from anthropogenic sources is different than that you would see in the western part, Ghosh said. Sustainability practitioner Anurag Danda, who was not involved in the study, emphasised on the variability across the estuaries. “Yes, at this location the system may be transitioning into a marine system but it may not be the case in Meghna estuary at the eastern extreme due to higher volume of freshwater flow, Danda, senior advisor to WWF, told Mongabay-India. Tracking freshwater flow is important, said Danda, as deltas are highly sensitive to changes in freshwater flows.

“Progressive layering of sediment over time results in the build-up of delta land mass that will continue to build seaward as long as rates of erosion do not exceed rates of sedimentation. Reduced freshwater flows reduce the rate of sedimentation thereby impacting the physical integrity of a delta. We are already witnessing this on the south western sea-facing islands in the Sundarbans, Danda told Mongabay-India. Under rising sea level conditions, freshwater flows become even more important, he said. Reduced freshwater flows result in the saline front being pushed further inland and reduction in mangrove area because of man-made barriers to

successful migration of mangroves. The man-made freshwater agro-ecosystem further inland also witnesses falling productivity due to increased soil and water salinity, he said. “In addition, there is a change in species composition on land and in water. This is not problematic by itself but the change could result in replacement of commercially important species by less important species, he said.

The monsoon play Estuarine ecosystems, that form a transition zone from rivers to seas, receive nutrients from a variety of sources including riverine discharge. Ghosh says if you can track the microbial milieu and see what they are up to then you can monitor the health of the ecosystem. Bacterioplankton are indispensable regulators of global element cycles owing to their unique ability to decompose and remineralise dissolved organic matter. “You can track any biological parameter but bacteria are very good because they are present in huge numbers and they are very precise. The precision level in bacteria is tremendous. Besides, they provide information on the elemental cycling which is key to sustainable fisheries, Bhadury said. But the bacterioplankton communities have a whole lot of issues to grapple with in the Sundarbans—seasonal changes in surface water temperature, heavy local rains during monsoon, continuous flow of freshwater from Ganga-Brahmaputra-Meghna riverine systems, daily intrusion of saline water from Bay of Bengal and dynamism of dissolved nutrients. Seasonal influences such as increased freshwater flow during monsoon can flip the script on stability of estuarine microbes and thereby on nutrient cycling.

“Increased freshwater flow alters prevailing environmental factors in coastal ecosystems and may lead to changes in bacterioplankton communities, said study co-author Ghosh. “This area gets freshwater from the local rainfall from the south-west monsoon and also from the rainfall received in the upper reaches of the Ganga, Meghna and Brahmaputra rivers. All of these rivers have a long course and get a lot of rain in the upstream and if the water volume increases upstream, it also goes up in the estuary, Ghosh observed. Monsoons have two kinds of effects. First, more nutrients become available due to river run off which comes from both upstream of the river and also from local inputs of nutrients. But at the same time, the nutrients are diluted largely due to increase in volume of water. This increase also causes a flushing action which could decrease the overall time the organism needs to interact and break down nutrients into simpler forms Further, as sediment is shaken loose and washed out due to the rains, a lot of nutrients in different forms enter the water from the land. “This change in mix of nutrients also influences the bacterial community structure.

In addition, a lot of soil bacteria from the sediment shake-up is also pumped into the estuary water. This change in environment hampers the activity of the soil bacteria, Ghosh explained. All of this happens very fast during the monsoons. “But post-monsoons these effects nullify and the system becomes more stable. The steady supply of freshwater decreases and nutrients become more homogenous. Around December, the East India Coastal Current reverses pattern and brings in a lot of saline water into Sundarbans.

Additionally, the surface water temperature decreases, Ghosh said. So a bacterial population that is more marine in nature starts to emerge due to enhanced salinity. “We have shown that the system becomes completely dominated by the *Vibrio* (typically marine) in December, Ghosh said. “In a stable estuarine environment where water stands for a longer time, if you look at the bacterial population, it has signatures of marine and freshwater and it has its own signature. This is because the plankton has enough time to get used to this intermediate salinity, said Ghosh. In contrast when there is a diverse bacterioplankton community structure, the cycling of nutrients is very different when you have the system dominated by a specific set of organisms because this set of organisms would be using very specific nutrients. This hits the availability of food for the fish, she added. The study said: “Drastic increase in sediment associated bacteria such as members of Firmicutes and *Desulfovibrio* was found in monsoon hinting possible resuspension of sediment-dwelling bacteria into the overlying water column. Principal component analysis (PCA) revealed dissolved ammonium and dissolved nitrate to account for maximum variation observed in the bacterioplankton community structure.

Overall, the study showed that a “strong interplay exists between environmental parameters and observed variability in bacterioplankton communities as a result of precipitation which can ultimately influence processes and rates linked to coastal biogeochemical cycles. A recent study that sheds light on water-related risks in the Sundarbans and policy alternatives, sheds light on concerns due to changes in salinity in the estuaries of the Indian Sundarbans. The study states: “Owing to higher freshwater flows in the Hooghly estuary, salinity has decreased in that zone. As a consequence, fish species of low commercial value, particularly *Tenualosa ilisha*, have increased significantly, but the commercially important taxa have become less abundant (Ghosh, 2015; Sinha, Mukhopadhyay, & Mitra, 1997). The situation is different in the central portion of the Sundarbans. Salinity has increased in that area because connections to meltwater sources have been eliminated by heavy siltation of the Bidyadhari Channel (Banerjee,2013).

### **West Bengal: Fish to reach home from rearing unit**

<https://www.telegraphindia.com/calcutta/fish-to-reach-home-from-rearing-unit-259004?ref=calcutta-new-stry>

"A state-of-the-art fish rearing and retail facility is set to come up in Nalban near Nicco Park from the end of this month. The State Fisheries Development Corporation (SFDC) has already received funds from the National Fisheries Development Board to start the project. And as a bonus for residents of Salt Lake, the fish reared here will be sold in the township as a pilot project. According to Soumyajit Das, the managing director of SFDC, this is the first time that the central body is funding a project that will have a waterbody fed by sewage water. “They were very happy with our proposal and have released funds for the same. We will start work later this month, said Das.

According to Das, unlike other fishery projects they will have fish hatcheries in Nalban. “They will be similar to hatcheries for chicken where we will raise the fish inside specially-curated waterbodies from fish eggs. In most centres, SFDC would release fingerlings or small fish into the water and then raise them into bigger fishes. However, this time the body will create special pools with proper ambient temperature to raise fish from eggs. “This facility will encompass everything that is required for a modern fish breeding centre, said Das. According to him, while home grown varieties of freshwater fish like Rohu and Katla will be reared Silver Pompano and Cobia will also be hatched here. At present, the SFDC has a fish hatchery project at Jamunadighi. The 10-hectare Nalban waterbody will be divided into sections where the fish will be reared. “The Nalban waterbody is unique as it is a brackish water project where fish is reared in sewage fed pools of water, said Das. Apart from the rearing of fish, the project will focus on direct marketing of the fish and the corporation has zeroed in on Salt Lake for doing the same. “We will get solar powered vans and sell the fish in the township, Das said. According to him, everything on these vans will be powered by solar cells. “From the drive mechanism to the cooling unit fixed on the van, everything will be powered by solar cells that will charge the batteries on the go, he said. Residents will also be able to order fish through Smartfish, an app launched by SFDC earlier this year to get fish delivered at their doorstep in fillet, dressed, dry or pickle form.

### **West Bengal: Climate adaptation remains neglected in the Sundarbans**

<https://indiaclimatedialogue.net/2018/09/12/climate-adaptation-remains-neglected-in-the-sundarbans/>

"When researchers involved Gauri Mondal, a woman farmer in the Indian Sundarbans, as a participant in a project to evolve adaptive strategies to counter the impact of climate change in the world's largest estuarine mangrove forest, she had little idea what it was all about. By the third year of the study, Mondal's income had risen to INR 40,000 (USD 550) a year by rearing poultry and adopting many other farming practices recommended by the researchers. “At that time, we used to rear 50 ducks and 50 poultry at a time, besides much else, with project support, the 33-year-old subsistence farmer told indiaclimatedialogue.net. The good days, however, did not last. Once the project got over, she found that the costs of maintaining the newly taught practices were not sustainable.

“I had to scale down the work, she recounted. “During the project, we received focused training from the experts. But after the project was over, neither the research team nor the Sundarban Development Board came back to us for any follow-up. Such tales of hope and despair abound in the world heritage site of Sundarbans, which is already reeling under the impacts of climate change in the form of more turbulent seas, increasingly saline soil and violent cyclones. The Sundarbans is the world's largest contiguous mangrove forest and one of the most highly modified estuaries in the world. It has attracted a steady stream of researchers from home and

abroad, but the outcomes and findings have often not been appropriately communicated to the subjects of the research or to policymakers.

Fish production the Sundarbans is a case in point. In 2010-11, the Sundarbans produced nearly 40% of the combined fish catch in the inland sector of the North and South 24 Parganas districts of the state of West Bengal. Freshwater aquaculture, a significant driver of the local economy, is clearly threatened, and experts say the vulnerability of fishery-based livelihoods to climate change has increased over time. In 2013, India ranked third in the Global Climate Risk Index, a ranking of 170 countries that are most vulnerable to climate change, behind the Philippines and Cambodia. Anthropogenic activities, together with climate variability, pose a serious threat to the biotic and abiotic integrity of the Sundarban delta. Climate-resilient aquaculture One of many research projects Development of Climate Resilient Aquaculture Strategies for Sagar and Basanti Blocks of Indian Sundarban was conducted by the West Bengal University of Animal and Fisheries Sciences (WBUAFS) between 2010-11 and 2014-15.

Besides the university, which is an institution affiliated to the Indian Council of Agricultural Research (ICAR), other stakeholders included the Sundarban Development Board, West Bengal's Department of Fisheries and Sundarban-based NGOs such as Paribesh Unnayan Parishad and Joygopalpur Gram Bikash Kendra and fish farmers of the surveyed area. The project aimed to develop climate-resilient aquaculture strategies for freshwater aquaculture against climate change induced salinity intrusion in the Sagar and Basanti administrative blocks, which fall under the high aquatic saline zone and are often exposed to climatic hazards. Both the blocks suffered heavily during Cyclone Aila in 2009. When a survey report was published as the first official output of the project in 2012, S. Ayyappan, Secretary General of ICAR, expressed hope that "the benchmark survey... could prove useful in making policy and planning for the future aquaculture development programme for the Sundarban region.

After interactions with farmers, the researchers thought it was best to integrate aquaculture with livestock rearing and cropping. They tried out their model in the fields and ponds of farmers such as Mondal. The results were encouraging. The participatory mode research showed increased production and profitability, resulting in a 60% jump in farm cash incomes compared with pre-intervention levels. Better space utilisation, recycle of domestic waste, crop diversification and better manpower utilisation brought this turnaround. The testing of solutions in the two blocks affected by Cyclone Aila in 2009 and by increasing climatic variability in subsequent years was done by the study team for a three-year period.

Interventions in the farmers' fields included raising of pond dyke heights and fencing of pond with nets, supply of various species of fish and partial supply of fish feed, supply of improved variety paddy seeds and other costs of paddy farming, supply of ducks, poultry, goats and their feed and building their dwelling places and supply of various salinity tolerant fruit trees and plants such as guava, mango, jackfruit, coconut etc. The research team also evaluated salinity

tolerance of 17 freshwater fish species convenient for saline aquaculture in the Sundarbans, which was thought to be useful for integrated climate-adaptive farming. Disappointing follow-up the findings were disseminated through stakeholders' meetings and reports were made to the Sundarban Development Board (SDB) and other relevant stakeholders. However, the project's recommendations were not widely adopted, and policymaking and planning for a future aquaculture development programme in the Sundarbans never materialised.

“Unfortunately, things have not moved, Raman Kumar Trivedi, Principal Investigator of the project, told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). This was despite the fact that the Sundarban Development Board was a partner in this project. “Our process was elaborate and selection criteria included noticeable levels of vulnerability in the farmer, reasonable level of knowledge of aquaculture, technicalities of the surroundings of the ponds and presence of womenfolk who stood to benefit from the intervention, since women played an equal role in decision-making in the Aila-affected households.

The board helped us in all this, giving us logistical support, Trivedi said. “However, the next two stages upscaling the solutions and policy-making interventions was never in our hands. The availability of institutional credit is poor in the Sundarbans and the research report had recommended that this be strengthened to facilitate climate-resilient agriculture. During the project period, efforts towards capacity building of affected farmers and joining them up with locally situated government and non-government institutions was undertaken regularly. But it was not enough to ensure continuation of those activities or improvement in the credit scenario after the project period.

Anindya Sundar Ghosh, former Deputy Project Director of SDB who was a key person during the implementation of the project, admitted the lack of follow-up. “SDB provided logistics support during the project period, he told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “After dissemination meetings were held and results announced to us, no livelihood support programme was evolved by correlating project findings with follow-up action. Lack of policy intervention The lack of policy intervention is only too evident in the Sundarbans. Although training has been imparted on climate-resilient aquaculture for the past two years, no other initiative is being carried out, admitted Abdul Gani, Special Secretary at the Sundarban Affairs Department.

“We have no separate policy on climate-resilient aquaculture, Gani said. “Policy formulations with respect to climate change are the responsibility of the climate cell of the Department of Environment. The state's officer-in-charge of climate issues in the Department of Environment admitted the lack of policy communication. “With respect to the Sundarbans or aquaculture practiced there, no study findings or policy suggestions have come to us, he said. “As a matter of practice, we incorporate any suggestion from any department of the state government into the State Action Plan on Climate Change, which is due to be updated and released soon. In terms of scaling up such interventions, the responsibility usually rests with institutions that look after

fisheries extension work. Normally, Krishi Vigyan Kendras (KVKs), which are affiliated to the ICAR, as also Fisheries Extension Officers at the Department of Fisheries are supposed to carry out this task. For this project, the best-situated institution to carry out this work was KVK Nimpith located in the Sundarbans.

However, queries to the Subject Matter Specialist at KVK Nimpith, who was present at the stakeholder meetings during the project period, went unanswered, as he declined to comment on the findings of this study. "In terms of extension work, KVK Nimpith showed a greater emphasis on agriculture and horticulture, and less of an orientation towards fisheries. They also had a limited area of operation, Trivedi said. "Therefore, extension work related to the findings of our project has not been effective. Sourabh Kumar Dubey, who was Senior Research Fellow at the WBUAFS during this project period and is now with the International Water Association, summed up the situation. "The ultimate outcome is project findings stay under the carpet. The fish farmer, researcher and policymaker have a clear disconnect, which results in non-implementation of project recommendations. Effective action on the ground to tackle climate change and develop adaptive capacity of the farmers is the final casualty.

#### **West Bengal: Rain alert: Fishermen asked to stay on land**

<http://www.millenniumpost.in/kolkata/rain-alert-fishermen-asked-to-stay-on-land-317598>

"An alert has been issued for the fishermen to avoid venturing out in the sea for the next 18 hours from Thursday evening due to the formation of a low pressure trough. With the forecast alert from the Regional Meteorological department, the state government has urged fishermen not to venture out in the sea for the next 18 hours. Fishermen warning (Meteorological department) for West Bengal coast reads: ""Due to formation of a Low Pressure area over Northwest Bay of Bengal and neighbourhood, Fishermen those are in deep sea are advised to return to the coast by today (05.09.2018) afternoon and also advised not to venture out in the deep sea, along and off West Bengal and Odisha coast and towards Bangladesh coast from today 5th September evening till further notice.""

#### **West Bengal: Where erosion leads to land loss**

<https://www.thehindu.com/sci-tech/energy-and-environment/west-bengal-where-erosion-leads-to-land-loss/article24842375.ece>

"It's a land-starved State, and between 1990 and 2016, West Bengal lost more to erosion. A report by the National Centre for Coastal Research (NCCR), under the Ministry of Earth Sciences, released recently said West Bengal recorded the maximum erosion of 63%, followed by Puducherry 57%, Kerala 45%, and Tamil Nadu 41%. Why is the State vulnerable? The coastal stretch of West Bengal, bordering Bangladesh and located on the eastern end of the Indian peninsula, is one of the largest deltaic regions of the world. The coastline has numerous

rivers and the largest single block of tidal halophytic mangroves. The 534 sq km coastline of West Bengal, regularly hit by tides, tropical cyclones and storm surges, has suffered 63% erosion. Between 1990 and 2016, West Bengal lost 99 sq km land due to coastal erosion. The land gain in the State, due to accretion has been only 16 sq km. Sagar, the biggest island of the Sunderbans archipelago, which is home to almost 2 lakh people, is facing severe erosion on its western and south eastern parts. Islands like Ghoramara and Mousuni are also facing erosion. The same trend has been observed at Jambudweep Island and Henry Island in the Sunderbans. Other than the natural process, like storms and sea level rise, anthropogenic issues like aquaculture, port construction and other developmental activities also lead to coastal erosion, say experts. What will be the impact? West Bengal is a land-starved State with the fourth highest population in the country.

It is also the second most densely populated State. According to the 2011 census, 1,029 people live in each square kilometre of West Bengal. The Sunderbans, which comprises most of the coastline in the State, has about 1,000 people living per sq km. The loss of more than 80 sq km of coastal land puts further pressure on the population of the island, who are dependent on economic activities centred on the coastline. This stress leads to migration from these coastal areas and islands. Researchers call the people moving out of the Sunderbans “climate change refugees. The erosion of coastal areas, coupled with climate change, is a major cause of migration from the Sunderbans, which is one of the most backward regions of the State. Reports say that of the 1,000 inhabitants of the Sunderbans, 190 eat just one meal a day and 510 are malnourished. The extent of migration can be gauged by a recent publication of the School of Oceanographic Studies, Jadavapur University, which said 75% of the people living on the island are dependent on remittances from outside.

According to NCCR researchers, the report on the national survey of coastline will provide inputs for framing policies to address the stress of the people residing in coastal areas, especially in the Sunderbans. Is it happening only in Bengal? Coastal erosion has been noticed in nine States and two Union Territories. The NCCR report said 34% of India's coastline underwent varying degrees of erosion during the period under consideration, and 28% of the shoreline showed accretion and 38% of the country's coastline remained stable. A State-wise analysis of the coastal erosion suggests that more than 40% erosion was observed in four States and Union Territories. The report states that the west coast has relatively been stable with erosion in minor pockets like Kerala. In the west, 48% of the coastline is stable, whereas only 28% of the eastern coast has been deemed stable. When it comes to accretion, States such as Odisha (51%) and Andhra Pradesh (42%) recorded the maximum gain owing to coastline changes. Goa and Maharashtra have the most stable coastlines in the country.

## **West Bengal: Unused waterbodies to be utilised for fish production**

<http://www.millenniumpost.in/kolkata/unused-waterbodies-to-be-utilised-for-fish-production-316248>

"Bengal government is chalking out a comprehensive road map in order to utilise all the unused waterbodies across the state for fish farming, thereby increasing the overall fish production in the state, state fisheries minister Chandra Nath Sinha said. He was speaking at 'Fisheries Conclave: Maximising Production and Ensuring Safety' organised by the Confederation of Indian Industry (CII) at a city hotel on Tuesday. Bengal has the potential to overtake Andhra Pradesh in fish production within the next couple of years, the minister said. If we could utilise the unused waterbodies in the state for pisciculture through more scientific intervention, Bengal will surpass Andhra Pradesh in the near future.

A lot of initiatives are being taken to educate people involved in fish farming. Our department is formulating a road map to increase fish production in the next couple of years," Sinha said. Bengal has exported around 1.7 lakh metric tonne of fishes abroad including 70 thousand tonne of shrimps. Last year, the overall fish production in the state remained at 17.42 lakh metric tonne, while the fisheries department has set a target to increase the productivity up to 18.5 lakh metric tonne in the next year.

According to sources at the fisheries department, around 15 percent of waterbodies in the state have been lying unused. If these waterbodies could be used for pisciculture, fish production would be manifold. It may be mentioned that Chief Minister Mamata Banerjee has said Bengal will be self-reliant in case of fish production. Banerjee's brain child 'Jol Dhoru, Jol Bhoru' project has significant contribution towards the increase in fish production in the state in the past few years. The Fisheries department has developed Moyna in Purba Medinipur district as Bengal's largest fisheries hub, following instructions of the Chief Minister to cut down on fish imports from other states. A stress has been given to increase the productivity of small fishes as well. Steps have also been taken to use ponds for cultivating small fishes twice in a year.

A study has been conducted to examine what species of fishes can be produced in which aquatic conditions in the districts, Sinha said. "We are trying to increase the production of prawns in the districts. Our department is setting up hatcheries in various places and fingerlings are being distributed among farmers by our department for free," Sinha said. Soumyajit Das, Managing Director, the State Fisheries Development Corporation (SFDC) Ltd said farmers training, application of scientific food and medicine have been given utmost importance to maximise the production. Ravi Inder Singh, Principal Secretary, department of Fisheries said steps have been taken to strengthen cold chain management in the state. Focus is on creating infrastructure in production and exports of fishes, he added.

## **West Bengal: Chalks out road map to turn to modern ways of farming and fishing**

<https://www.devdiscourse.com/Article/138052-west-bengal-chalks-out-road-map-to-turn-to-modern-ways-of-farming-and-fishing>

"The West Bengal Fisheries Department is on course to reach 18.5 lakh-tonne production target in 2018-19, Fisheries Minister Chandra Nath Sinha said today. Sinha, who was addressing a CII Fisheries Conclave here, said the state government has chalked out a five-year road map to instill awareness and proper education among the fishermen to go for scientific and modern ways of farming. ""In 2017-2018, we managed 17.4 lakh-tonne productions of fish. But, we need to raise the production level by several notches in another five years. We need to encourage fishermen to shift to a more modern and scientific way of pisciculture. We need to maximize use of ponds in rural areas,"" he said. Sinha said 1.7 lakh tonnes of fish were exported in 2017-18, including the volume sold to other states in the country.

""We have the potential to substantially increase the volume of exports, too, in another five years."" He said many ponds in rural Bengal have not been properly used, due to factors like one water body having several owners for years and sticking to traditional fish farming. If these can be sorted out, there will be better utilization of ponds for pisciculture and water bodies can be more economically viable, he said. Sinha said the department was planning to increase farming of endangered species of fishes, including starting rearing of small fishes in water bodies by local fishermen. ""We are giving more stress on high-yield aqua farming and adopting modern marketing ways,"" Managing Director of State Fisheries Development Corporation Ltd (SFDC), Soumyajit Das said. He said the SFDC was developing a cold chain network system to store fishes and has introduced a mobile app for customers in the city for delivery of fish. Meanwhile, a CII official said a white paper will be prepared on ways to facilitate loans to fishermen and introduce insurance facilities, on the lines of crop insurance to farmers.

**West Bengal: Fisheries Department aims 18.5 lakh tonne production in FY19**

<https://www.moneycontrol.com/news/business/economy/west-bengal-fisheries-department-aims-18-5-lakh-tonne-production-in-fy19-2890091.htm>

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### **West Bengal: No stopping abduction in Sundarbans**

<https://en.prothomalo.com/bangladesh/news/182285/No-stopping-abduction-in-Sundarbans>

"As many as 274 pirates of 26 gangs have surrendered to the law enforcement in the last two years, choosing to make a return to normal life. Over hundred have been killed in [gunfights] while around 500 have been put behind the bars. Yet, the situation has hardly improved, with new gangs joining the old ones in terrorising the Sundarbans. Over 50 fishermen were abducted by these gangs in the last three months and locals say the terror cannot be contained if the masterminds are not brought to book. Some pirates are taking the advantage of the 'surrender scheme', planning to make some money by being a pirate and then returning to normal life by surrendering to the law enforcement. Forests department sources say the pirates cause problems all the year round as October to February is the season for shutki (dried fish), April to September is the time for hilsa, honey and wax while the other parts of the year mangrove palm collectors remain busy to make their ends meet.

The pirates are merciless; they throw fishermen and other people dependant on the forest if the ransom is not paid. Locals say they mostly meet the pirates' demands without letting anyone know, to avert further problems. Previously 25-30 gangs were active in the Sundarbans. In the last two years, RAB-8 and RAB-6 gave them the chance to return to normal life. The official initiatives resulted in the surrender of 274 pirates of 26 gangs with huge firearms and ammunitions. However, a few new gangs are now being created while the older ones getting more ferocious. Abul Hossain, president of a local platform of the fishermen, said to Prothom Alo, "The number of abduction has gone down since a good number of gangs had surrendered. However, it has not stopped. The law enforcement, especially RAB-8, and Jamuna TV's special correspondent Mohsin Ul Hakim played a significant role to this end. But the patronisers who supply them arms or provide them with money, should be brought to book, at any cost." "It will be better if RAB and the Coast Guard work together," he added. Major Khan Sajibul Islam,

deputy commander of RAB-8, said, ""We hope to bring the masterminds to book soon and free the Sundarbans and the coast from pirates.""

### **West Bengal: DMF objections to MoEF&CC notification amending CRZ-2011 admitted by NGT for hearing**

"On 2nd July 2018, the Ministry of Environment, Forest and Climate Change (MoEF & CC) had come up with a notification No. S.O. 3197(E) dt. 2nd July 2018 stating, inter-alia, that the regulatory regime of Coastal Regulation Zone (CRZ) Notification 2011 is being removed from areas between the Hazard Line and 500 m landwards from the High Tide Line in case of coastlines as well as from areas between the Hazard Line and 100 m in case of tidally influenced water-bodies. This notification was passed despite the process of calculation & demarcation of Hazard Line being an ongoing one pursued by the MoEF & CC along with the Survey of India and without any public hearing/consultation.

Furthermore, this change was thus effected despite the fact that consultation process has been ongoing for a draft CRZ Notification 2018 passed by the same Ministry which also address, inter alia, the same Hazard Line issues and considerations. The MoEF&CC Notification dated 2nd July 2018 has been challenged by the Dakshinbanga Matsyajibi Forum (DMF) through an Appeal (Number 4 of 2018) placed before the National Green Tribunal (NGT), Eastern Zonal Bench at Kolkata. The same was heard by the L/d Justices of the Tribunal on 27th August 2018 through Video Conferencing. In course of the Hearing, the L/d Justices, in appreciation of the seriousness of the issue, decided to have the matter heard by a Higher Bench, being the Bench of the Chairperson, National Green Tribunal, also through Video Conferencing. The L/d Justices also directed the MoEF&CC to also place their views on the objections raised by DMF before the same Bench. The date of the next hearing, before the Chairperson's Bench, has been fixed on 18th September, 2018.

### **West Bengal: North Bengal fishing communities to claim right to water**

"Representatives of fishing communities from Coochbehar, Jalpaiguri and Dakshin Dinajpur districts held a consultation for two days in Siliguri to consider their livelihood issues and draw a strategy action plan to protect fish workers livelihood rights in North Bengal. They were joined by Dakshinbanga Matsyajibi Forum (DMF) leaders Pradip Chatterjee, Milan Das and Ambia Hossain alongwith Office Bearers of DISHA Sasanka Dev, Shyamalendu Biswas and Supratim Lahiri. The meeting was convened by Anirban Choudhury, Convener of UMF. The meeting started with welcoming address by Anirban Choudhury followed by self-introduction of participants. Pradip Chatterjee spoke about the need to get organised and raise united voice to 'Save Water, Save Fish and Save Fisher People'.

Fishing communities can challenge the age old deprivation and neglect only by getting themselves organised he said. He mentioned the need for national policy on inland fisheries that

would link up with national water policy and prevail over all development planning that affect water bodies, fish resources and livelihood of fishing communities. He also presented a brief description of the struggles and achievements of DMF and the newly formed National Platform for Small Scale Fish Workers (Inland). He urged upon the fishing community representatives to work hard for a united organisation of fishing communities in North Bengal which will link up with DMF and the National Platform and muster formidable strength.

The consultation, held on 18th and 19th August 2018, first took stock of the situation with fish workers' livelihood in North Bengal. One after another, the fish workers' representatives came up with annals of deprivation and neglect of a community that supplies the society with cheap and widely available animal protein in the form of fish, a community that cares for water and tries to protect water bodies as repositories of fish resources. Stories of their loss of livelihood intertwined with that of extinction of rivers and wetlands due to pollution, water diversion and encroachments. They lamented indiscriminate interventions on watersheds through constructions of roads, railways, buildings that lacerated both catchment and drainage channels resulting in intermittent overflowing and drying of water bodies.

They also raised their concern about eschewing lease rents of both public and private water bodies that are making it impossible for small scale fish farmers to access those resources. They spoke about increasing usurpation of water bodies by a new breed of entrepreneurs who are taking over not only private water bodies by paying higher lease rents but also public water bodies through open bidding system introduced by the government. They also mentioned urgent need of reforming primary fisheries cooperatives, most of which are either non-functional or have been usurped by people with vested interest.

Last but not the least, they unanimously complained about rampant malpractices in distribution of Government assistance for fish workers and raised burning need for transparency. In depth interactions and discussions among participants on important livelihood issues of fish workers led to an overarching conclusion - The root cause of the present day wretched condition of fishing communities lies in the lack of their rights on water. The meeting resolved to raise the following demands - Give titles of water bodies to fishers and fish farmers; - Provide security of tenure to fish farmers on private water bodies - stop eviction, introduce regulated increment of rent; - Stop auctioning of water bodies - livelihood of fishing communities cannot be auctioned; - Prohibit entrepreneurs from taking over water bodies used by fish farmers; - Provide each fish worker with government Identity Card; - Provide each fish workers with comprehensive social security - Stop malpractices in distribution of government assistance - maintain full transparency. The fishing community representatives decided to convene district level meetings of fishing communities to prepare district level charter of demands through interactions with more fishers, fish farmers and fish vendors. They also decided to collect more memberships and submit memorandum of demands to district authorities.

## **West Bengal: 40 deaths in 2 months force Bengal govt to frame guidelines for fishing trawlers**

<https://www.hindustantimes.com/kolkata/40-deaths-in-2-months-force-bengal-govt-to-frame-guidelines-for-fishing-trawlers/story-UgBgiuNk5NrKHsgT9DAcwO.html>

"The deaths of 40 fishermen in three incidents of trawler capsizes in the Bay of Bengal in a little over two months have prompted the West Bengal government to formulate guidelines for fishermen, trawler owners and operators. Fisheries minister Chandranath Sinha said the guidelines will include identification of certain "safe shipping routes that will have to be mandatorily followed by trawlers and non-mechanised boats. The administration will also be strict about the use of life-jackets for all aboard these vessels that go out to fish in the coastal waters of Bengal. "The trawler owners and trawler in-charge will be held accountable on this count, the minister said.

According to the records of the state fisheries department, around 10,000 trawlers and boats set out for deep-sea fishing from the three harbours of Namkhana, Fraserganj and Kakdwip. Of these around 5,500 are trawlers and the rest are non-mechanised boats. A fisheries department official, who did not wish to be named, said that the marine division of the department has identified certain routes where most of the trawlers have capsized. "These routes are mainly adjacent to islands like Kendo and Jambu islands. These routes will be marked as unsafe and buoys will be anchored at these points to warn vessels, said the official. According to the president of West Bengal United Fishermen Welfare Association, Bijan Maity, every year mishaps take place during this time of the year when thousands of fishermen go out to the deep-sea braving choppy waters to catch Hilsa, a fish favourite of most of the Bengalis. "Some precautions and restrictions need to be imposed to prevent such mishaps. Let us wait and see how the measures announced by the department work out, said Maity. The Mamata Banerjee administration pays Rs 2 lakh compensation to the families of fishermen who die in incidents of trawler/boat capsizes.

## **West Bengal: Tiger prawns collected by women of the Sundarbans are a global delicacy, but collectors remain a neglected lot**

<https://www.firstpost.com/india/tiger-prawns-collected-by-women-of-the-sundarbans-are-a-global-delicacy-but-collectors-remain-a-neglected-lot-4934561.html>

"The next time you order tiger prawns at a fancy restaurant, spare a thought for Asharani Mondal and her 12-year-old daughter. They are two among the nearly two lakh faceless women who collect prawns in the Sundarbans, enabling diners the world over to enjoy this high-priced delicacy. Wading out at the crack of dawn in waist-deep saline water, a fishing net slung over her shoulder

and her daughter swimming behind her, dragging the net to catch tiger prawn seedlings they call "meen", the 30-year-old is the sole breadwinner of her family, comprising an ailing husband and two children. Asharani has been a prawn collector for five years now. Every time they head out for their work, Asharani and her daughter risk encounters with crocodiles and tigers lurking on the waters' edge in the swamps of the Sundarbans a cluster of tiny islands in the southern fringes of West Bengal's 24 Parganas district with a population of 45 lakh.

They also risk illnesses such as skin cancer, vaginal infections and bone- and knee-related health issues from wading in highly saline water for around six hours every day. Asharani's neighbours Pratibha Das, 23, Bhadrosree Mondal, 60, and Champa Mondal, 17 to name a few others are all in the business of collecting prawn seedlings. Some of them have been in this line of work for 40 years now, earning Rs 300 to 400 a day. They use age-old knowledge of climatic conditions, the nature of the tide and the swirling water flow, which indicates which parts of the river would provide a decent catch. "We just pray for low tide as during this time, we get more prawn seedlings," Asharani said. "We eagerly wait for purnima (full moon) and amavas (new moon) days that mark the waxing and waning cycle of the moon. Collecting seedlings during these times brings us maximum catch." These women also make their own lightweight nets, or jaals.

"It costs us around Rs 1,500 to Rs 2,000," said Pratibha. "We use lightweight jaal as collecting meen is a laborious and painstaking exercise. We even go out after dinner at times." Plethora of health issues, no hospital nearby Sitting on the dinghy or canoe, Asharani talks about the health problems caused by spending long hours in saline waters and mud. "I feel a constant burning sensation in my body," she said. "I also face certain gynaecological problems." Nearly all women in every household of the 45 blocks in the remote Sundarbans is involved in collecting tiger prawn seedlings. There is only one sub-divisional hospital 25 kilometers away from Basanti village, where Asharani and the others live, that they can visit for treatment. "I get sea fatigue and nausea, my limbs become motionless and numb at times. I also have to do the cooking, take care of my ailing husband and send two children to primary school. All of it takes a toll on my health," Asharani lamented. "Hundreds of people queue up for treatment at a small hospital that does not have proper equipment for checkups. The medical staff usually gives me painkillers.

There is no permanent relief as healthcare officials are not experienced enough to treat our diseases. Women and children are always at the receiving end." Sharp drop in seedling prices "Meen dhora", as they call the practice, was once profitable. The price of a thousand seedlings, which was Rs 600 till two years ago, has dropped to Rs 200. But due to the lack of alternative means of earning and in the absence of an effective government programme to support them, these women are left with no choice. "In my more than 40 years of association with this work, I have seen the plight of family members of women who were killed by crocodiles while netting fish," said Bhadrosee Mondal. "Neither the government nor anyone else thinks of us. People only express pity." Bikarna Naskar, who runs NGO Surojyoti Sangha the only NGO in the area

that work on the education of the fisherfolk's children explained that landless communities that had ""struggled to eke out livings elsewhere"" had made the Sundarbans their home.

""Fishing became the only choice for them, but fishing in the creeks running through the mangroves exposes their lives to risks, with the female fishing community the most vulnerable,"" he said. ""(West Bengal Chief Minister) Mamata Banerjee speaks of Kanyasree and Rupasree for the uplift of girls, but these are all a bluff. My NGO took up women's issues with the government but to no avail. The primary health centres at the village are run by quacks who have little knowledge about treating their diseases. The state government's efforts are limited to only announcing grand schemes."" The Assessment of Ergonomic and Occupational Health-related Problems was a study carried out among the female prawn seed collectors of the Sundarbans on 60 randomly selected women in the profession and 60 female control subjects from the Sajenakhali and Sandeshkhali blocks.

The study was carried out to evaluate and compare musculoskeletal disorders and physiological stress. It was found that most participants suffered from discomfort in the lower back (98 percent), knees (88 percent), shoulders (75 percent), ankles (70 percent) and feet (67 percent). Also, a 2013 study conducted in the Patharpratima block by the National Institute of Cholera and Enteric Diseases and international NGO Save the Children found that as much as 64 percent of the women in the Sundarbans were anaemic. Middlemen make a killing The biggest irony here is that bagda, or tiger prawns, are a big-ticket export item, earning West Bengal Rs 1,500 crore in foreign exchange. Sundarbans has the highest concentration of prawn hatcheries, and the middlemen who buy seedlings from these women make a killing. The seedlings these women collect are cultivated for four months, during which they grow before being sold in the wholesale markets of Canning, Barasat and Dhamakhali.

The prawn collectors separate the tiger prawn seedlings from other tiny fish and collect them in small vessels. The remaining seedlings are dumped. Tiger prawns from the sea lay their eggs at embankments and at the roots of mangrove trees. When the eggs hatch, the tiny micro-seedlings are caught in fine nets and taken to hatcheries, and these tiger prawns fetch up to Rs 1,000 per kilogram in the market. Debabrata Mondal, a social worker and associate of Naskar, said the government has not carried out any in-depth investigation into the health hazards these women face. Environmentalists, too, have been raising this concern. ""Nowhere in the world will you find such a community of the poor and suffering female fishing folk,"" said Santanu Chakravarty, an environmentalist and an expert on the ecology of the Sundarbans.

The organisation head of local fishermen, Malay Das, said his association has raised the issue with the government in vain. Even though the government created a department to deal with the affairs of the Sundarbans, with a minister in charge of taking care of the developmental needs of the delta, little has changed for these fisherwomen. The tigers of the Sundarbans get more attention lavished on them.

### **West Bengal: Trawlers return with 500 tonnes of hilsa**

<https://timesofindia.indiatimes.com/city/kolkata/traulers-return-with-500-tonnes-of-hilsa/articleshow/65411212.cms?from=mdr>

"Bengalis can look forward to a scrumptious Hilsa lunch on Independence Day with retail prices of their favourite fish set to dip on Wednesday, thanks to Tuesday's 500-tonne haul, the largest catch this season, at Digha and Diamond Harbour, the two key fishing harbours. Fishermen returned overjoyed early on Tuesday. In fact, with trawlers returning with 300 tonnes of hilsa at Diamond Harbour on Monday, retail prices plummeted by Rs 200 a kg at Lake Market, Gariahat, New Market and College Street Market on Tuesday itself. While Diamond Harbour recorded a catch of 400 tonnes, 100 tonnes were offloaded at Digha. The catch marked a turnaround from market depression as bad weather kept fishermen off the sea for more than half the time this fishing season. "The ideal weather for a good hilsa catch is cloud cover with slight drizzle, along with an easterly wind. We didn't get it even on days we could go to sea, said Shyamsundar Das, Digha Sankarpur Fishermen and Fish Traders' Association president. Bijon Maity, West Bengal Fishermen's Association joint secretary, said, "Ideal weather for a good hilsa catch pushed down prices of hilsas, weighing 500gm-900gm.

### **West Bengal: Govt imposes ban on catching young hilsa**

<http://www.uniindia.com/bengal-govt-imposes-ban-on-catching-young-hilsa/states/news/1317400.html>

"The West Bengal Government is now implementing strict rules on the catching of young hilsa. The activity is already banned in Bangla; however a few fishermen continue to do so. The issue with this is that catching the young fishes deprives people of getting eat the adult fishes, which are much tastier. It's a loss for fish-sellers and cultivators as well, because the big fishes garner much higher prices. It has been determined by experts that April 15 to June 14 is the period when most hilsa in India lay eggs. Hence these 60 days comprise the ban period, as determined by the Government of India – when catching hilsa in both rivers and seas is banned. Catching of the young fishes has been increasing over the last few years because of the increased demand. To cater to this demand, the State Fisheries Department has been increasing the rearing of hilsa. Also, more and more fish cultivators are being given incentives to cultivate hilsa.

### **West Bengal: Accidents at sea: Condoles death of 33 fishermen demands urgent administrative measures**

"In past few days a spell of disaster and gloom has descended upon the deep sea going fishermen communities of West Bengal and Odisha. From 16th to 31st July 2018 4 fishing trawlers have capsized in the coastal waters of West Bengal killing 27 fishermen. In Odisha 6 fishermen have died. Extremely inclement weather and rough sea with cyclonic wind induced

by a depression in the Bay of Bengal has, beyond doubt, been the direct cause of the disaster. But the disaster, by its sheer magnitude, has thrown up some basic questions - A. It is reported that fishing trawlers ventured into the sea in spite of repeated warnings issued by the Department of Fisheries. Why the trawlers violated the warnings? Is there any administrative mechanism to prevent fishing vessels from going to the sea after warning is issued? B. Did the boats have adequate numbers of life saving jackets on board? If not, why? The fishing vessels procure license on production of purchase receipts of life jackets. Were the receipts submitted by trawler owners genuine? Or, they were not taken on board in spite of procurement?

Is there any administrative mechanism to prevent fishing vessels from going to the sea without life jackets? C. Were the capsized trawlers sea worthy? Is there any administrative mechanism for regular check up of the trawlers. D. What amount of life insurance cover has been due to the crew of the trawlers? Does the owners bear any responsibility towards insurance cover of the crew of their vessels? The answers to the above expose the extreme lawlessness and administrative lapse prevailing in the mechanised fishing sector. The owners of the trawlers are saying that the crew members had ventured into the sea in spite of asking them not to go. Which is, in all probabilities, not true. The crew does not have the power to defy the order of the owner. Actually the owners need fish to make a profit and the crew are paid by percentage of the sale proceeds of the catch. So the economic interest provokes them to go to sea defying warnings.

The Administration says that they are helpless, they cannot prevent a trawler from venturing into the sea. This too is not true. The trawlers operate from fishing harbours. Fishing harbours are owned and run by the Department of Fisheries. It is criminal negligence on their part if they do not close the harbours even after warnings are issued. The boat owners say that they had bought life saving jackets for the crew but the crew did not take those on board. Actually, the boat owners have to show receipts of purchase of life jackets while procuring license from the authorities. There is a tendency to show fake receipts and there is no system of verification. There is no system of checking whether the boats are actually carrying life jackets or not. The Administration does not even make random checks; they say that they lack man power. There is also no system to check whether the trawlers are sea worthy or not. It is another criminal negligence on the part of the administration to issue licenses to the trawlers without verifying their sea worthiness.

The fish workers on board have very low insurance cover for their lives, though deep sea fishing is considered as one of the most hazardous jobs in the world. Thus, more often than not, the families of deceased accident victims lack minimum provision to pull through. The Fisheries Department has a provision of providing Rs. 2 lacs to each family of the deceased and every fish worker on board has to show that he has a personal accident insurance cover of at least Rs. 1 lac. The owners of the fishing vessels bear no responsibility towards this. One very important observation in this regard is that though India is a signatory to the ILO 188 Convention in the Work in Fishing, which has now been globally ratified, no initiative is observed till date to

implement its provisions for occupational safety of fish workers. Another observation is this that the fishermen associations for the mechanised fishing sector are actually associations of boat owners and not of common fish workers who work on board.

As such the common fish workers lack the capacity to voice and address their problems. This results in almost absolute lawlessness in the sector. No written agreement with or appointment of workers who work on board, irregularities in payment, occupational entitlements including safety measures, health and life insurance covers. In view of the above Dakshinbanga Matsyajibi Forum (DMF) demands - - Immediate rescue of lost fishermen. - Immediate payment of Rs.10 lacs by the Government to the families of the deceased. Henceforth every sea going fisherman will have to be provided with an insurance cover of Rs. 10 lacs each to be made jointly by the Fisheries Department and the boat owner at the time of issuing license. - Cancellation of license of the fishing vessels that went for fishing defying weather warning. - Effective closure of harbour once weather warning is issued not to go for fishing in the sea. - Cancellation of the license of the fishing vessels which did not / do not have sufficient numbers of good quality life saving jackets on board while fishing. - Enforcing keeping of sufficient numbers of good quality life saving jackets on board through sudden random checks and cancellation of license of erring vessels. - Putting in place a system of checking sea worthiness of the fishing vessels while issuing license for fishing. - Coast Guard and coastal police are to be on high alert once weather warnings are issued, they should have the capacity for rescue operations under inclement weather. - All deep sea going fishing vessels should have installed mechanism for auto transmission of signals to detect their location - it is necessary for both prevention from fishing during inclement weather and rescuing. - Implementation of provisions of ILO 188 Convention in Work in Fishing.

### **West Bengal: New initiatives to increase Boroli fish production**

<http://www.uniindia.com/~new-initiatives-to-increase-boroli-fish-production/States/news/1313218.html>

"The Fisheries Department is going to cultivate Boroli fish in a big way. This tasty fish is endemic to the rivers of north Bengal but over the years, for various reasons, the numbers have dwindled. To solve the problem of numbers, the Fisheries Department has devised a process to cultivate the hatch-lings in lakes. A special hatchery is being constructed in Tufanganj-1 block of Cooch Behar district for the purpose, at a cost of Rs 22 lakh. More such inland hatcheries would be set up both in Cooch Behar and Jalpaiguri districts, the work for which had started last year. After growing big enough, the fishes would be released in batches in the waters of the Teesta and Torsha, the traditional homes of the fish.

### **West Bengal: Hilsa fish reaching Kolkata shrinking in size**

<https://timesofindia.indiatimes.com/city/kolkata/hilsa-fish-reaching-kolkata-shrink-in-size/articleshow/65197608.cms>

"The season of Hilsa is here, but something is amiss about the soft, succulent, silvery delight, without which no monsoon platter is complete. It has shrunk in size. Hilsa supply has been scarce till this week. With import from Bangladesh having stopped six years ago, Myanmar is the lone source. But the Hilsa season in Myanmar is a different one – February-March. As a result, the imported fish are stored for the local season, which begins in July. "The fish naturally lose freshness and taste. It cannot be compared to the fresh catch that comes from Digha, Frazerganj or Sunderbans. But this time, the Myanmar stock is exhausted so the fresh supply is only source. But it will leave a bad taste in the mouth for most, said a retailer.

### **West Bengal: Search continues for four missing fishermen**

<https://timesofindia.indiatimes.com/city/kolkata/search-continues-for-four-missing-fishermen/articleshow/65098586.cms>

"The bodies of 15 fishermen, who had been missing since three trawlers capsized on the Bay of Bengal on July 16, were recovered on Sunday after a search by the coast guard and fisheries department officials. Search is still on for four other missing fishermen. The adverse weather condition have been forcing fishermen to return from the deep sea from the very beginning of this season. On July 16, three trawlers in which fishermen had ventured out in the sea for fishing, capsized. Seventeen fishermen from one of the trawlers were rescued. The trawler, however, is yet to be found. But another 19 fishermen, who were in the other two trawlers went missing. One of the two capsized trawlers have also been found. The victims are all residents of Kakdwip and Frasergunge areas. Bijan Maity, secretary of West Bengal United Fishermen Association said search by the coast guard and fisheries authorities have been going on for the past one week to trace the missing fishermen. "The bodies of 15 fishermen were recovered and search will go on to trace the rest of missing fishermen, he said.

### **West Bengal: Flouting rules, fishermen flood markets with smaller hilsas**

<https://timesofindia.indiatimes.com/city/kolkata/flouting-rules-fishermen-flood-markets-with-smaller-hilsas/articleshow/65111875.cms>

"The hilsa season is here, but something is amiss about the succulent, silvery delight, without which no monsoon platter is complete. The fish has shrunk in size. About 60%-70% of the catch that reached Kolkata over the last three days weighs less than 500g. The smaller hilsas don't quite taste like the adult ones, agree both buyers and sellers. About 500 tonnes of hilsa reached Kolkata from Digha and Diamond Harbour between Thursday and Saturday. It has pushed down the price a tad. A 500g hilsa is now selling for Rs 550-600. While the supply has made fish lovers happy, the decrease in the size of the fish has come as a dampener.

Wholesellers and fish experts believe indiscriminate fishing is responsible for the smaller hilsas flooding the market this time.

Secretary of Fish Importers' Association Anwar Maqsood said, "This trend started a few years ago with smaller hilsas being caught in large numbers. Over the years, despite laws banning netting of small fish, nothing has changed. Hilsa supply had been scarce till this week. With import from Bangladesh stopped six years ago, Myanmar is the lone source. But the hilsa season in Myanmar is from February to March. So the imported fish are stored for the local season which begins in July. "The fish naturally loses freshness and taste. But this time, the Myanmar stock is exhausted, said a retailer. It is illegal to catch hilsas weighing less than 500g. A net size has been specified to ensure that the smaller ones are not caught. But lax enforcement of the rules has failed to check indiscriminate fishing. Oceanographer Sugata Hajra, who has been part of several studies on the dwindling hilsa catch, said, "Hilsas are caught randomly in Bengal. Fishermen often break the rules. As a result, the fish are not able to grow. Also rampant fishing at the mouth of the sea has not spared those that are on the way to lay eggs in the rivers. "This routinely happens every year, he said. The average size of the hilsa will remain below 600g in Kolkata unless fishing rules are adhered to immediately, said a pisciculture (fish farming) expert. "Adult hilsas swim into the rivers to lay eggs and swim back once the spawns attain a weight of around 300g. The only way out is to restrict the size of the fishing nets to ensure that smaller hilsas are not caught, Hajra said.

### **West Bengal: Fishermen had not received any weather alert**

<https://www.telegraphindia.com/calcutta/eight-fishermen-found-dead-246280>

"The bodies of eight fishermen, who went missing after three trawlers capsized in the Bay of Bengal on Tuesday, were fished out from the sea on Thursday. Nineteen fishermen had gone missing on July 16 after the trawlers capsized. One of the three trawlers was found on Thursday with a fisherman's body on board. Another trawler was found broken and the third is yet to be traced. The India Coast Guard, which carried out the search operation, handed over the bodies to the fishermen's association in Kakdwip. Bijan Maity, the secretary of the association, said eight of the seven of the victims had been identified. All of them were from Namkhana. Kuldip Singh Sheoran, the inspector general of the Coast Guard's north-east region, said fishermen had been advised not to venture into the deep sea because of the inclement weather and choppy sea conditions. A Met official said the alert message had been issued on July 15, a day before the fishermen ventured into the sea ignoring the warning.

"The alert has not been withdrawn," he said. Maity, however, said the fishermen had not received any weather alert. "The advice has come after the trawlers capsized," he said. A member of the fishermen's association said this was the peak season for hilsa. "If they feel the sea is safe, we will not be able to stop them. Their families survive on their catch," he said.

Around 250 trawlers left from Kakdwip, Namkhana and Frazerganj on July 16. Witnesses to the capsizing have said that the sea had been calm on Tuesday morning but became choppy around 1pm. The fishermen who survived admitted they had no option but to watch the capsizing. "We were helpless. Had we tried to go near them, we would have met with the same fate," a fisherman told police. A Coast Guard Dornier aircraft from Calcutta and a ship are continuing the search for the remaining fishermen. "A hovercraft is searching the coastal areas," Singh said. Man electrocuted A 28-year-old man, who worked in a detergent company, was electrocuted on Thursday while at work in Kamarhati, Barrackpore. Jagannath Dutta, a resident of Kankinara, was switching on a pedestal fan when he was electrocuted. Police sent his body for post-mortem.

### **West Bengal: 19 fishermen missing after trawlers capsize in Bay of Bengal**

<http://www.newindianexpress.com/nation/2018/jul/17/19-west-bengal-fishermen-missing-after-trawlers-capsize-in-bay-of-bengal-1844668.html>

"At least 19 fishermen have gone missing after their boat capsized in the sea, off Frazerganj harbour, in Sundarban area of south Bengal, officials said today. A senior police officer said a hovercraft and an airplane have been pressed into service to look for the missing persons. Apart from that, coast guard personnel, police officers and members of a fishermen association have also gone out into the sea for the rescue operation, Sunderban Superintendent of Police Tathagata Basu said. Bijan Maity, the secretary of West Bengal United Fishermen Association, said the men, mostly from Namkhana and Kakdwip areas of South 24 Parganas district, set sail into the Bay of Bengal around 10am yesterday as there were "no Met department warnings on radio". Around 4pm, however, the sea turned rough and huge waves, accompanied with gusty winds, overturned several trawlers in the sea, he said. "Although many trawlers returned to safety, three boats - MV Malleshwar, MV Joykishan and MV Maa Shibani - capsized in the sea. Around 10 fishermen of MV Joykishan and six of MV Malleshwar, and three more of some other trawlers have gone missing," Maity said. The Met office website, however, shows that West Bengal fishermen were advised against venturing into the sea yesterday.

### **West Bengal: Formalin in fish: West Bengal government warns of stern action**

<https://www.thehindu.com/news/national/other-states/formalin-in-fish-west-bengal-government-warns-of-stern-action/article24427646.ece>

"In the wake of reports about the presence of formalin in fish, the West Bengal government has started State-wide collection of samples and monitoring of major fish markets. "We will ensure that no one can sell such fish in Bengal... stern action will be taken against those who are found to be selling formalin-laced fish. State Minister of Fisheries Chandranath Sinha said. The development comes after fish samples tested positive for formalin in Kerala, Tamil Nadu and Assam. The Assam government on July 10 imposed a 10-day ban on import of fish

from Andhra Pradesh and other States.

### **West Bengal: GPS tracker plan for Sunderbans boats**

<https://timesofindia.indiatimes.com/city/kolkata/gps-tracker-plan-for-sunderbans-boats/articleshow/65001844.cms>

"A GPS-based boat tracking system may soon aid the foresters in checking man-animal conflict in the Sunderbans, the mangroves delta where at least 15-20 human lives are lost on an average to tiger attacks every year. This is an official figure, the actual figure is higher. With about 700 boat-licence certificates to carry out fishing activities in circulation in the region, the foresters have called a meeting this week to discuss the feasibility of such a move. WWF-India in its report 'Status and Monitoring of Tigers in Sunderbans Biosphere Reserve' has recommended installation of GPS-based applications, like vessel monitoring surveillance that tracks and monitors fishing boats and trawlers anytime, anywhere. TimesView: This move, if implemented properly, can provide a solution to the problem. Man-animal conflict harms both man and animal; it's only that the impact on human beings is felt gradually over time and not immediately and so tends to be taken less seriously. So, how will the system work? WWF-India's Sunderbans chapter head Ratul Saha said: "GPS trackers on boats or trawlers can be linked to a central server at the Sajnekhali office, the entry point to the Sunderbans Tiger Reserve (STR).

The precise locations of the boats can be displayed on the system and automated alerts can be sent out to the boats when they approach the boundaries of restricted areas. Recently, a group of fishermen were caught on camera chasing and poking a tiger when it was crossing a river near Kendo Island. The new move, according to Saha, will help foresters manage such situation more effectively once implemented. STR field director Nilanjan Mullick said: "It's in a proposal stage. We will have to first find out how viable it is technically. The report also says that fishing-related offences are on the rise in the mangroves.

Already, eight persons have been killed and three injured in tiger attacks in the Sunderbans this year. In majority of the cases, the fishermen had set out on illegal fishing trips. The report also alerted that forest compartments with least degree of protection have witnessed reduction in forest cover by 12% in the past one decade, whereas the figure is about 3.75% for forest compartments with the highest degree of protection. "This could be due to anthropogenic factors, the report said. The report also revealed that fishing-related offences were recorded more in Sajnekhali Wildlife Sanctuary area because of its proximity to fringe villages.

### **West Bengal: Govt to preserve rain water to boost pisciculture in drought-prone areas**

<http://www.millenniumpost.in/kolkata/govt-to-preserve-rain-water-to-boost-pisciculture-in-drought-prone-areas-309540>

"Bengal government is taking initiatives to increase fish production in the drought prone areas of the state by preserving rain water. This will assist the local fishermen to increase the production of fishes. In a bid to boost pisciculture, the state fisheries department will set up more watersheds in the drought prone districts like Bankura, Purulia, Birbhum, West Midnapore and some other districts, where considerable amount of rain water is wasted. According to the experts, if rain water is harnessed by small dams, it can be used for pisciculture, cultivation and also domestic purposes during the lean season. The department is taking up comprehensive development schemes to enhance fishery infrastructure in the drought prone areas to improve the overall socio-economic condition of fishermen in the region.

A watershed is defined as the land that contributes water to a given site. It is a line that connects all the highest points in the area. A watershed provides a natural environmental unit for planning a developmental initiative. The watershed mapping in the districts of Purulia and Bankura has been done to delineate watershed boundaries and suggest the suitable sites for check dams for water harvesting. A digital map of water bodies was already created by the Fisheries department. The GIS based map of water bodies will help in managing e-governance in the fishery sector. Web based availability of GIS maps will improve decision making process in a decentralised set up, thereby creating a scenario of efficient management. Moreover, water stored in check dams also helps in reaching the ground water through bottom percolation in the subsurface. Watershed development thus plays an important role in uplifting the rural economy, increasing fish production, agricultural production, afforestation, water, soil and land management in the drought prone areas.

Co-operative farming is also given paramount importance to strengthen co-operative fish farming. The schemes will engage unemployed rural youth that will uplift the rural economy. The department has chalked out a detailed plan to make West Bengal self sufficient in fish production and to increase export. The state fisheries department is also keen on the implementation of the People Participatory Programme (PPP) method for the sustainable development of fisheries. The purpose of PPP is to develop an operational method to increase participation of local fishermen in fish production, storage and distribution. This will also prove handy for the fisher folk to organise self-help groups and co-operatives which in turn will increase their income. They will be given access to the existing fishing ponds and fishery infrastructure.

### **West Bengal: Bengal Govt organises workshop for women engaged in fishing sector**

<http://www.uniindia.com/~bengal-govt-organises-workshop-for-women-engaged-in-fishing-sector/States/news/1283558.html>

"West Bengal Fisheries Department recently organised a workshop, at its office in Haldia block of Purba Medinipur district, to train women engaged in the fishing sector to make and repair fishing nets. This would add another dimension to their livelihoods, a state department

official on Monday said. The weekly workshop (since the women had to make time out of their work) was run for oneand-a-half months. Making a cast net takes around 15 days and it costs Rs 500 to 550. These are usually sold for around Rs 3,000. Hence, the women can earn a decent income.

### **West Bengal: 12 fishermen held for hounding a Royal Bengal Tiger in Sunderbans**

<https://indiablooms.com/health-details/W/3723/west-bengal-12-fishermen-held-for-hounding-a-royal-bengal-tiger-in-sunderbans.html>

"Based on a complaint lodged by the state forest department, we have nabbed twelve fishermen from Sunderbans for poking a tiger, which was crossing Raimangal river, with a bamboo or stick from their trawler," a local police official told IBNS. Earlier on June 29, a video footage came to public where it was seen that few fishermen were poking a mature Royal Bengal Tiger with a bamboo or stick while the big cat was swimming across a river in the Sunderbans. Examining the video clip, the forest department identified those fishermen as well as their trawler and lodged a complaint with the Sundarban Coastal Police Station on July 2. "We had received the video footage on last Friday (June 29) and after examining it, we found that the tiger was swimming on its own way and the fishermen drove their trawler straight towards it with an intention to hound the animal," a forest department official told IBNS. "After lodging a complaint with the local police against the 12 fishermen and the owner of 'MV Jaba', we assisted the cops in finding them," the officer added. The fishermen, who have been charged under few sections of Wildlife Protect Act, will be produced before a local court in Kolkata's Alipore on Thursday.

### **West Bengal: Seed production of *Mystus gulio* to provide livelihood option to farmers in Sundarban**

<http://www.uniindia.com/~seed-production-of-mystus-gulio-to-provide-livelihood-option-to-farmers-in-sundarban/States/news/1277702.html>

"Seed production and culture of *Mystus guliolocally* known as Nuna Tengra can provide an assured livelihood option to small and marginal farmers of the Sundarban in West Bengal. *Mystus gulio* is a commercially important brackishwater catfish, which is an important small indigenous fish species (SIS) of the Sundarban delta. It can tolerate a wide range of salinity and has high market demand with price ranging Rs. 200- 500/kg. Due to overexploitation and environmental degradation, availability of seeds from nature has been decreased. In order to conserve the species, and promote scientific farming and diversified aquaculture, Kakdwip Research Centre (KRC) of ICAR-Central Institute of Brackishwater Aquaculture (CIBA) has developed a complete package comprising of homestead/ backyard hatchery technique and grow-out culture of this fish in brackishwater system. Breeding technology package of *Mystus gulio* in backyard hatchery system comprises of broodstock development, maturity assessment, induction

of spawning, incubation and hatching of eggs, and larval rearing in brackishwater environment. Total cost of production of a 30-day old seed is only Re. 0.30 and it has a market selling price of Re.1, which is economically lucrative. Cost effective backyard hatchery operation requires less capital and less labour. The woman member of a family can easily manage these less cumbersome and easy activities. A small farmer with a minimum operational cost of Rs 20000 can easily earn Rs 42000 in a breeding season of six months. Many rural people, small and marginal farmers may get employment through production and supply of seeds.

### **West Bengal: Sinking ship threat to marine life in West Bengal's Haldia**

<https://www.indiatoday.in/india/west-bengal/story/sinking-ship-threat-to-marine-life-in-west-bengal-s-haldia-1272968-2018-06-29>

"Oil spill threat from MVSS, the cargo ship that caught fire in the Bay of Bengal has now raised dangers for hilsa breeding and marine conditions around Haldia area in East Midnapore district of West Bengal. MVSS vessel, the fire-hit cargo ship, sailing from Krishnapattam to Calcutta reportedly developed a crack on the starboard. The salvage operation team tried to dock it in Haldia. The cargo vessel caught fire on June 14, at midnight. Water ingress into the ship has led it to tilt on the right side. Presently sited at the Sundarbans, the heavy vessel is not likely to be towed, as reported by the salvage operation team. Indian Coast Guard Inspector (Northeast region) Kuldepp Singh Sheoran , after an inspection carried by an ICG aircraft Dornier, said that no major oil spill has been reported till Wednesday. Further additions from the salvage team stated that since it is being difficult to tow the vessel any further the cargo has to be unloaded to avoid oil spills. A severe threat lies in this season as the warm backwaters of the delta are home to Hilsa. Earlier this week, fishing trawlers were sent back. The unloaded cargo is to be handed over to the salvage operation team at ICG Air Enclave, Kolkata for further transportation to Haldia. ""Oil spill reduction measures are being taken by Coast Guard operation teams, pilferages are less likely to occur since the oil tanks are being removed to prevent spillage or damages on a greater scale,"" Sheoran added. Four recovery ships have been sent from Mumbai for recovering the ship and check on the damage, however, these ships are yet to reach the sinking cargo.

### **West Bengal: Fisheries Dev Corp impresses on national platform'**

<http://www.uniindia.com/~bengal-s-fisheries-dev-corp-impresses-on-national-platform/States/news/1273060.html>

"The State Fisheries Development Corporation (SFDC) of West Bengal recently made a mark at a seminar-cum-fish festival organised by National Fisheries Development Board in Visakhapatnam. SDFC featured its saline water fish culture in ponds, that it has developed in Henry's Island. Managing director of SDFC said the delegates were highly impressed by this innovation. The fish cultivated in the state also received appreciation in the exhibition organised during the event. The chefs from Bengal cooked several famous Bengali dishes using the fishes from the state, which were applauded greatly.

**West Bengal: Government to set up training centre for fishermen to make them self-employable**

<http://knnindia.co.in/news/newsdetails/sectors/wb-government-to-set-up-training-centre-for-fishermen-to-make-them-self-employable>

"With a view to make fishermen self-employed, the West Bengal government has for the first time decided to set up a training centre for fishermen to train them in cultivating fish. In this regard, State Fisheries Development Corporation (SFDC), which is under the State Fisheries Department, will set up the training centre at a cost of Rs 2.27 crore. It will be located on Henry's Island in South 24 Parganas. The training modules include the ways to cultivate fish, examine their health, and if found to be suffering from some disease, examine the water and soil of the place where the fishes breed. Experts in specific fields will be employed to provide training to fishermen of the state. Under this, free training will be provided to fishermen covered under various Government schemes. Besides, other fishermen as well as cooperative societies associated with fish farming would be able to acquire training too, at a minimal cost. At a time, 50 fishermen will be able to acquire training at the centre. This training centre becomes particularly important in the context of the State Government's recent stress on cultivating many new varieties of fish, which are often more profitable. Later, at least two more such training centre would come up, one in the district of Purba Medinipur and another either in north Bengal or south Bengal.

**West Bengal: Bad weather, vessel fire likely to hit supply, make dear hilsa dearer**

<https://timesofindia.indiatimes.com/city/kolkata/bad-weather-vessel-fire-likely-to-hit-supply-make-dear-hilsa-dearer/articleshow/64628770.cms>

"Supply of fresh hilsa could dip, and the price of stored hilsa could increase in the coming days with fishing trawlers reeling under the twin impact of inclement weather and the cargo vessel fire in the Bay of Bengal. After the seasonal ban on fishing was lifted on June 15,

around 2,500 trawlers from Diamond Harbour ventured out into the sea. But they returned in a day due to harsh weather conditions and the ship blaze that started on Wednesday. This may result in the shortage of fresh hilsa in the city markets, said the fishermen's unions. Usually, around 12 to 15 fishermen in each trawler stay back in the deep sea for 10 to 12 days. But this time, many trawlers returned within a day and more are on their way back. West Bengal United Fishermen Association joint secretary Bijon Maity said they have been hit by the twin impact in the beginning of monsoon. The cargo vessel has been stranded in the Bay of Bengal near Bangaduan Island, a popular fishing zone. "Most trawlers are returning from deep sea as the South 24 Parganas district administration has asked fishermen not to venture out to the zone for safety reasons, Maity said. According to local fish market unions, it is not that there is no hilsa in the city, as adequate amounts are kept in storage. Lake Market fish union secretary Amar Das said some hilsa has been supplied in the city markets but it was not adequate to meet the high demand, especially during Jamai Shasthi on Tuesday. According to market rates, 600g to 700g of fresh hilsa is priced at Rs 1,000 and the same amount of fish from storage costs Rs 600. With fresh fish supply likely to be affected, the price of stored hilsa could increase by Rs 50 to Rs 100 per kg during Jamai Shasthi, said union representatives.

**West Bengal: Crocodile swallows lone fisherman while catching fish in river, 2nd case in same river in 10 days**

<http://www.uniindia.com/crocodile-swallows-lone-fisherman-while-catching-fish-in-river-2nd-case-in-same-river-in-10-days/states/news/1263794.html>

"A lone fisherman has been devoured by a crocodile while fishing in Jagaddal river in Sundarbans of South 24 Parganas, police investigating the disappearance of Anukul Maity today said. This was the second such case in ten days in the same river. Forty-six-year-old Anukul Maity, a resident of Satyadaspur, disappeared while fishing in the riverine water on Sunday afternoon at Patharpratima. Local people said the poor man has been gobbled up by the crocodile. A search since yesterday could not trace the remains of the fisherman. On June 8 last, the 55-year-old fisherman, Jareswar Mondal, was killed by the crocodile while fishing into the Jagaddal river. The eye witnesses said Jareswar Mondal, a resident of Bonoshamnagar village of Patharpratima, while catching shrimps was caught by the crocodile, which dragged him down the deep water. He was never seen despite a search was conducted by his fellow fishermen.

**West Bengal: Fishermen oppose CRZ draft**

<http://www.thehindu.com/news/national/other-states/fishermen-oppose-crz-draft/article24139784.ece>

"An organisation of fishermen in West Bengal has written to the Central government to scrap the draft Coastal Regulation Zone (CRZ) Notification 2018, alleging that it would have adverse effects on their livelihood. Citing that the notification proposes to allow CRZ-IV, which

comprises coastal water, transfer of hazardous substances from ships to ports, projects related to defence and atomic energy, the association has claimed that “it would destroy the fishing areas of small and traditional fishing communities near shore water. The letter sent by representatives of Kanthi Mahakuma Khoti Matsyajibi Union and Dakshin Banga Matyajibi Forum to officials of the Ministry of Environment, Forest and Climate Change has raised objections stating that the proposed changes would increase “pollution load in the sea and encroachment in the CRZ. Debasis Shyamal, DMF vice-president, said the 2018 draft is silent on rights of small fishermen.

### **West Bengal: Lightning kills 10 in India’s West Bengal**

[http://www.xinhuanet.com/english/2018-06/13/c\\_137250943.htm](http://www.xinhuanet.com/english/2018-06/13/c_137250943.htm)

"t least 10 people were killed and several others injured after lightning struck them at different places in India's eastern state of West Bengal, officials said Wednesday. The lightning struck Bankura, Hooghly, West Midnapore, Birbhum and North 24 Parganas districts on Tuesday. ""Yesterday lightning killed 10 people and injured several others in the state,"" a disaster management official said. ""Four people were killed in Bankura district, three in Hooghly, and one each in West Midnapore, Birbhum and North 24 Parganas."" On Tuesday the state received its first major spell of rain from the southwest monsoon. The downpour led to severe water logging and a delay in train services in Kolkata city. India's Meteorological Department has predicted heavy rain at isolated places in West Bengal over the next 24 hours, and has advised fishermen to avoid venturing into the sea. Last month storms accompanied by lightning and rains killed over 250 people and injured more than 400 in five states.

### **West Bengal: ‘It will affect our livelihood’: Fishermen write to Centre over coastal notification**

<http://indianexpress.com/article/cities/kolkata/it-will-affect-our-livelihood-fishermen-write-to-centre-over-coastal-notification-5213744/>

"Two fishermen groups has written to the central government, raising several objections to the Draft Coastal Regulation Zone (CRZ) Notification, 2018, issued by Ministry of Environment, Forest and Climate Change. A letter addressed to the director of the ministry (IA-III Division) Arvind Nautiyal was submitted to East Midnapore district magistrate office on Monday by representatives of Kanthi Mahakuma Khoti Matsyajibi Union and Dakshin Banga Matyajibi Forum (DMF). According to DMF, changes in the CRZ notification issued in April this year will have adverse effect on the livelihoods of fishermen in the coastal region. Speaking to The Indian Express, DMF vice-president Debasis Shyamal said, “The Centre has gone silent on the rights of fishermen in its new notification.

The draft also violates Environment (Protection) Act, 1986, which states that the central government shall take all measures to protect and improve the quality of the environment. The present CRZ, 2011 notification says that setback zones be demarcated, livelihoods be protected and unchecked development curtailed. The draft CRZ, 2018 notification overturns these by removing safeguards, facilitating development and in turn paving the way for the Sagarmala programmes. Environmentalist Soumendra Mohan Ghosh said, "If construction is undertaken in the regulation zone it will lead to air, water and noise pollution. State minister for fisheries Chandranath Sinha said, "We are looking into the matter... But first we need to find out what is there in the new notification... If need be we will bring the matter to the notice of Chief Minister Mamata Banerjee, Sinha told The Indian Express.

### **West Bengal: Costly fuel may burn whole in pockets this Jamai Sashthi**

<https://timesofindia.indiatimes.com/city/kolkata/costly-fuel-may-burn-hole-in-pockets-this-jamai-sashthi/articleshow/64528202.cms>

"Parents-in-law gearing up to treat their sons-inlaw to a sumptuous spread of mustard Hilsa and other Hilsa recipes for Jamai Sashthi on June 18 may find it heavy on the pocket. The hike in diesel prices is set to push up retail price of the favourite fish of Bengalis by Rs 80 to Rs 100 a kilogram. The peak Hilsa season starts from mid-June, just a few days before jamai sashthi. That's when fishing trawlers which venture out on trips return to shore with their catch. Each short trip needs 800 litres of diesel, while long trips require 1,600 litres. Around this time last year, say fishermen, diesel cost stood at Rs 58 a litre. Thus, the jump to over Rs 71 a litre has raised the fuel cost for a short trip by Rs 10,400 and twice for a long one. After each trip, trawlers return with a catch of 1.5 quintals to 2 quintals of Hilsa along with other fish. This alone, say fishermen will push up the wholesale price of Hilsa by at least Rs 52 a kilogram. This Hilsa then has to be transported to Kolkata markets. This cost will rise as well, courtesy the sky-rocketing diesel prices. Those in the Hilsa trade, from fishermen to retailers, say that all this will push up the retail price of Hilsa by at least Rs 80 a kilogram. Fishermen say, around mid-June last year, the wholesale price of the fish weighing between 500 grams to 600 grams ranged from Rs 500 to Rs 600 a kilogram and the larger variety of Hilsa weighing between 800 grams to 900 grams was priced between Rs 800 to Rs 900 a kilogram. The retail prices ranged from Rs 800 to Rs 900 a kilogram for the smaller Hilsa weighing 500 grams to 600 grams and Rs 1,100 to Rs 1,200 a kilogram for the larger variety. West Bengal Fishermen's Association secretary Bijon Maity said, "The hike of Rs 13 per litre of diesel will have a spiralling effect on the retail price of Hilsa.

### **West Bengal: Government releases guppy fish across water bodies to combat dengue**

<http://www.newindianexpress.com/nation/2018/jun/07/west-bengal-government-releases-guppy-fish-across-water-bodies-to-combat-dengue-1824914.html>

"To combat dengue in south Bengal, the State Fisheries Department, under the supervision of the State Fisheries Development Corporation (SFDC), is releasing guppy fish in the water bodies, drainage canals, agricultural canals and other similar structures of the region, both in the rural and urban areas. Till May, more than 11 lakh guppies have been released at a cost of more than Rs 11 lakh. A few lakh more were released in the first week of June. Of the more than 11 lakh, 1.26 lakh have been released in the area under South Dum Dum Municipality and 1.03 lakh in Bidhannagar Municipality. The municipalities of Maheshtala and Sonarpur have released 50,000 each in the areas under their jurisdiction. About 40,000 each has been released by the municipalities of Bardhaman, Guskara, Memari, Kalna, Dainhat and Katwa. The municipality of Kanchrapara has released 21,600.

### **West Bengal: Over-exploitation is threatening to take the prized hilsa away from West Bengal's waters**

<https://scroll.in/article/878181/over-exploitation-is-threatening-to-take-the-prized-hilsa-away-from-west-bengals-waters>

"The number of fishing boats operating in the northern Bay of Bengal is in excess of the sustainable limit and there has been a persistent decline of fish catch. Tajen Das's voice is full of foreboding. It mirrors the choppy waters of the Bay of Bengal as he spruces up his fishing boat and gear for the upcoming hilsa (*Tenualosa ilisha*) season in the monsoons. "My men are ready. My boat is ready. The fishing nets are in place. We are waiting for June when the monsoons begin. But how long will the hilsa survive in Bengal? Said Tajen Das, a fisherman associated with a south West Bengal's fishermen forum. "The reign of the 'king of fish' may soon be over. The highly sought-after silvery trans-boundary fish that travels between the saline seawater and the sweet river water is not only integral to the socio-economy of West Bengal in east coast of India and neighbouring Bangladesh but also to diplomatic parleys. A hilsa fish can weigh up to 2.5 kg and is rich in Omega-3-fatty acids. Inspiring poets and artistes, the "darling of waters is imperiled by over-exploitation in northern Bay of Bengal.

What has dismayed Tajen Das and his co-workers is a persistent decline in hilsa catch in West Bengal waters despite revamped efforts. "It is extremely unnerving to watch the catch dwindle even as we press more boats into service, said Tajen Das. Unsustainable fishing pressures In a new study, scientists questioning the sustainability of hilsa fishing practices in the northern Bay of Bengal region suggest that an excess of licensed fishing boats (mechanised boats or trawlers and non-motorised boats) are to blame for the plummeting stock. The study states that between 2002 and 2015, even though the number of boats engaged in fishing increased by 25%, the hilsa catch dipped by 13%. "At present, the number of boats operating in the northern Bay of Bengal has gone beyond the sustainable limit resulting in over-exploitation of the hilsa population, said Isha Das of Jadavpur University, lead researcher of the study. "We need to draw a line. Hilsa fishery is being significantly over-exploited in the West Bengal waters. Strict regulations are

needed to curb overfishing. Overfishing happens when more fish are caught than the population can replace through reproduction.

Using available data, sample collection and computer modelling, the team estimated 25,440 tonnes as the sustainable yield limit for hilsa fishery annually in northern Bay of Bengal region of West Bengal, while the maximum number of boats that may be deployed to achieve this catch is 3,987. “We wanted to examine how we could increase the catch without impacting the fish stock. So one way was to determine an acceptable limit of fishing with boats as one of the parameters. In practise, there are other factors as well that come into play as oceans and rivers are natural systems and are dynamic in nature, said Isha Das. Referring to the West Bengal Government data, the researcher clarified that though in the last several years, except for 2010, the annual catch has remained below 25,440 tonnes, the number of fish removed from the population through interaction with fishing (fishing mortality) has been high and the number of boats have gone up.

“This has had a negative impact on the stock in subsequent years, said Isha Das. Currently, the study states, fishing pressure from the number of boats legally deployed is almost three times as much. When asked about the over-exploitation of the fish in northern Bay of Bengal, a peeved Tajen Das held the businessmen-fishermen-government nexus responsible. “We fishermen have to make a living somehow and we are operating boats that belong to big businessmen. Each businessman owns about 12 to 13 boats. They are here to make money because hilsa fetches good money because of a drop in stock, Tajen said. The state government, he claimed, argues that some boats are lost or wrecked on sea and so new vessels are needed. The hilsa supremacy Like the salmon, hilsa live most of their lives in salt water and swim to freshwater and estuarine waters to spawn (release eggs).

Hilsa start swimming upstream during the southwest monsoon when the rivers swell. The hatchlings go back to the sea and repeat the cycle. They can cover as much as 70 km in a day. The species is widespread – ranging from the Persian Gulf, Red Sea, Arabian Sea, Bay of Bengal and Vietnam Sea to China Sea. The hilsa fishery in India and Bangladesh is dependent on hilsa harvested from a particular area: the Indo-Gangetic and Brahmaputra river basins, said study co-author Sugata Hazra, director, School of Oceanographic Studies, Jadavpur University. The species breed throughout the year with peak activity in October-November and minor spawning phases in February-March and July-August in various rivers and estuaries in the region. Between July and October, large size groups of fish are abundant in the riverine area. In general, about 80% to 90% of the hilsa is captured during monsoon months (July to October) coinciding with the upstream movement to the rivers and estuaries. About 95% of the catch of this commercially important species comes from India, Bangladesh and Myanmar.

Annual average production of hilsa in India is 40,000 tonnes per year. In West Bengal, hilsa is an important component of the state fishery. It accounts for about 11% of the total fish landings.

The annual fish catch of hilsa from the Bhagirathi–Hooghly River has fluctuated over the years, ranging between 12,733 tonnes and 20,000 tonnes between 2000-2001 and 2010-2012. Over-exploitation, siltation in riverbeds, dams, a decrease in water flow, pollution and fragmentation of the river in the dry season are key impediments to migration. A fast swimmer, hilsa has a history of migrating all the way to Allahabad and above in the Ganga river system from Bangladesh. Installation of a barrage in Farakka has completely intercepted the Hooghly-Bhagirathi migratory route of Hilsa since 1975, said Hazra. Hilsa's well-being To shore up supplies, one factor that requires urgent attention is the practice of trapping juvenile hilsa (100 to 150 mm), which according to Isha Das, has stretched on for years and has taken its toll on the overall haul.

The stage right after the fingerling phase is referred to as a juvenile. “Hilsa normally has a life expectancy of four to five years if not fished out. They spawn thrice, Isha Das said. The juveniles are entangled in fishing gear during their seaward migration. For four to five months, the juveniles feed in freshwater before they make a move to sea water. They are caught in large numbers using nets of small mesh size during their grazing period in rivers as well as estuaries by artisanal fishermen resulting in indiscriminate killing of these tiny fishes, said Hazra. “We have told the government that boats are in excess, especially the trawlers, and they should not be allowed. We don't like trawlers because the nets with small mesh size trap juvenile or baby hilsa that could have become adults and spawned.

This result in an overall decrease in catch, Tajen Das said. Juvenile hilsa, mostly the by-catch of fishery, is not preferred by the fishermen due to their low market price, Isha Das said. “Destruction of tiny hilsa and other fishlings are inadvertently brought upon by the prawn and prawn seed collectors using zero mesh nets, Hazra explained. Isha Das said their study also draws attention to the case of netting first-spawners (270 mm). “Our analysis of decade-old data shows that the probability of first spawners getting caught in the nets is very high at 75%, she added. “So you are destroying the opportunity for them to spawn and produce more hilsa. She said this leaves a stock with a higher proportion old fish, the third time spawner or older than that. Further, the study also attributes the deterioration in the health condition of hilsa in its natural habitat to overfishing.

“They are not attaining the required length and weight. West Bengal hilsa fishery is targeting smaller hilsa fish that is unsustainable in the long-term, she said. Tajen Das also rued the disappearing breeding grounds for the hilsa. “There is no breeding ground for the fish in India, he said. “Earlier it used to breed in Uttar Pradesh also. Now the fish that we get comes from Myanmar, moves to Bangladesh and that is what we catch. Our fishermen have to go in illegally to Bangladesh waters often to get a decent catch. Gap in enforcement following recommendation from the IUCN-led trans-boundary studies on hilsa migration, in which Hazra was a participant, the government of West Bengal issued fresh regulation for hilsa fishery management in 2013 where five hilsa sanctuaries were declared and mesh size and minimum

catch size were regulated. The West Bengal government has imposed a fishing ban during the peak breeding period (between September 15 and October 24) every year and has issued directives on mesh size regulation to protect juveniles. Putting up bag nets, scoop nets and small mesh gill nets along the migratory route during February to April each year is prohibited as per government regulations.

“However, this remains to be implemented at the ground level with participation from department of fishery, fishermen association, businessmen and consumers, said Hazra. Similarly, Hazra said this restriction of boats and catch in a year (as suggested in the study) should be announced by a fresh notification after thorough discussion with the stakeholders for implementation to meet the Sustainable Development Goal 14, which is mandatory for India as a signatory. The country is committed to protect the oceans and the lives that depend on them. “The government can marginally modify the figures depending on last two to three years catch data. This will be more scientific. However, initially the limit suggested in the study can continue for four to five years, Hazra said. The situation is improving But things are slowly looking up, according to the state fisheries department, even though there are gaps in enforcement of the rules. The state government admits that the hauling of juvenile hilsa is a “major problem as also is the issue of unbridled use of mechanised fishing boats, use of bag nets, drag nets or gill nets with small mesh size (less than 90 mm mesh size).

“For the last few years, we have had substantial catch in the open waters. But we do have a crisis in the sense that the production needs to be ramped up to satiate the demand. The demand has not been estimated but is as much as you can get. We are trying to generate more awareness among the fishermen, a source in the state fisheries department told Mongabay-India requesting anonymity. The government is offering alternative employment opportunities and rice at Rs 2 per kg to fishermen during the ban period so they don't catch the fish. Decline in hilsa availability threatens the livelihoods of over 26,000 fishermen, the source said, but Tajen asserts it could affect millions in Bengal who are both directly and indirectly dependent on it. Last year, the floods offered some respite to the fishermen community.

“There was a glut of hilsa, particularly in Odisha, following heavy rains in the coastal belt. They swam from the sea to the river mouth to lay eggs. This increase in supply also led to a drop in prices, Tajen Das observed. The fisherman highlighted how the implementation of the 22-day ban slapped across the border in Bangladesh to stop catching, selling, transporting and hoarding of hilsa during its peak breeding season has been effective in ramping up supply. Hilsa is Bangladesh's national fish. The Bangladesh government has introduced an extensive hilsa management action plan to increase hilsa production not only by conserving the juveniles but also by protecting the brood fish during breeding seasons by imposing a ban on fishing and restricting the mesh size. The Bangladesh Government also offers VGF (vulnerable group feeding) programmes for poor fishermen during the ban period. Tajen Das batted for better management of hilsa fishery on the lines of Bangladesh's policies, thanks to which the country

has seen an increase in hilsa production at a rate of eight to ten percent every year. This is in contrast to the wane in production in India and other countries. The popular fish (hilsa of the Padma river) was last year recognised as geographical indication product of Bangladesh, which recently lifted its export ban on hilsa, whose key market is India. "The situation needs to improve in India. The fishermen have very limited means to earn money when the ban is imposed. The benefits announced by the government does not reach all sections. They have to pay the boat owners. The trend that we are seeing is most fishermen migrate out of Bengal to coastal states like Andhra Pradesh and Kerala to eke out a living, Tajen Das claimed.

### **West Bengal: Govt to cultivate fish in unused waterbodies in Digha**

<http://www.uniindia.com/bengal-govt-to-cultivate-fish-in-unused-waterbodies-in-digha/states/news/1249234.html>

"The State Fisheries Development Corporation (SFDC) is preparing a roadmap on using a huge tract of land in Digha, lying unutilised for quite some time, for cultivating fish. The area, comprising 331 acres, in the district of Purba Medinipur contains as many as 50 waterbodies. The land belonged to West Bengal Fisheries Corporation (WBFC), which has been recently merged with SFDC, thereby providing the latter the opportunity to utilise the land. To its advantage, the plot of land has ready infrastructure for channelling water from the sea, which can be used effectively for fish cultivation. There are sluice gates at various places for smooth flow of water. The waterbodies have either dried up or have suffered a decline in navigability due to years of neglect. Upon realising their potential, the Fisheries Department Minister has instructed SFDC to prepare a detailed plan on the types of fishes that can be cultivated there. The area has the potential to turn into a major hub for fish cultivation.

### **West Bengal: Industries irreparably damaging Sundarbans, fish down by half**

<http://www.sify.com/finance/industries-irreparably-damaging-sundarbans-fish-down-by-half-news-finance-sf1oG6dcidefj.html>

"Rampant industrialisation on the Bangladesh side of the Sundarbans is causing irreparable damage, with oil levels in waterbodies rising six-fold and the temperature by over four degrees, pushing wildlife to the edge and reducing the fish population by half, new research has found. The first of its kind study, a copy of which is with IANS, compares the current condition of about 20 km radius from the periphery of the Sundarbans around the Mongla and Rampal area of Bagerhat district to that prior to 2010 before industries started flocking in. Spread across 10,000 sq km -- of which 62 per cent is in Bangladesh -- the Sundarbans, lying in the delta of the Ganges, Brahmaputra and Meghna rivers on the Bay of Bengal, was declared a World Heritage Site by UNESCO in 1997. For Bangladesh, it accounts for 44 per cent of its forest area and 50 percent of its forest revenue. The research on the world's largest mangrove forests was conducted from July 2015 to June 2017. The region currently has over 300 industrial

units, including 190 of what are called "severe" units like oil refinery and a cement plant, driven by a 1,320 MW coal-fired power plant that India's NTPC is setting up at Rampal at a cost of \$1.6 billion and which was sanctioned in 2010 -- ostensibly to improve ties between the two countries.

While the Bangladesh government says the plant's location, 14 km from the Sundarbans Reserve Forest, is at a safe distance, experts think otherwise. "Water temperature increases because of the salinity and chemicals dissolved from industrial discharge and huge vessels plying. "Different types of chemicals like sulphuric acid are now present in Sundarban's water," lead author Professor Abdullah Harun Chowdhury of Khulna University's Environment Science Department, told IANS. The report discloses the differences in temperature, oil and chemical contents, density of key species of flora and fauna and the threat to the region's food security due to the shift and drop in the hatching and breeding ground of crucial varieties of fish. It also pointed out loss in habitat and population of tigers, monitor lizards, crocodile, dolphins, otters, fishing cat, deer and wild boars, as also major species of birds including the masked finfoot, the ban morog, heron and kingfisher.

The major physico-chemical and biological changes of waterbodies and soil include:

- \* Common fish dropped from 31-43 species (prior 2010) to 14-20 at present
- \* Maximum temperature of waterbodies (Poshur river and canals) increased by 4.6 degrees Celsius
- \* 0.8 degree Celsius rise in air temperature
- \* Water transparency has dropped from 32 cm to 16 cm
- \* Total suspended solids (pollutants) increased from 15.8 to 678 microgrammes per litre(mgpl)
- \* Chemical oxygen demand of water bodies goes from 192 to 584 mgpl.
- \* Productivity of water drops from 11.4 to 3.0 mgpl
- \* oil content in water increases from 10.8 to 68 mgpl
- \* oil content in soil increased from 7.6 to 10.7 mg per kg
- \* Sulfur in soil increases from 98 to 128 microgrammes per gram of soil
- \* Phytoplanktons, a key component to sustain the aquatic foodchain, drop from 462 to 199 units per litre
- \* Zooplanktons, a very small species yet very important to sustain aquatic animals, drop from 126 to 85 units per litre
- \* Particle pollutant tripled: the oxides of nitrogen and sulfur have more than doubled in the air

The damage recorded goes on. According to the research, due to the salinity -- high salt content -- 70 percent of Sundri seeds could not be generated. The Sundarban gets its name from the Sundri tree. "Eggs and hatching of key fish like parshe, khursula, bagda and Harina have dropped from 6,800-9,600 (before 2010) to 1,700-2,400 units per litre. Snails dropped from 10-16 individual to only 3-7 per sq metres...Mud crab population dropped from 3-6 per sq mtr to only 0-1," the report finds. Only four of seven species of snake could be spotted; three times less monitor lizards were spotted and only three crocodiles could be spotted over two years against 5-6 daily prior to 2010.

Less than half the dolphins were seen; otter spotting dropped from "unlimited" to "only two foot marks"; poor numbers of deer were observed against previous "unlimited spotting"; only 11-16 wild boards were spotted against previous "unlimited spotting". Speaking of tigers, the report asserts: "Only 3 to 4 pug marks of tigers were observed in the study period against 9-12

pug marks daily before 2010, while the non-industrial area had 11-15 tiger pug marks." Interestingly, the non-polluted areas of Sundarbans had no change on the spotting of animals at present as compared to that before 2010, the report notes. "It's because of the assurance of power from Rampal project that such huge industrialisation has taken place... also this had more negative effect on the local population in terms of jobs, earning and quality of life," Harun added. Currently hundreds of vessels pass through the Pashur river and connecting canals. Ironically, a 2016 joint report by India and Bangladesh termed these "vessles" as "mobile bombs".

### **West Bengal: SFDC preparing roadmap for fish cultivation in unused area at Digha**

<http://www.millenniumpost.in/kolkata/sfdc-preparing-roadmap-for-fish-cultivation-in-unused-area-at-digha-300368>

"The State Fisheries Development Corporation (SFDC) is preparing a roadmap on how to cultivate fishes on a huge tract of land, with as many as 50 waterbodies that have been lying unutilised at Digha in East Midnapore for quite some time. The land belonged to West Bengal Fisheries Corporation (WBFC), which has been recently merged with SFDC, thereby providing the latter the opportunity to utilise the land. Senior officials of SFDC visited the land spanning around 331 acres that earlier belonged to WBFC at Digha recently and stumbled upon the unutilised land, with ready infrastructure for channelising water from the sea, that can be used effectively for fish cultivation. It may be mentioned that a top official of WBFC, during the erstwhile Left Front government, had given these waterbodies on lease to a number of companies for fish cultivation. But after the lease expired, there was no renewal and hence activities came to a standstill. The waterbodies have either dried up or have suffered a decline in navigability due to years of neglect. However, there are sluice gates at various places for smooth flow of water. Bushes and shrubs have filled the entire tract of land, making it an eyesore and a haven of nuisance activities.

"After the visit, our senior officials briefed about the condition of the land available in the area, that has the potential to turn into a major hub for fish cultivation. State Fisheries department minister Chandranath Sinha has immediately instructed us to prepare a detailed plan on the types of fishes that can be cultivated there," a senior SFDC official said. It may be mentioned that shrimp farming has been given a major boost in Digha and its adjoining areas in East Midnapore by the Mamata Banerjee government. The state government is planning 'eco fish tourism' project in Digha, in which tourists would be taken to the water bodies managed by the Fisheries department. They can draw the nets along with the fishermen to pull in the fish and can then indulge in the quiet joy of angling. The waterbodies would be kept stocked with adequate fish. The fishes caught by the tourists would be cooked and served to them. They would not be

allowed to take any fish home. ""With the development of this area, the prospect of eco-tourism is expected to get a major boost,"" the official maintained.

### **West Bengal: Three fishermen electrocuted to death in S 24 Parganas**

<http://www.uniindia.com/three-fishermen-electrocuted-to-death-in-s-24-parganas/states/news/1231296.html>

"Three fishermen on a mission to culture coloured fishes and used a pump to de-water the pond died of electrocution accidentally at Mamudpur under Bishnupur in West Bengal's South 24 Parganas, police said today. The dead, identified as Deep Das, Prem Gayen and Kamal as their bodies were found floating on the waterbody today. The trio had planned to culture coloured fishes after cleaning the pond and for this they put a pump for de-watering the pond. They had put a powerful lamp near the pond which was surrounded by the aluminium wiring. Police said the trio might have died of electrocution after the wiring got short with the burning lamp during the night.

### **West Bengal: 7 abducted fishermen rescued in Satkhira**

<http://www.unb.com.bd/bangladesh-news/7-abducted-fishermen-rescued-in-Satkhira/70807>

"Rapid Action Battalion (Rab) members rescued seven fishermen, who were abducted by forest robbers, from Pirkhali area of Malancha River of the Sundarbans under the Satkhira range early Tuesday. Assistant Superintendent of Police (ASP) Mukur Ahmed of Rab-8 said they rescued the fishermen from the den of robber gang 'Kajal Bahini' in the early hours. However, the bandits managed to flee. The rescued fishermen were identified as Rashedul Islam, 28, son of Montez Gazi, Bishwanath Sana, 28, son of Deben Sana of the same village, Bishwa Mondal, 20, son of Manaranjan Mondal, Joydeb Mondal, 25, son of Sujir Mondal, Paritosh Mondal, 24, son of Fakir Mondal, Masum Gazi, 23, son of Meher Ali Gazi, Ramesh Mondal, 20, son of Fanindra Nath Mondal of Mathurapur village of Shyamnagar upazila. Earlier on May 13, the fishermen were kidnapped by the robber gang while fishing in the river.

### **West Bengal: Crabs in boxes to curb tiger attack**

<https://www.telegraphindia.com/calcutta/crabs-in-boxes-to-curb-tiger-attack-229926>

"Mud crabs will be reared in plastic boxes on Henry's Island in South 24- Parganas as part of a pilot project aimed at preventing fishermen from falling prey to tigers in the Sunderbans. Every year, scores of fishermen in the Sunderbans are killed by tigers while catching crabs in the creeks. ""If successful, the experiment could go a long way in bringing down such deaths,"" said Soumyajit Das, managing director of the State Fisheries Development Corporation (SFDC), which owns 900 hectares of water bodies across the East Calcutta Wetlands, Salt Lake, Rajarhat, Henry's Island, Frasergunj, Digha and other parts of the state.

This is the first time crabs will be farmed in cages in the state, the corporation officials said. The SFDC has procured 200 boxes made of polymer fibre for the project. Each perforated box will hold a single crab. The boxes will be placed on a floating wooden frame on the brackish water bodies. Food, mainly crab feed, will be given through the holes in the box. The crabs will be taken out of the boxes once they weigh around 150 to 200 grams.

"It can take two to four months, depending on the size of the seeds," Mondal said. Crablings will be procured from the Central Institute of Brackishwater Aquaculture (CIBA) in Chennai for the project. "The seeds should arrive by next month. But we want to start the experiment with local crablings from this month," said Bijan Mondal, general manager (technical), SFDC. The officials hope the project will also help increase production for the export market. Crabs are in great demand in China, Thailand, Taiwan, Singapore, Malaysia, South Korea and Japan. More than 70 per cent of the crabs caught in Bengal are exported. But exports from other coastline states are still higher in volume than Bengal. Bangladesh and Sri Lanka are also bulk exporters of crabs. "We want to increase the production to boost export," Das said. If successful, the experiment could be replicated in the Sunderbans, he said.

Two villagers were recently attacked by a tiger in Sunderbans' Pirkhali forest after they entered a creek in a boat and jumped on the banks to catch crab. Both are feared dead. The project's success could also stop bulk catching of crabs that affects the delicate ecosystem of the mangrove forests, Das said. There are several other factors that make caged farming economically viable, said the officials. Controlled production and pricing are among them. At present, a fisherman sells a kilo of crabs for less than Rs 100. In the market, it fetches more than Rs 600. "We want to bridge this gap," Mondal said. The mortality rate of crabs will also go down if they are farmed in boxes. "In creeks, bigger crabs often kill the smaller ones. There is no such possibility in cages, where there will be one crab in each box," he said.

**West Bengal: The iconic hilsa is facing a threat of being fished out of West Bengal rivers**

<https://india.mongabay.com/2018/05/07/the-iconic-hilsa-is-facing-threat-of-being-fished-out-of-west-bengal-rivers/>

"Tajen Das's voice is full of foreboding. It mirrors the choppy waters of the Bay of Bengal as he spruces up his fishing boat and gear for the upcoming hilsa (*Tenualosa ilisha*) season in the monsoons. "My men are ready. My boat is ready. The fishing nets are in place. We are waiting for June when the monsoons begin. But how long will the hilsa survive in Bengal? The reign of the 'king of fish' may soon be over, continued Tajen Das, a fisherman associated with a south West Bengal's fishermen forum. The highly sought-after, silvery trans-boundary fish that travels between the saline seawater and the sweet river water, is not only integral to the socio-economy of West Bengal in east coast of India and neighbouring Bangladesh but also to diplomatic parleys. \* The number of fishing boats operating in the northern Bay of Bengal is in excess of the sustainable limit, resulting in overexploitation of the hilsa population. \* There has been a

persistent decline of fish catch in spite of increasing efforts, a recent study reports. Between 2002 and 2015, even though the number of boats engaged in fishing increased by 25 percent, the hilsa catch dipped by 13 percent.

\* The study draws attention to the haul of juvenile hilsa and first spawners due to small mesh-size nets, which are detrimental to fish stock. \* The enforcement of regulations is important for India to meet the Sustainable Development Goal 14 as a signatory. SDG 14 commits countries to protect oceans and the lives that depend on it. A hilsa fish can weigh up to 2.5 kg and is rich in Omega-3-fatty acids. Inspiring poets and artistes, the “darling of waters“, is imperiled by over-exploitation in northern Bay of Bengal. What has dismayed Tajen and his co-workers is a persistent decline in hilsa catch in West Bengal waters despite revamped efforts. “It is extremely unnerving to watch the catch dwindle even as we press more boats into service, said Tajen Das. Unsustainable fishing pressures In a new study, scientists questioning the sustainability of hilsa fishing practices in the northern Bay of Bengal region suggest that an excess of licensed fishing boats (mechanised boats or trawlers and non-motorised boats) are to blame for the plummeting stock. The study states that between 2002 and 2015, even though the number of boats engaged in fishing increased by 25 percent, the hilsa catch dipped by 13 percent.

“At present, the number of boats operating in the northern Bay of Bengal has gone beyond the sustainable limit resulting in over-exploitation of the hilsa population. We need to draw a line. Hilsa fishery is being significantly over-exploited in the West Bengal waters. Strict regulations are needed to curb overfishing, said Isha Das of Jadavpur University, lead researcher of the study. Overfishing happens when more fish are caught than the population can replace through reproduction. Using available data, sample collection and computer modelling, the team estimated 25,440 tonnes as the sustainable yield limit for hilsa fishery annually in northern Bay of Bengal region of West Bengal, while the maximum number of boats that may be deployed to achieve this catch is 3987. “We wanted to examine how we could increase the catch without impacting the fish stock. So one way was to determine an acceptable limit of fishing with boats as one of the parameters.

In practise, there are other factors as well that come into play as oceans and rivers are natural systems and are dynamic in nature, said Isha Das. Referring to the West Bengal Government data, the researcher clarified that though in the last several years, except for 2010, the annual catch has remained below 25,440 tonnes, the number of fish removed from the population through interaction with fishing (fishing mortality) has been high and the number of boats have gone up. “This has had a negative impact on the stock in subsequent years, said Isha Das. Currently, the study states, fishing pressure from the number of boats legally deployed is almost three times as much. When asked about the over-exploitation of the fish in northern Bay of Bengal, a peeved Tajen held the businessmen-fishermen-government nexus responsible.

“We fishermen have to make a living somehow and we are operating boats that belong to big businessmen. Each businessman owns about 12 to 13 boats. They are here to make money because hilsa fetches good money because of a drop in stock, Tajen said. The state government, he claimed, argues that some boats are lost or wrecked on sea and so new vessels are needed. The hilsa supremacy Like the salmon, hilsa live most of their lives in salt water and swim to freshwater and estuarine waters to spawn (release eggs). Hilsa start swimming upstream during the southwest monsoon when the rivers swell. The hatchlings go back to the sea and repeat the cycle. They can cover as much as 70 km in a day. The species is widespread— ranging from the Persian Gulf, Red Sea, Arabian Sea, Bay of Bengal and Vietnam Sea to China Sea. The hilsa fishery in India and Bangladesh is dependent on hilsa harvested from a particular area: the Indo-Gangetic and Brahmaputra river basins, said study co-author Sugata Hazra, director, School of Oceanographic Studies, Jadavpur University.

The species breed throughout the year with peak activity in October-November and minor spawning phases in February- March and July-August in various rivers and estuaries in the region. Between July and October, large size groups of fish are abundant in the riverine area. In general, about 80 to 90 percent of the hilsa is captured during monsoon months (July to October) coinciding with the upstream movement to the rivers and estuaries. About 95 percent of the catch of this commercially important species comes from India, Bangladesh and Myanmar. Annual average production of hilsa in India is 40,000 tonnes per year. In West Bengal, hilsa is an important component of the state fishery. It accounts for about 11 percent of the total fish landings. The annual fish catch of hilsa from the Bhagirathi–Hooghly River has fluctuated over the years ranging between 12,733 tonnes and 20,000 tonnes between 2000–2001 and 2010–2012. Over-exploitation, siltation in riverbeds, dams, a decrease in water flow, pollution and fragmentation of the river in the dry season are key impediments to migration.

A fast swimmer, hilsa has a history of migrating all the way to Allahabad and above in the Ganga river system from Bangladesh. Installation of a barrage in Farakka has completely intercepted the Hooghly-Bhagirathi migratory route of Hilsa since 1975, said Hazra. Hilsa's well-being To shore up supplies, one factor that requires urgent attention is the practice of trapping juvenile hilsa (100 to 150 mm), which according to Isha Das, has stretched on for years and has taken its toll on the overall haul. The stage right after the fingerling phase is referred to as a juvenile. “Hilsa normally has a life expectancy of four to five years if not fished out. They spawn thrice, Isha Das said. The juveniles are entangled in fishing gear during their seaward migration. For four to five months, the juveniles feed in freshwater before they make a move to sea water. They are caught in large numbers using nets of small mesh size during their grazing period in rivers as well as estuaries by artisanal fishermen resulting in indiscriminate killing of these tiny fishes, said Hazra.

“We have told the government that boats are in excess, especially the trawlers, and they should not be allowed. We don't like trawlers because the nets with small mesh size trap juvenile or

baby hilsa that could have become adults and spawned. This result in an overall decrease in catch, Tajen Das said. Juvenile hilsa, mostly the by-catch of fishery, is not preferred by the fishermen due to their low market price, Isha Das said. “Destruction of tiny hilsa and other fishlings are inadvertently brought upon by the prawn and prawn seed collectors using zero mesh nets, Hazra explained. She said their study also draws attention to the case of netting first-spawners (270 mm).

“Our analysis of decade-old data shows that the probability of first spawners getting caught in the nets is very high at 75 percent. So you are destroying the opportunity for them to spawn and produce more hilsa, Isha Das said. Das said this leaves a stock with a higher proportion old fish, the third time spawner or older than that. Further, the study also attributes the deterioration in the health condition of hilsa in its natural habitat to overfishing. “They are not attaining the required length and weight. West Bengal hilsa fishery is targeting smaller hilsa fish that is unsustainable in the long-term, Isha said. Tajen also rued the disappearing breeding grounds for the hilsa. “There is no breeding ground for the fish in India. Earlier it used to breed in Uttar Pradesh also. Now the fish that we get comes from Myanmar, moves to Bangladesh and that is what we catch. Our fishermen have to go in illegally to Bangladesh waters often to get a decent catch, Tajen said.

Gap in enforcement Following recommendation from the IUCN-led trans-boundary studies on hilsa migration, in which Hazra was a participant, the government of West Bengal issued fresh regulation for hilsa fishery management in 2013 where five hilsa sanctuaries were declared and mesh size and minimum catch size were regulated. The West Bengal government has imposed a fishing ban during the peak breeding period (between September 15 and October 24) every year and has issued directives on mesh size regulation to protect juveniles. Putting up bag nets, scoop nets and small mesh gill nets along the migratory route during to February to April each year is prohibited as per government regulations. “However, this remains to be implemented at the ground level with participation from department of fishery, fishermen association, businessmen and consumers, said Hazra. Similarly, Hazra said this restriction of boats and catch in a year (as suggested in the study) should be announced by a fresh notification after thorough discussion with the stakeholders for implementation to meet the Sustainable Development Goal 14, which is mandatory for India as a signatory.

The country is committed to protect the oceans and the lives that depend on them. “The government can marginally modify the figures depending on last two to three years catch data. This will be more scientific. However, initially the limit suggested in the study can continue for four to five years, Hazra said. The situation is improving But things are slowly looking up, according to the state fisheries department, even though there are gaps in enforcement of the rules. The state government admits that the hauling of juvenile hilsa is a “major problem as also is the issue of unbridled use of mechanised fishing boats, use of bag nets, drag nets or gill nets with small mesh size (less than 90 mm mesh size). “For the last few years, we have had

substantial catch in the open waters. But we do have a crisis in the sense that the production needs to be ramped up to satiate the demand. The demand has not been estimated but is as much as you can get.

We are trying to generate more awareness among the fishermen, a source in the state fisheries department told Mongabay-India requesting anonymity. The government is offering alternative employment opportunities and rice at Rs 2 per kg to fishermen during the ban period so they don't catch the fish. Decline in hilsa availability threatens the livelihoods of over 26,000 fishermen, the source said, but Tajen asserts it could affect millions in Bengal who are both directly and indirectly dependent on it. Last year, the floods offered some respite to the fishermen community. "There was a glut of hilsa, particularly in Odisha, following heavy rains in the coastal belt. They swam from the sea to the river mouth to lay eggs. This increase in supply also led to a drop in prices, Tajen Das observed. The fisherman highlighted how the implementation of the 22-day ban slapped across the border in Bangladesh to stop catching, selling, transporting and hoarding of hilsa during its peak breeding season has been effective in ramping up supply. Hilsa is Bangladesh's national fish.

The Bangladesh government has introduced an extensive hilsa management action plan to increase hilsa production not only by conserving the juveniles but also by protecting the brood fish during breeding seasons by imposing a ban on fishing and restricting the mesh size. The Bangladesh Government also offers VGF (vulnerable group feeding) programmes for poor fishermen during the ban period. Tajen batted for better management of hilsa fishery on the lines of Bangladesh's policies, thanks to which the country has seen an increase in hilsa production at a rate of eight to ten percent every year. This is in contrast to the wane in production in India and other countries. The popular fish (hilsa of the Padma river) was last year recognised as geographical indication (GI) product of Bangladesh, which recently lifted its export ban on hilsa, whose key market is India. "The situation needs to improve in India. The fishermen have very limited means to earn money when the ban is imposed. The benefits announced by the government does not reach all sections. They have to pay the boat owners. The trend that we are seeing is most fishermen migrate out of Bengal to coastal states like Andhra Pradesh and Kerala to eke out a living, Tajen Das claimed.

### **West Bengal: Scientists raise red flag on overfishing of hilsa**

<http://www.thehindu.com/todays-paper/tp-miscellaneous/tp-others/scientists-raise-red-flag-on-overfishing-of-hilsa/article23789677.ece>

"Scientists have raised alarm over the exploitation of hilsa, *Tenualosa ilisha*, undoubtedly the most sought after fish in West Bengal and suggested a cap on its maximum sustainable yield per

year. A paper titled Present Status of the Sustainable Fishing Limits for Hilsa Shad in the northern Bay of Bengal, India, published earlier this year by scientists from the School of Oceanographic Studies (SOS), Jadavpur University, points out that the value of recorded fishing mortality has exceeded the sustainable fishing mortality over the past few years, putting the species in danger.

“To conserve the hilsa population in its natural habitat, the hilsa fishery needs suitable fishing regulations, restricting the number of fishing boats within 3,987 and maximum allowable hilsa catch (Maximum Sustainable Yield) at 25,440 tonnes per year in the northern Bay of Bengal region, the publication states. This is the first attempt to measure the maximum sustainable yield of the hilsa species, particularly in West Bengal and offshore, Sugata Hazra, director, SOS, who is the principal investigator of the research and one of the authors of the publication said. The paper published in the National Academy of Sciences has also been authored by Isha Das, Sourav Das, Sandip Giri and Sourav Maity. Penal provision West Bengal Fishing Minister Chandranath Sinha admitted that the over-exploitation of the species is something which concerns the State government.

“We are considering a proposal of having penal provisions for those who catch hilsa less than 500 grams of weight. Even those who buy the fish will be penalised, Mr Sinha told The Hindu. Based on the advice of experts, the State government had issued notification of declaring five areas of the river Ganga, including a five sq.km. area around sand bars located in the rivers Matla, Roymongal and Thakuran in Sunderbans, where the river meets the sea as a hilsa sanctuary. As per regulations, all fish catching activities in these hilsa sanctuaries are prohibited from June to August and October to December. But according to experts these restrictions are far from being implemented at the ground level. The paper documents hilsa yield across three major fish landing centres Digha, Diamond Harbour and Fraserganj in West Bengal from 2002 to 2015 which dropped to 13,405 tonnes from 32,100 tonnes. In 2010, the hilsa yield was abnormally high in the State at 60,460 tonnes, which scientist say was an exception and could have been triggered by global climate events.

According to Professor Hazra, the publication points out that the hilsa fishery in the northern Bay of Bengal is “being unsustainably exploited and the over fishing about 38% over the past few years (2012-16) has been noticed after comparing the fishing mortality. The publication points out that the annual catch has decreased by 13 % over the past decade and that the hilsa fishery in the northern Bay of Bengal is targeting smaller fish, which is unsustainable in the long run. Hilsa or ilish, as it is called in West Bengal is intrinsically linked to the culture of the State and makes 11% of the total fish catch of the State. Professor Hazra said that if the catch is regulated for a period about five years, the population will stabilise.

**West Bengal: Climate change is changing the reproductive behaviour of the fish in the Sunderbans**

<https://scroll.in/article/875427/climate-change-is-changing-the-reproductive-behaviour-of-the-fish-in-the-sunderbans>

"Some of West Bengal's most-loved fish may go off the menu, thanks to climate change in the Sundarbans. A team of researchers that is mapping biological sensitivity of certain fish species to climate change said increasing salinity and temperature in the Sundarbans estuary is messing up their reproductive behaviour and may also likely alter their abundance, factors that could wipe them out one day, they warn. Spanning 10,000 square km along the coast of India and Bangladesh, the Sundarbans represent the largest expanse of contiguous mangrove forests in the world. This globally significant ecosystem is situated in the Bay of Bengal, within the delta of the Ganges, Brahmaputra, and Meghna rivers.

The Indian Sundarbans archipelago acts as the “nursery for nearly 90% of the aquatic species of eastern coast of India. It is the top producer of fish and prawn, with both districts (South and North- 24 Parganas) combined producing roughly 31% of the total inland fish/prawn production of West Bengal, a state iconic for its fish-eating habits. Sundarbans also satiates 15% to 20% of the state capital Kolkata's fish requirement. Observations of drastic decline in numbers of certain species in the last three decades, especially after cyclone Aila ravaged the islands in 2009, spurred fish endocrinologist Suman Bhusan Chakraborty from the University of Calcutta and collaborators from Visva-Bharati University to explore the combined impact of salinity and temperature rise on five ecologically important fish species in the Indian Sundarbans mangrove estuary. “The combination of increasing sea surface temperature and salinity is going to make it harder for some species while others will adapt and emerge victorious. We are trying to understand which characteristics of the species make them more sensitive and less resilient to climate change, Chakraborty told Mongabay-India at the India Biodiversity Meet at the Indian Statistical Institute where an abstract of the team's latest study was presented. The five species on the team's radar are Tangra (*Mystus* sp.), Pabda or butterfish (*Ompok* sp.), Ranga (*Parambassis* sp.), Dari (*Esomus* sp.), Kholse (*Colisa* sp.). Pabda (*Ompok pabda*), Kholse (*Colisa fasciata*), Akash tangra (*Mystus gulio*) are some of the species documented to be among those whose population has drastically declined in the last 30 years. Chakraborty said his research shows undesirable temperature and salinity is triggering a shift in both the reproductive season and the site of fishes.

Warming waters drive some species to move deeper into the water. “This in turn hampers the male to female ratio of a particular habitat. These stress factors (salinity and temperature variability) have a long-term effect on abundance and distribution. Such climatic stress is linked to reproductive performance in fish as they affect the respective enzymes and hormones, he said. Beating ‘stress’ with predictive modelling The know-how on which species will fare much worse than others as they become more vulnerable to the effects of climate change is a shot in the arm for predictive modelling, believes Chakraborty. So the goal, he said, is to develop a computational model based on a panel of multiple enzyme and hormone biomarkers. This could

help analyse and predict how stressed a particular fish species will be on account of changing environmental parameters and how it will cope with that shift.

“The study might help to frame the reproductive strategy for these important fish species in future, as well. This would be helpful for both conservation as well as commercial practices as fish harvest is impacted by these changes, Chakraborty said. Fish samples were collected each month throughout the year from three different study sites and various anti-oxidant (enzymatic and non-enzymatic) and detoxification enzymes were measured. Levels of the stress hormone cortisol and reproductive hormone 17-estradiol were also measured as indicators of stress accumulation and reproductive status of the selected fish species. During their assay, the researchers observed a spike in the hormone cortisol when the temperature varied from 30°C to 35°C. “When the cortisol level goes up it indicates long-term stress. To adapt to that stress, which in this case is salinity and temperature, they have to change physiological activities including respiratory rate, Chakraborty explained.

“So the energy is diverted towards these adaptive activities and this in turn, hampers steroid production and other reproductive behaviour. Due to slow rate of steroid production, the reproductive season is shifting for most of the species, particularly for tangra and ranga. Different species, different tolerances The team has also been able to show that species like kholsa is much more adaptable to shifts in temperature and salinity in contrast to pabda that are able to survive only within a very narrow range. “So species like kholsa and rasbora are much more adaptable and their survival chances are more as it can tolerate a wider variation. Whereas pabda is comfortable within a very specific range of climatic parameters and any small change can lead to their decimation, he warned. As climate shifts, certain species are forced to abandon their native habitats and invade a different site and adapt to that specific environment. “Some fish from its original habitat will be lost forever, while some can be found in new places where they are not supposed to be, he said.

Cutting to the chase, Chakraborty warns most of the concerned fish species may go extinct in the near future and the probable cause of extinction may not be the over exploitation of the species itself but a significant drop in their reproductive efficiency and production rate. “For example, after Aila, the catch per unit and abundance of some species of *Notopterus* and *Mystus* has already gone down considerably from the previous availability and our data suggest that if the scenario continues for the next 10 years, the probability of extinction would be very high in some of the places of Sundarbans, he said. Farmers' perception According to Sabyasachi Bhattacharya of Indian Statistical Institute, who deals with ecological statistics, the work done by the team is a “great initiative to solve the major challenge of the future regarding framing of a production and conservation strategy through a computational model. “This can bridge the gap between individual species' physiological status and ecosystem-level functioning, related to climatic change, Bhattacharya told Mongabay India.

However, he emphasised the work should be considered as a valuable exploratory tool, a first step in data processing and should be combined with further ongoing statistical analysis. Sourabh Kumar Dubey who tracks the pattern of climate change and its impact on the Indian Sundarbans, especially in fisheries, aquaculture and livelihood, suggests climate-resilient aquaculture strategies and integrated coastal zone management should be implemented as part of a local adaptation plan. “Strategies could include incorporation of salt-tolerant species in freshwater aquaculture areas prone to saline water inundation, avoiding over dependence on specific species and emphasis should be given to species diversification, Dubey, who is associated with International Water Association, told Mongabay-India.

Repair of age-old vulnerable coastal embankments would help to protect the islands from the ingress of saline water due to embankment breach during cyclonic storms and coastal flooding. Incorporation of salt tolerant fruit trees and horticultural crops with salt tolerant aquacultural species may result in better economic returns, adaptive capacity enhancement and reduce risk, he said. Sharing insights from a farmers' perception survey conducted in Basanti and Sagar Islands, Dubey said the community reported that salt water inundation causes mass mortality of freshwater fish due to inability to cope up with the sudden salinity stress. According to the survey, “cyclones and storm surges were the most significant climatic phenomena that affected freshwater aquaculture; subsequently, coastal flooding and sea-level rise were mentioned which cumulatively led to salinity intrusion, followed by rising temperatures and drought. “Some farmers also noticed growth retardation and altered feeding habits of the surviving fish after flooding events as a result of salinity stress, Dubey added.

#### **West Bengal and Odisha: Nor'wester rain to lash Odisha till May 4**

<http://odishatv.in/odisha/body-slider/norwester-rain-to-continue-to-lash-odisha-till-may-4-292240>

"Nor'wester rain accompanied by hailstorm and strong gusty winds reaching speed of 50 to 60 kmph will continue to lash Odisha till May 4, the regional office of India Meteorological Department (IMD) said today. “Severe thunder squalls and heavy rainfall will occur at isolated places over parts of eastern India comprising Gangetic West Bengal, Bihar, Odisha and northeastern states during next two to three days under influence of strong low level convergence, moisture incursion and presence of jet speed winds in the upper levels, the IMD reported. The weathermen also predicted isolated thunder squalls with wind speed reaching 45 kmph occasionally along coastal areas of West Bengal and Odisha. The fishermen have been advised not to venture into sea. Earlier in the day, thunderstorm and lightning alert had been issued for 11 districts including Jagatsinghpur, Kendrapara, Bhadrak, Dhenkanal, Angul,

Nabarangpur, Kalahandi, Cuttack, Nayagarh, Ganjam and Khurda. Meanwhile one person was killed and seven members of a family injured in separate incidents of lightning on Monday.

### **West Bengal: Major boost to fishing infrastructure in Bengal**

<http://www.uniindia.com/~major-boost-to-fishing-infrastructure-in-bengal/States/news/1212412.html>

"The West Bengal Fisheries Department has endeavored to give every manner of infrastructural help to fishermen. The fishermen's cooperatives have been running lodges belonging to the Department. The Department is setting up block-level laboratory-cum-training centres for testing water and soil of waterbodies to determine suitability for pisciculture...

### **West Bengal: Fisheries Development Corp to take up crab culture in cages to boost production**

<http://www.millenniumpost.in/kolkata/fisheries-development-corp-to-take-up-crab-culture-in-cages-to-boost-production-296194>

"In a stride towards increasing the production of crabs, particularly of the export variety, the state Fisheries Development Corporation (SFDC) will soon take up crab culture in cages. A pilot project will begin in Henry's Island near Bakkhali in South 24-Parganas, following which the SFDC will replicate the same in Sunderbans, where catching crabs is one of the major livelihoods of the people. ""People from countries like China, Malaysia and Singapore are simply crazy about crabs and a bulk of their demand is met by Indian states, including Bengal, which have coastlines.

However, crab exports from most other coastline states are much higher in volume than Bengal. We are taking measures to increase the production of crabs and boost export, because of its high value,"" a senior official of SFDC said. SFDC is presently at an advanced stage of talks with the Central Institute of Brackish water Aquaculture (CIBA) in Tamil Nadu, from where it will procure seeds for crab culture. 200 cages- for both the large variety and small variety of crabs, are also being brought for the purpose of culture. ""Crabs that are found in sweet water are not fit for consumption and the ones we eat are wild crabs that are available in Sunderbans and in bheris which are connected with rivers,"" said B K Mondal, general manager (technical), SFDC. It may be mentioned that a village in Gosaba in Sunderbans is popularly known as widow's village (Bidhaba Gram), as a large number of women at the place had lost their husbands to tiger attacks, when the latter had ventured into the deep forest for catching crabs, or for collecting honey.

As per estimates of researchers, every year 50 fishermen or honey collectors are killed in tiger attacks. ""If we can take up cage culture of crabs, it will not only enhance their livelihood, but

will also stop people from venturing deep into the forests for catching crabs," a senior SFDC official said. It may be mentioned that the state Forest department is also taking up a project to encourage the villagers to take up apiculture in their native villages, to stop them from venturing into deep forest and thus preventing deaths by tiger attacks.

### **West Bengal: Developments undertaken by the Fisheries Department**

<https://news.webindia123.com/news/Articles/India/20180424/3328144.html>

"The State Fisheries Department has undertaken various programmes for the development of the fisheries sector across Bengal. It is leading a balanced approach by enhancing fish production and thus ensuring nutritious foods for all while, at the same time, ensuring the protection of the fisher-folk by ensuring the adoption of sustainable methods of fishing and fish production. This approach has brought about considerable poverty alleviation. The Panchayats Department is also actively involved with the Fisheries Department. Bengal has achieved remarkable results in the inland fisheries as well as the marine fisheries sectors. Fish production during financial year (FY) 2017-18, upto December 2017, the production was 13.42 lakh metric tonnes (LMT), while the estimated production for the entire FY is 17.52 LMT. Fish seed production till December 2017 was 1.24 lakh. Bengal caters for a huge 40 per cent of the country's demand in this respect. During FY 2018-19, Bengal will start supplying fish seed in large quantities to neighboring states. For augmenting the production of fish, a new model called Moyna Model was adopted during FY 2017-18. Its prime objective is the culture of mainly rohu, catla and mrigel at the rate of 12,000 kg per hectare per year in the seven districts of Cooch Behar, Murshidabad, Dakshin Dinajpur, North 24 Parganas, Nadia, Howrah and South 24 Parganas as well as in Kalyani Fish Farm in Baro Sagar Dighi (Nadia district). Model fish farms have been identified covering 90 hectares of water area as well as 110 progressive farmers. Achievements in the export sector have also been quite significant under the Trinamool Congress Government.

From 61,709 MT of fish worth Rs 1,734 crore during FY 2011-12, the figures reached 1,04,762 MT worth Rs 4,455.74 crore during FY 2016-17. For attracting substantial investments in the fisheries sector, the government has promulgated the West Bengal Fisheries Investment Policy 2015. From FY 2015-17 till now, 30 projects have been initiated at an investment (by both private and government players) of Rs 339.35 crore. During the Bengal Global Business Summit 2018, 19 memorandums of understanding (MoU) worth Rs 760.3 crore were signed. Thus, Bengal is marching ahead towards not only self-sufficiency in fish production but substantial contribution towards exports too.

**India: Rough sea warning issued for Kerala, Tamil Nadu, Karnataka, Maharashtra, Gujarat, West Bengal, Odisha, Goa; fishermen advised caution**

<http://zeenews.india.com/india/rough-sea-warning-issued-for-kerala-tamil-nadu-karnataka-maharashtra-gujarat-west-bengal-odisha-go-fishermen-advised-caution-2102096.html>

"As per the forecast generated by Indian National Centre for Ocean Information Services (INCOIS), moderate to rough sea conditions are very likely to prevail along and off the West coast of Andaman and Nicobar Islands. The Ministry of Earth Science has issued a severe weather warning for several states. While thunderstorm accompanied with squall and hail is likely at isolated places over Sub-Himalayan West Bengal and Sikkim on Sunday, thunderstorm accompanied with gusty winds is expected at some places over Telangana, Tamilnadu, interior Karnataka, and Kerala. A thunderstorm accompanied with squall is also likely at isolated places over Gangetic West Bengal. As per the forecast generated by Indian National Centre for Ocean Information Services (INCOIS), moderate to rough sea conditions are very likely to prevail along and off the West coast of Andaman and Nicobar Islands. In a statement, the ministry has advised fishermen to be cautious while venturing into the Sea along and off these areas.

There is a possibility of surging of waves during the high tide times, in the low lying areas of the coasts during this period. Boats plying very near to the coasts may be avoided during this period as the coastal regions will experience its effect more. The boats may be anchored at a fair distance from each other, to avoid collision and damage. For a change, heat wave conditions are likely to prevail in some parts of Jammu and Kashmir, Himachal Pradesh and Uttarakhand on Monday.

**West Bengal: Now get live crabs delivered to your home through Smart Fish app**

<http://www.uniindia.com/news/states/now-get-live-crabs-delivered-to-your-home-through-smart-fish-app/1194860.html>

"Come Poila Boishakh, the people of Bengal will be able to order their favourite fish dishes via a mobile app. Thanks to the State Fisheries Development Corporation (SFDC) which started the app in January. Called Smart Fish, this app would allow a user to order live crabs too. Crabs weighing 150 g to 500 g would be available; the price per kilogram would be Rs 500. For a start, only sea crabs would be available. Varieties of ready-to-cook as well as dressed fish can also be ordered, like rohu, catla, prawns, pabda and several more. Orders will be taken from 10 AM to 5 PM every day on this app. The fish items are delivered to the mentioned addresses within three hours.

**West Bengal: A new study on East Kolkata Wetlands' carbon-absorption abilities is a wake-up call for conservation**

<https://scroll.in/article/874651/a-new-study-on-east-kolkata-wetlands-carbon-absorption-abilities-is-a-wake-up-call-for-conservation>

"Architecturally discordant high-rises and garish billboards screaming their products mask a placid blue-green expanse to the east of the Indian metropolis of Kolkata. Rushing through a busy day, commuters are barely aware of the East Kolkata Wetlands, which for over a century has been quietly flushing filth out of the city's system and cleaning its air. Wetlands cover approximately four to six percent of the Earth's surface and contain about 35% of global terrestrial carbon. In India, wetlands cover an estimated three percent of India's land area. Groaning under the weight of encroachments, the rapidly shrinking East Kolkata Wetlands is considered the largest natural treatment system for solid and soluble waste and is a Ramsar site (Wetlands of International Importance).

Additionally, East Kolkata Wetlands claims the unique distinction of being the largest "wastewater-fed aquaculture system in the world where the sewage is recycled for pisciculture and agriculture. The megacity's core area does not have a sewage treatment plant. Now, researchers have shown that the internationally recognised East Kolkata Wetlands locks-in over 60% of carbon from the wastewater it encounters, which might otherwise pile up in the atmosphere. "The wetlands act as a carbon sink and clean up the city's air. The carbon is sequestered in soil and biota (plant and animal life) of the EKW [East Kolkata Wetlands] ecosystem. If this 60% carbon is not stored by the EKW then it would have dissipated into the atmosphere, said study author Sudin Pal, of the Department of Chemical Engineering, Jadavpur University, Kolkata. Crisscrossed by creeks and canals, a mosaic of nearly 254 sewage-fed fishponds (bheris), agricultural land, garbage-farming areas and settlements make up the 125-square-km (12,500 hectare) wetlands that form an important portion of the mature delta of Ganga River. In the wake of urbanisation and vocation change observed among the East Kolkata Wetlands' farming and fishing community, Pal and colleagues sought to flesh out the carbon storing efficiency of the waterbody and map its role in mitigating global warming and accumulation of greenhouse gas emissions.

This long-term lockdown of excess carbon needs to be recognised and recorded in view of encroachment threats to the East Kolkata Wetlands as well as against the backdrop of India's plan to create additional carbon sinks in line with the landmark Paris accord, argue researchers. The researchers crunched data on organic and inorganic carbon content of wastewater and wastewater-fed fishponds across seven sampling sites along a 40-km stretch of the wetlands. "The study sites include some of the most polluted stretches of the city such as tannery conglomerates linked to China Town, a tannery effluent-fed fish pond, a composite wastewater-fed fish pond and a site where tannery effluent was mixed with municipal wastewater and other small-scale industrial effluents, Pal told Mongabay-India. An 'ecological subsidy' for Kolkata The wetlands save Kolkata, India's seventh most populous city, a staggering Rs 4,680 million a year in sewage treatment costs. About 1,000 million litres of wastewater each day is funneled

into the wetlands that filter it and discharge it in the Bay of Bengal some three or four weeks later. It takes care of more than 80% of the metropolis's sewage, supports around 50,000 agroworkers and supplies about one-third of Kolkata's requirement of fish, said Pal.

“Kolkata has remained an ‘ecologically subsidised city’ since the British Raj as the government doesn't need to invest in wastewater treatment for the city, he said. But he points out that over four decades (between 1972 and 2011), about 38.6 square km of wetlands were converted to built-up areas. “The importance of wetlands in rendering ecosystem services and solving the water crisis are recognised globally, Pal added. “Only motivated conservation efforts can resist further shrinkage of this sustainably productive natural treatment system in Kolkata's backyard. Vocation switch The disruption of the critical ecological balance in the wetlands that impacts fishing and farming activities, is linked to the community giving up these activities, declares urban economist Mahalaya Chatterjee. “The ecological balance is disturbed due to various factors such as obstruction of wastewater flow due to encroachment and other reasons, siltation in bheris and the changing signature of bio-chemical components in sewage water, said Chatterjee of the University of Calcutta. In addition, with scope for better education and lure of modern employment opportunities, fishing and farming have started losing appeal among the young generation. To tackle this switch, Pal and colleagues have proposed a carbon credit system for the farmers who have organically and unknowingly contributed to the ecosystem services by growing produce that sequesters carbon. Besides the sewage-driven pisciculture, other connected activities in the area that also trap carbon include paddy cultivation, farming of vegetables, poultry and animal husbandry.

Pal reasons, farmers can boost the carbon sequestration potential of their farms and other sites and gain economic incentive through a system of carbon credits. “Given the fact that the next generation does not want to adhere to the same vocation, a carbon credit system would help retain them in the vocation of farming which is essential to the survival of the wetlands, he explained. Waste into wealth The wetlands transform the untreated, nutrient-rich raw tannery effluent, municipal and industrial wastewater they receive, into 18,000 tons fish yields per year and nearly 150 tons of vegetable produce daily, said Pal. Aquaculture and sewage treatment work complementarily, like the cogs of a well-oiled machine. When the sewage arrives in the series of interconnected ‘bheris’ (shallow fish ponds), it is allowed to stand in the sun, letting bacteria and algae work their magic on the sewage and convert the waste into forms useful for fish feeds, says economist Debanjana Dey. The synergistic growth of bacteria and algae, in turn, is boosted by the nutrients in the waste water.

Commending the mastery of the fishermen over the resource recovery activity, Dey points out the yield of fish from the bheris is two to four-fold more than the volume achievable through normal ponds. “They know exactly how to excavate the ponds to the correct depth, clean the water by spraying kerosene, lime and oil cakes (khol), mix the right quantity of sewage, allow optimal time for conversion of the waste into fish feed, when to add spawns, how to protect the

embankments through water hyacinths and so on, say Dey and co-author Sarmila Banerjee in a chapter of the book *Sustainable Urbanisation in India*. The biggest sources of carbon in the East Kolkata Wetlands area are the solid and liquid wastes from the tannery industries with tannery waste typically containing a complex mixture of both organic and inorganic pollutants, informs Pal. The municipal sewage water was also a significant source of TOC (total organic carbon) in East Kolkata Wetlands. The inorganic carbon (total inorganic carbon or TIC) mainly came from the tannery sludge. “This decrease in carbon in wastewater was possible because of the flow-rate of wastewater in the carrying canals, long residence time in the wastewater-fed fish ponds and repeated use of wastewater in irrigating agricultural fields at the EKW ecosystem. However, the wetlands need to be managed properly to curb methane emissions, Pal concluded. Under attack The establishment of the posh satellite township Salt Lake City in the north-eastern fringes of the city reclaimed a part of the wetlands in 1960s, while two decades later, construction of Eastern Metropolitan Bypass, which enhanced the connectivity of the area with the city, made the wetland more accessible and made it an attractive site for real estate speculation. The East Kolkata Wetlands, despite getting a Ramsar recognition in 2002, is yet to have a “wise-use plan which essentially relates to the conservation and sustainable use of wetlands and all the services they provide, for the benefit of people and nature.

Meanwhile, a 5-km flyover through the wetlands has been planned by the West Bengal government which would be brought up by filling portions of the wetlands with concrete piers. The state government has promised compensatory digging of a 25-cottah lake (comes to about 1672 square metres) in the adjacent area. Last year, India notified a new set of rules under the Wetlands (Conservation and Management) Rules, 2017 that replaced the 2010 the Wetlands (Conservation and Management) Rules. Environmentalist Mohit Ray who has been championing the cause of disappearing water bodies in Kolkata, says the 2017 rules has “very much limited the legal safeguard of the wetlands throughout the country as the rule is applicable only for (a) wetlands categorised as ‘wetlands of international importance’ under the Ramsar Convention and (b) wetlands as notified by the central government, state government and Union Territory administration. “There are just 26 Ramsar convention recognised wetlands in India, Ray told Mongabay-India. “Besides that, there are several millions of wetlands and water bodies but those will be no more protected unless notified by the central or state governments. The previous Rule 2010 gave protection to all those wetlands and water bodies even not notified by any authority. So the new rule will definitely help the land sharks to fill up the precious wetlands and water bodies. Secondly, for East Kolkata Wetland, the rules bring “disaster, he said. “Section 4 (v) of the Rule 2017 says discharge of untreated wastes and effluents from industries, cities, towns, villages and other human settlements is not permitted in the wetland, he added. :However, East Kolkata Wetland uses Kolkata city's untreated wastewater for aquaculture in the wetlands and it is famous for such natural wastewater treatment. So the rule needs to be changed to include all types of wetlands and water bodies and also remove / edit Section 4 (v) of the Rule 2017.

## **West Bengal: Govt to cultivate hilsa in ponds and rivers**

<https://news.webindia123.com/news/articles/India/20180404/3313291.html>

"In a significant stride towards becoming self-reliant in the production of hilsa (ilish), the State Fisheries Department will now take up the cultivation of the fish in ponds and rivers. The department has signed an agreement with a Norwegian company. The company has been successful in cultivating salmon in pond and river water, and is helping the State Government in replicating that success for hilsa. The department gradually wants to stop importing the fish from Myanmar, which is much more than gastronomy for a Bengali. Ilish, as hilsa is called in Bengali, is about identity, history and nostalgia. Hilsa is a significant component of open-water capture fishery in Bengal, contributing about 19 per cent of the total fish landing in the Hooghly-Matla estuarine system. Over the years, due to wanton exploitation, pollution and habitat destruction, there has been a decline in the availability of hilsa. One of the measures to combat this was the setting up, inspired by the vision of Chief Minister Mamata Banerjee with regard to self-reliance in hilsa, of the country's first ever dedicated Hilsa Conservation and Research Centre (HCRC) at Sultanpur in Diamond Harbour in December 2013 by the Fisheries Department. The department is in the process of setting up two similar HCRCs in Tribeni in Hooghly district, located on the bank of the Hooghly, and Farakka in Murshidabad district, on the bank of the Ganga. The catching, marketing and transportation of fishes less than 23 cm in length is banned in the state. The Fisheries Department has put in place vigilante teams in all the concerned districts for keeping regular vigil on markets and landing centres. Special raids are conducted during the designated ban period between September 15 and October 24 each year. The department also maintains coordination and synergy with laboratories and institutes working on hilsa fishery. The department also takes awareness campaigns for hilsa conservation, by distributing leaflets, putting up banners and posters, and conducting boat and road rallies in areas where the fish is netted by fishermen. The fish is anadromous, that is, migrates up rivers from the sea to spawn, during the periods from June to September and from January to April.

## **West Bengal: Online fish sale gets momentum in Bengal**

<https://kaplanherald.com/2018/03/28/online-fish-sale-gets-momentum-in-bengal/>

"The traditional is shifting to digital space with online order of fish and doorstep delivery slowly becoming the norm in the city. Besides the West Bengal government's 'Smartfish' app for online shopping of fish, six engineering students from different premier institutions have launched an online retail shop where one can get fresh fish and meat along with groceries and some other food stuff. "We can provide you 75-80 types of fish and different varieties of chicken and mutton. The only thing you need to do is to place your order by 9 PM the day before and your order will be delivered the next day within two hours of procurement from the market, founder of 'Delybazar' Abhirup Basak said. 'Delybazar' has around 22,000 registered customers with an annual turnover close to Rs four crore. It can be availed through website and app both. "Even as

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there are some other online national grocery stores, the utmost USP of ‘Delybazar‘ is you get fresh, unprocessed and unpreserved fish and meat from here like nowhere else, Basak rpt Basak claimed. The West Bengal government’s ‘Smartfish‘ app to book fish online was launched earlier this year by the State Fisheries Development Corporation. Using the app, one can get fish delivered at doorstep in any form fillet, dressed, dry or pickle. SFDC Director Soumyajit Das had said after the app was launched in January, that 22 varieties of fish, seven categories of dried fish and fish pickle would be sold through this app. “This is the first time a government organisation has launched a fish app to sell varieties of fish. The fish will be delivered directly once the consumer makes the choice, he said. In a trial run of the app, SFDC sold fish in several parts of north eastern part of Kolkata including pockets of satellite township Salt Lake.

### **West Bengal: Fisheries dept to cultivate Ilish in ponds, rivers**

<http://www.millenniumpost.in/kolkata/fisheries-dept-to-cultivate-ilish-in-ponds-rivers-290773>

"In a significant stride towards becoming self-reliant in the production of Hilsa, the state Fisheries department will now take up the cultivation of the fish in ponds and rivers. The department has signed an MoU with a Norwegian company, which will extend all possible assistance in this regard. ""If Norway has been successful in cultivating salmon in pond or river water, then there is no reason why we should not be able to do the same with Hilsa. We are taking Norwegian help for processing of the fish with plans so that the fish can breed in pond or river water,"" state Fisheries minister Chadranath Sinha said. The department gradually wants to stop import of the fish from Myanmar, which is much more than gastronomy for a Bong. Hilsa, popularly known as Ilish in Bengal, is about identity, history and nostalgia. A Bong will take a mouthful of Hilsa and sort out the bones without showing any sign of discomfort. ""But over the years due to wanton exploitation, pollution and habitat destruction, there has been a decline in the availability of Hilsa in both sea and river water.

So we are taking all possible steps for conservation as well as increased production of Ilish,"" a senior official of the department said. The fish is anadromous, schools in coastal waters and ascends up the rivers for around 50-100 km to spawn during the South West monsoons (June to September) and also in January to April. April is the most fertile month for breeding of Ilish. It may be mentioned that, inspired by the vision of Chief Minister Mamata Banerjee in regard to self-reliance in Hilsa, the state Fisheries department came up with the country's first ever dedicated Hilsa Conservation and Research Centre (HCRC) at Sultanpur in Diamond Harbour in December 2013. Ilish, having migratory habits and trans-boundary distribution, is a significant component of open water capture fishery in Bengal, contributing about 19 percent of the total fish landing in the Hooghly-Matla estuarine system. The department is also taking up awareness campaigns for Hilsa conservation, by distributing leaflets, putting up banners and posters and conducting boat and road rallies across the state, particularly in those areas where Hilsa are

netted by the fishermen. "We are also maintaining coordination and synergy with laboratories and institutes working on Hilsa fishery," the official added. The catching, marketing and transportation of Ilish less than 23 cm in length, is banned in the state. "We have put in place vigilante teams in all the concerned districts for keeping regular vigil on markets and landing centres. Special raids are conducted during the designated ban period between September 15 to October 24 each year," the official said. "We are also in the process of setting up two similar HCRCs in Tribeni and Farakka," Sinha said.

### **West Bengal: Bengal goes fishing in foreign waters**

<https://www.telegraphindia.com/calcutta/bengal-goes-fishing-in-foreign-waters-217818>

"Imported varieties of fast-growing fish are being farmed in state-owned wetlands and ponds from Calcutta to Digha so that Bengalis reared on a diet of rohu and catla don't carp about dwindling local supply. Amur carp, one of the new farm favourites, is a Hungarian strain of the common carp that grows much faster than the catla and is said to taste as good sitting on a bed of yellow-red gravy. The cobia fish is already a replacement for bekti stuffing in several countries while the silver pompano is treated as a substitute for the pompret. The pompano is a marine fish that can survive in brackish water and grows much faster. For fish farmers, these varieties provide a clear economic advantage over the old school. "Two cycles of rohu or catla take one-and-a-half years. In comparison, two cycles of amur take a year," said Soumyajit Das, managing director of the State Fisheries Development Corporation. The corporation owns 900 hectares of water bodies reserved for fish farming in the East Calcutta Wetlands, Salt Lake, Rajarhat, Henry's Island, Frazerganj, Digha and some other parts of the state. The annual output of these fisheries is more than 15,000 metric tonnes of fish. B.K. Mondal, the general manager of the corporation, said the search for new varieties was prompted by fish production in Bengal failing to keep up with population growth. Demand is far higher than local supply and the state is becoming increasingly dependent on fish reared in other states. Agro-climatic changes triggered by pollution and global warming are the other triggers. Moreover, it is a challenge to grow rohu, catla and mrigal in shallow water bodies. But amur and some of the other imported varieties are more adaptive. The corporation procured 2,000 fry from a research centre in Bangalore a fortnight ago. They are being reared in a sewage-fed water body at Goltala, in North 24-Parganas. "If the fish survive there, we can farm them anywhere," Das said.

### **West Bengal: Fish on a click: Bengal's fish market starts home delivery**

<https://economictimes.indiatimes.com/news/economy/agriculture/fish-on-a-click-bengals-fish-market-starts-home-delivery/articleshow/63341882.cms>

"The traditional fish market is shifting to digital space with online order of fish and doorstep delivery slowly becoming the norm in Kolkata. Besides the West Bengal government's 'Smartfish' app for online shopping of fish, six engineering students from different premier

institutions have launched an online retail shop where one can get fresh fish and meat along with groceries and some other food stuff. "We can provide you 75-80 types of fish and different varieties of chicken and mutton. The only thing you need to do is to place your order by 9 PM the day before and your order will be delivered the next day within two hours of procurement from the market," founder of 'Delybazar' Abhirup Basak said. 'Delybazar' has around 22,000 registered customers with an annual turnover close to Rs four crore. It can be availed through website and app both. "Even as there are some other online national grocery stores, the utmost USP of 'Delybazar' is you get fresh, unprocessed and unpreserved fish and meat from here like nowhere else," Basu claimed. The West Bengal government's 'Smartfish' app to book fish online was launched earlier this year by the State Fisheries Development Corporation. Using the app, one can get fish delivered at doorstep in any form -- fillet, dressed, dry or pickle. SFDC Director Soumyajit Das had said after the app was launched in January, that 22 varieties of fish, seven categories of dried fish and fish pickle would be sold through this app. "This is the first time a government organisation has launched a fish app to sell varieties of fish. The fish will be delivered directly once the consumer makes the choice," he said. In a trial run of the app, SFDC sold fish in several parts of north eastern part of Kolkata including pockets of satellite township Salt Lake.

### **West Bengal: Crab collecting season starts: Pirates still active in Sundarbans**

<http://businessnews24bd.com/crab-collecting-season-starts-pirates-still-active-in-sundarbans/>

"In spite of several surrendering and killing forest robbers in gunfight with law enforcers, different pirate gangs are still active in the Sundarbans. More than once, different robber gangs surrendered before the Home Minister and drives are going on against the pirates, but the rest members of those gangs have been making new gangs who are ferociously active in the Sundarbans. Recently two pirates were killed in a gunfight in Barguna adjacent to Sundarbans. Besides, so many forest robbers were killed at several periods at several places adjacent to the Sundarbans in different gunfights with the members of law enforcers including Rab, Police and Coastguard. But new pirate gangs have created in the mean time who are still committing their misdeeds such as abduction of fishermen, looting valuable goods and realizing ransom, sources said. Crab collecting season already started in the Sundarbans, but the crab collectors are in fear of attack of pirates.

At least 60 fishermen were abducted from Koyala area of the Bay of Bengal by the forest robber gang 'Alim Bahini' and this occurrence created agitation among the administrations. Officials of the elite force Rapid Action Battalion (RAB-6) said, members of Rab-6 arrested three ferocious robbers of Alim Bahini from Sharonkhola range of the Sundarbans on along with some fire arms on December 4, 2016. On the same day a fisherman who managed to escape from the scene told

the journalists that 60 fishermen were abducted on demand of ransom by the forest robber gang named 'Alim Bahini'.

Residents of the abducted fishermen are at different places of Patuakhali and Chittagong. On the other hand 12 members of a forest robber gang named Khoka Bahini surrendered before the Home Minister Asaduzzaman Khan Kamal. Only after three days of this "surrendering ceremony", 20 fishermen were abducted and 7 fishing trawlers were looted from Mandarbaria area in the shore of the Bay by the forest robber gang Jahangir Bahini. Maksudul Alam, assistant conservator of forest (ACF) of Satkhira range of the Sundarbans said, activities of the pirates are continuing in the Sundarbans area. Fishermen sources said, pirates swoop on them while fishing and loot trawlers and goods belonged to them and there after they demand ransom huge amount of taka. Captain Mohammad Ali Chowdhury, Zonal Commander of West Zone of Coastguard said, whenever the coastguard is informed about the matter of abduction, they conduct drives at once. Rab office sources said, a total of 652 arms and 18055 bullets were recovered and 226 pirates were arrested by the members of RAB.

On October 19, 2016, through the members of Rab-8, 14 pirates surrendered. At length, on December 5, 2016, members of Bangladesh Naval ship Teesta arrested 14 robbers and rescued four fishermen from deep sea of the Bay at Kuakata area of Patuakhali district. Lt. A M M Zahidul Kabir, CPC-1 of Rab-6 said, drives against the pirates of the Sundarbans are unabated.

### **West Bengal: Inmates to get fish farming training at Dum Dum Correctional Home**

<http://www.millenniumpost.in/kolkata/inmates-to-get-fish-farming-training-at-dum-dum-correctional-home-289030>

"The state Correctional Administration department is taking up a project of fish farming for the inmates at Dum Dum Central Correctional Home (DDCCH). The training for fish farming will be imparted by the State Fisheries Development Corporation (SFDC), who will also train the inmates on cutting and processing of fishes and making fish fillets. "Fish farming in a scientific manner will be taken up in a pond which is situated inside the premises of DDCCH. The inmates will also be trained in preparation of various fish items. They will cook the stuff in the kitchen run by them inside the Home in association with an NGO and our vans will be taking them for door-to-door sale in different parts of the city," Soumyajit Das, managing director of SFDC said. SFDC also has plans of developing a fish processing unit at the premises of DDCCH. Das, who recently paid a visit to the DDCCH, was highly impressed with the garden inside the Home, that has been maintained by the inmates. "We have four gardens surrounding our large waterbody at Nalban Food Park. We will be taking assistance from the inmates in beautification of these gardens. The inmates involved in this activity will be brought at Nalban Food Park thrice a week for gardening," he added. It may be mentioned that inmates at the Home have fish items in their menu list thrice a week. "Once they take to fish farming in the pond, we can increase fishes in their regular food chart," a senior official of the Correctional

Administration department said. The department has plans to extend this activity of fish farming to other correctional homes in the state, if this project augurs well. "We have been taking various measures for rehabilitation of the inmates, once they are released from the prison. This is a major stride in this regard," a senior official said.

### **West Bengal: Japanese appetite drives crab farming in the Sundarbans**

<https://www.thethirdpole.net/2018/03/07/japanese-appetite-drives-crab-farming-in-the-sundarbans/>

"For as far as the eye could see, there are fisheries in Satkhira growing saltwater prawns. Satkhira district in south-western Bangladesh bordering India is famous for its bagda chingri (tiger prawns), most of which are exported all over the world. In recent times, a trend of cultivating mud crabs has caught on in this area, fuelled entirely by overseas demand, particularly from countries like China, Taiwan, Thailand, Singapore, Malaysia, South Korea, and Japan. Local residents and crab traders say most of the catch is exported live to Japan, where they are considered a delicacy and fetch a premium price. Curiously, the soft-shelled mud crabs (*Scylla serrate*), also known as mangrove crabs and found in the wild, are not eaten locally and are cultivated solely for export. Some villagers say the shallow ponds of depths of 2-3 feet become unsuitable for cultivating anything else once mud crabs are grown for a few years because the soil becomes exceedingly saline, too salty even for brackish water shrimps. In Talberia village on the northern fringes of Sundarbans, mud crabs have become the preferred crop for villagers, who have been shifting from prawn cultivation in brackish water ponds, partly due to lower risks. "I used to cultivate tiger prawns in my gher (fishery) but my crop failed due to a viral epidemic, Nirmal Chandra Mandal of Talberia told thethirdpole.net. "It is better to cultivate crabs as they are much more resistant to pest attacks. Higher returns also play a big role in the shift to mud crabs. Kalpana Gayen, a mother of two boys, one of whom is a prawn trader, has also started cultivating crabs.

"I earn around BDT 40,000 (USD 480) a year from selling crabs, which is almost double the amount I used to get from tiger prawns, Gayen said. Salted land The situation was completely different a couple of decades ago. Most farmers in Talberia used to grow rice in the fertile, low-lying lands around the village. That changed in 2009, when Cyclone Alia broke embankments and flooded the fields, making them saline. Most residents turned to prawn cultivation, following the trend since the late 1970s across much of coastal Bangladesh, which found a ready export market and resulted in better livelihoods for poor people in this underdeveloped region of the country. Bangladesh has over 710 kilometres of coastline with more than half a million hectares (5,000 square kilometres) of mangrove tidal flats suitable for brackish water aquaculture. Although the nation has made rapid economic progress since its independence in 1971, large sections of its population remain poverty stricken. With a per capita income of USD 1,532 in

2017, the IMF ranked Bangladesh a lowly 148 out of 186 countries. In comparison, its much larger neighbour India had a per capita income of USD 1,852 in 2017 with a country rank of 140.

Smallholder aquaculture is seen as a viable solution for its people living in coastal areas, as the consumption of fish and shrimps is traditional in all parts of the country and also has high overseas demand. Since the 1980s, saltwater prawn farming has emerged as a prominent means of livelihood in the area around the Sundarbans, the world's largest mangrove forest that straddles Bangladesh and India. Most local residents are poorer than other parts of Bangladesh and have also been suffering from the impacts of climate change such as accelerated coastal erosion, sea level rise and increasingly violent cyclonic storms. Seafood earnings Shrimps and crabs are the third largest foreign exchange earner for Bangladesh, which runs a huge trade deficit of USD 8.62 billion. Seafood exports of USD 544 million in 2012-13 accounted for 4.4% of its GDP. It provides direct employment to 1 million people and another 3.5 million are dependent on it. However, the lure of easy earning has resulted in reports of unsustainable farming practices, particularly the overuse of antibiotics and increased salinity in the soil. In Joymonigola village near Mongla in Bagerhat district, about 100 kilometres from Satkhira, villagers have also started cultivating mud crabs in a place that risks inundation due to rising sea levels brought on by climate change. Due to increased salt in the soil, rice cultivation has become virtually impossible and residents have little choice but to turn to brackish water aquaculture. And the culture of choice is mud crabs due to its lower vulnerability to pest and viral attacks and the prospect of high returns, reasons similar to what farmers say in neighbouring Satkhira district. For Subodh Chandra Gayen, a resident of Joymonigola, the progression from rice to prawn to crab cultivation is clear. "Saltwater gets into our fields frequently. Once the soil becomes saline, it's impossible to grow rice unless you leave the field fallow for at least three years for rainwater to leech the salt away. That's not an option for poor farmers like us, he told [thethirdpole.net](http://thethirdpole.net).

"Prawn cultivation is possible but it has become risky in recent years due to viral outbreaks. Growing crabs is better because they are hardy and traders give us a good rate for them. Scientific validation needed the father of a grown up son and daughter says that mud crabs, from which he has earned some BDT 30,000 (USD 361) last year, can be cultivated in highly saline water that is unsuitable even for tiger prawns. There is little scientific validation to these claims but most villagers cultivating crabs across Satkhira and Bagerhat districts are unanimous on this. "After we cultivate prawns in a field for a few years, it becomes so saline that it is only fit for growing crabs, says Nirmal Chandra Mandal of Talberia village in Satkhira. Mud crabs are seen as an incidental product arising from the culture of shrimps. Mud crab farming is still dependent on wild resources though some hatcheries have recently been established.

As the demand of mud crab in the international market has increased, the number of crab gatherers has also significantly increased. In addition, gathering of crabs that have not reached their adult age for fattening has contributed to the depletion of adult crabs as breeders, according

to a 2015 study. Since wild resources are now under threat, the management of resources and establishment of hatcheries are needed to sustain the mud crab industry in Bangladesh, the study said. Most of the studies done on prawn and crab fisheries are socio-economic in nature and there is more research needed to say for sure that shrimp and crab aquaculture leads to increased salinity, according to Pavel Partha. Partha is the Coordinator, Diversity, Interdependency and Pluralism at non-profit development organisation called Bangladesh Resource Center for Indigenous Knowledge (BARCIK). BARCIK works with local communities to incorporate indigenous knowledge and local practices into contemporary development interventions. "What is certain, however, is that these recent changes in farming practices are having an impact on the local mangrove ecosystem, Partha told thethirdpole.net. "The extent of impact can only be ascertained through detailed scientific research.

Till that happens, and unless alternative livelihoods are secured for the impoverished communities living around the Sundarbans in Bangladesh, and Japanese craving for mud crabs remains insatiable, there is no immediate reason for such farming to slacken. From the present position of global market-driven demand and supply food chain, sound ecological management of the endangered Sundarbans seems to be a far cry.

**West Bengal: DMF mahila wing asking women to join them in celebrating international women's day on youtube**

[https://www.youtube.com/watch?v=iRfbX20NY\\_I](https://www.youtube.com/watch?v=iRfbX20NY_I)

"DMF mahila wing asking women to join them in celebrating international women's day. Video is available at: [https://www.youtube.com/watch?v=iRfbX20NY\\_I](https://www.youtube.com/watch?v=iRfbX20NY_I)

**West Bengal: 14 abducted fishermen rescued in Sundarbans**

<http://en.prothomalo.com/bangladesh/news/171979/14-abducted-fishermen-rescued-in-Sundarbans>

"Members of Forest Guard rescued 14 abducted fishermen and seven fishing boats following a gunfight with forest robbers in Gatar Khal area of Katka sanctuary in the Sundarbans in Bagerhat on Saturday, reports UNB. A Forest Guard team was conducting regular boat patrol in Gatar Khal (Cannel) around 1:30pm. Sensing the presence of the law enforcers, robbers opened fire on them, forcing the Forest Guard members to retaliate that triggered a gunfight, said divisional forest officer (DFO) of Sundarbans east zone Mahmudul Hasan. However, it was not immediately known that anyone of the robbers was hurt during the gunfight, he added. Later, the law enforcers rescued six fishermen who were abducted for ransom recently and seized three boats around 5:00pm, said the DFO. Following the gunfight, members of Bangladesh Coast Guard (BCG) and Forest Guard jointly conducted several drives in different places in the forest and rescued eight more fishermen and three boats, said Lt Commander Mahdin, commanding

officer of BCG West Zone in Mongla. Meanwhile, no forest robber was detailed till filing of this report.

### **West Bengal: Aid for steady stream of hilsa**

<https://www.telegraphindia.com/calcutta/aid-for-steady-stream-of-hilsa-212140>

"Norway is going to help us find ways to increase hilsa production. The country is collaborating with the central government's department of science and technology (DST) for research on hilsa. The state government has also decided to pitch in with funds for the project. Nofima, a Norwegian institute for food, fisheries and aquaculture research, will work with the Central Inland Fisheries Research Institute (CIFRI), India, to research hilsa. "Our institute Nofima has been working on salmon production for 45 years and they have expertise in aquaculture," said ambassador Nils Ragmar Kamsvag, a fan of the silver fish. Kamsvag was in Serampore on Wednesday to attend the inauguration of the Denmark Tavern, restored under the Serampore Initiative, a collaboration between the National Museum of Denmark, West Bengal Heritage Commission, West Bengal Tourism Development Corporation Ltd, Intach and the Hooghly district. Salmon and the hilsa have a lot in common - both are sea fish that breed in freshwater. "I learnt about the hilsa when I first visited the state several years ago. I met the then secretary of fisheries here, who along with a couple of biology professors told me about the popularity of fish in this state. We have that in common. Norwegians also love their fish," said Kamsvag, while resting at the restored heritage canteen on the Governor's House compound in Serampore. Norway exports eight billion dollars worth salmon every year. "We are the second biggest exporters of fish in the world," he said. "Our researchers will help you solve the problem of breeding hilsa. We have a lot of expertise on fish management too. We could easily share that." "Our researchers at Nofima are confident that their expertise will help multiply hilsa and increase production. It has already done so with the Bangladesh government," the ambassador said. Kamsvag was visiting the state along with four other Nordic ambassadors - Peter Taksøe-Jensen of Denmark, Nina Vaskunlahti of Finland, Thorir Ibsen of Iceland, and Klas Molin of Sweden. "As a Nordic group, we travel once a year to a state in India to explore possibilities of economic cooperation. We have 27 million inhabitants in our countries and we form the 11th biggest economy in the world. We have between 500 to 600 Nordic companies investing 20 billion dollars in India which have created 200,000 jobs," Kamsvag said. Danish ambassador Peter Taksøe-Jensen announced a scholarship of Rs 18 lakh for Serampore College. All six ambassadors exhorted the students to travel to the Nordic countries to study. "Our education is free. Even international students are not charged tuition fees in our countries," said Taksoe-Jensen.

### **West Bengal: Dhrubajyoti Ghosh (1947-2018): He found wealth in waste**

<http://indianexpress.com/article/opinion/columns/dhrubajyoti-ghosh-death-1947-2018-he-found-wealth-in-waste-5070411/>

"Sometime in the early 1980s, West Bengal's finance minister wanted to find out how to gainfully use Kolkata's sewage. Dhrubajyoti Ghosh, an engineer in the state's planning board, was assigned the task. He was to travel across the country and prepare a report within a year. He got his ticket to visit India's first sewage treatment plant at Dadar, Mumbai. Then came a moment of introspection. "It occurred to me that they might ask me how Kolkata handles its sewage, Ghosh later recounted, "I didn't know. He searched high and low and found nothing. It seemed nobody knew what the city did with its sewage. So Ghosh did what officers aren't encouraged to do in government policy: He went for a walk. He ambled along the 28-km channel that carried the city's sewage eastwards, along the slope, to where the salt marshes once stood. Here, he saw shallow ponds that turned the city's sewage into algae. Then, the algae-rich water was let into nurseries, to be eaten by fish that was then sold in the city. A marvel of recycling, of turning waste into food. Shortly after, Ghosh wrote an account of what he'd seen and sent it to Richard Meier, a famous American ecologist. Meier was delighted; he wrote back to tell Ghosh that if he invested five years in the wetlands of east Kolkata, he'll make history. Ghosh replied he was ready to invest 10. He ended up dedicating most of his working life to the wetlands, right up to his death at the age of 71 in a Kolkata hospital last Friday, February 16. That the East Kolkata Wetlands (EKW) exist today, spread over thousands of acres, owes to Ghosh's untiring efforts.

The fisherfolk here have grown fish in Kolkata's sewage for the past 80 years, at least. Their craft has been fine-tuned over generations. Both the scale and nature of the operation has no parallel in the world. The wetlands, often called the city's kidneys, treat its sewage and garbage for free, provide employment to thousands, and generate cheap food. Not to mention preventing floods, absorbing Kolkata's runoff during the monsoon (are you listening Chennai, Mumbai, Bengaluru?). Another country might have been proud. Another country might have learned from Ghosh's work, and found inspiration in EKW's fisherfolk to clean its rivers and lakes saturated with untreated sewage. Not India. But for Ghosh, who retired in 2004 as West Bengal's chief environment officer, land sharks with political connections would have developed the wetlands a long time ago.

Perhaps nobody imagined Ghosh's tenacity and the scope of his scholarship. Through years of effort, he documented the wetlands and its fisherfolk, surveyed the land, created a strong case for their protection, all in a way only a government official could have done. In 2002, the Ramsar Convention on Wetlands extended its protection to the EKW. Now, both the Union and state governments are bound by an international treaty to protect it from real estate developers. This made Ghosh unpopular in some government circles. He had to take early retirement. As an official, he worked from inside the government to protect the EKW. After his retirement, he became a full-time activist and a scholar of ecology. He started writing about the EKW widely. He brought out books based on his studies.

He collaborated with numerous organisations and individuals, inspiring them, mentoring researchers, all the while keeping alive his relationship with the fisherfolk of the EKW. Among

them, he was not a scholar who had come from outside to study them as his subject material. He was a friend, a go-to man, agony aunt, and a warm avuncular presence. There was a sweet irony in Ghosh's ecological interest in sewage. Born in 1947, Ghosh began his career in the late 1960s as a junior engineer, making sewers for a monthly salary of Rs 100. He dabbled in the Naxal brand of Maoist politics, but was disillusioned soon. A book he read during a train journey mentioned, in the footnotes, an ecological study of West Bengal villages. He fell in love with the idea of ecology. He got in touch with Meiers, then a famous ecologist in the University of California in Berkely. Meiers became the external supervisor of Ghosh's PhD from the University of Kolkata. He was still working as an assistant engineer in the city's water and sanitation authority. The young engineer so impressed Meier that he would come to India on his own steam to guide Ghosh, later becoming his mentor.

Our governments spend crores of rupees in contractor-heavy programmes to clean rivers. Ghosh's life and work showed that the solutions are cheaper than we imagine. They lie in ordinary people. All that is needed is leaders and officials who are ready to go out for a walk. With an open mind, with a warm heart, with the commitment of sound scholarship.

### **West Bengal: Coastal fishermen in danger**

<http://www.thedailystar.net/country/coastal-fishermen-danger-1534363>

"Hundreds of fishermen living in nine char areas near the Bay of Bengal remain vulnerable due to inadequate number of cyclone shelters there. Local people said there are only three cyclone shelters in the coastal areas adjacent to the Sundarbans. Of the three, two cyclone shelters in Dublarchar and Alorkol are now abandoned while the other in Shalerchar is in a vulnerable condition, said Mahmudul Hassan, divisional forest officer of Sundarbans East Forest Division. Many fishermen living in the coastal areas said although the government earns handsome revenue from this sector, fishermen are still netting and drying their catches at risk of their lives. Delo Nikari, a fisherman of Sharankhola upazila in Bagerhat, said hundreds of fishermen, who earn their livelihood from the forest area and the Bay of Bengal, stay there unsafe round the year. "If a cyclone hits, we do not have any place to take shelter, he said. He said the authorities concerned should build more cyclone shelters as well as repair the existing three. Another fisherman Rahman Farazi said the authorities concerned should repair the cyclone shelters in Dublarchar, Alorkol and Shalerchar areas as soon as possible. "Loss of lives due to natural disaster will reduce if more cyclone shelters are built in the area, another fisherman Aminul Islam said. Divisional Forest Officer of Sundarbans East Forest Division Mahmudul Hassan said Ministry of Disaster Management and Relief built the three cyclone shelters in 1994. The government should take immediate steps to repair the existing three cyclone shelters and build some more, he added.

### **West Bengal: Tuna, salmon & other marine delicacies to be available in Kolkata, courtesy State Govt**

<http://www.uniindia.com/tuna-salmon-other-marine-delicacies-to-be-available-in-kolkata-courtesy-state-govt/states/news/1132813.html>

"Thanks to the West Bengal Fisheries Development Corporation (SFDC), fish-lovers in Kolkata would soon be able to lay their hands on sea fishes like tuna, salmon and sardines, and sea crabs as well. The Corporation is busy making arrangements to make these available soon. They would be imported from the Andaman and Nicobar Islands. After the necessary processing, the fishes would be made available through various wholesalers and retail sellers, and also through the fish-selling vans run by the SFDC. Not just selling, the SFDC is also making preparations to breed and export these fishes, alongside the other exotic fishes it already does, like cobia, chanos, prawns (bagda) and basa. At the recent Bengal Global Business Summit (BGBS), memoranda of understanding (Mou) worth Rs 1,500 crore was signed in agriculture and related sectors, of which 19 MoUs worth Rs 480 crore were signed in the fisheries sector

### **West Bengal: From seafood to fresh water fish, all at one place**

<http://www.dailypioneer.com/city/from-seafood-to-fresh-water-fish-all-at-one-place.html>

"The CR Park fish market, located in a preponderant Bengali colony of the national Capital of India is famous for offering a sight of numerous stalls stacked with varieties of fishes. Lined up in rows, a well famous Hilsa, Bhetki Surmai, and big Rohu fish along with Singapuri crab were the main magnetism for the visitors. Besides, fish lovers also visit the market to satisfy their curiosity about different assortment of fishes. Dried fish and Bombay duck fish which is imported from the coastal areas of Mumbai are also one of the features of the market. Some of the other fishes and insects that are sold in these markets are pomfret, catfish, crabs, shellfish, prawns, Rohu, Surmai, Singhara, Bhetki, Pink Salmon, Rawas Indian Salmon, Bangda Indian Mackerel, Surmai Indian Seer Fish, Paplet Indian Butter Fish, Bangus Milk Fish, Bhetki Barramundi, lady finger are a freshwater and brackish water fish, popular in India especially West Bengal, Odisha, Tripura, Assam and Andhra Pradesh, and several other kinds of seafood.

Pabda fish (Rs 600 per kg) is another popular freshwater river fish, popular in West Bengal and cooked with an authentic Bengali recipe called Pabda Macher Sorshe Jhal. Prawns which were lined one after another were giving a delicious look. The prices of fish at the markets differ with quality such as for pomfret fish you have to pay Rs 650 to 900 per kg. Similarly for Surmai, it is Rs 500 per kg. The large silver coloured Rohu fish (10 kg) is considered an important freshwater fish and very commonly eaten in India are commonly ask by customers. Its price ranges from Rs 180 to Rs 450 per kg. Besides, the prices for other different fish are ranging from Rs 100 to Rs 1600 per kg. Further, Singapuri crab that was being sold at few shops at Rs 800 per kg also attracted many customers.

A large number of people were seen purchasing their favourite fish even in the morning hour. The Pioneer visited the two most famous fish shops in market number 1 and 2 of Chittaranjan

Park and INA market to enquire about different varieties of fish. There are two famous markets in CR Park. Both the markets offer varieties of fish. Although, the stocks are preserved on ice but quite fresh to purchase. Dulal of the 'Dulal Fish Shop' said in Bengal, there is a popular saying that if you do not eat fish, you are not a Bengali. "We sells a variety of fish and sea foods. The sale is good as most of the people here are Bengalis who love having fish in their daily menu, he said. He also said that Ilish or Hilsa is the paradigmatic Bengali fish although it is particularly bony and difficult to eat but still demanded repeatedly. "This market is a hub of a wholesale market for fish. With the increase in the number of restaurants in the city which offers seafood, this market has doubled the transactions, he added. The main sources of import the fishes and sea food are coastal areas of Andhra Pradesh, Goa Kerala, Karnataka, West Bengal Odisha and Gujarat. Among them, Gujarat is the main exporter of sea fish while Bhetki is imported from Kolkata. Rajasthan, Uttar Pradesh, Oddisa, and Madhaya Pradish are the main suppliers of common fish like Rohu Pabda, Rawas, Hilsa.

Similarly, INA Market located right across Dilli Haat has a number of fish stalls selling fresh seasonal fish. Shrimps, prawns, lobsters, crabs and various other kinds of seafood are found along with fresh water fish like Rohu and Katla are found here. There are shops that sell a range of variety of dried fish. The fish pickles are famous and popular in these markets. According to the locals, the fish market was established in the early 1960s by the people displaced from their homes in East Pakistan during the Partition of India and the Partition of Bengal. Also market Number 1 and 2 here, the famous fish market are believed to come up in 1973-74. Most of fish sellers came from 24 Parganas district of West Bengal in the mid 70s and set up their shops. Once known as EPDP Colony (East Pakistan Displaced Persons) was later renamed after the name as Chittaranjan Park in 1972 in the memory of Deshbandhu Chittaranjan Das, a noted freedom fighter.

### **West Bengal: Coast Guard programme for children of fishing hamlets**

<http://www.india.com/news/agencies/coast-guard-programme-for-children-of-fishing-hamlets-2868341/>

"The Indian Coast Guard (ICG) today conducted a 'Day at Sea' event for children of fishing hamlets at Frazerganj in South 24 Parganas district, as part of its initiative for close interaction with the fishing community of coastal areas. Nineteen boys and girls of Frazerganj, a fishing harbour on Bay of Bengal coast at the southern tip of West Bengal, were provided a thrilling experience of travelling on board a hovercraft that had been brought in from the ICG base at Haldia for the joyride, official sources said here. The children, some of whom had seen a hovercraft but never been on one so far, were excited to be shown the cockpit area and be witness to the pilots operating the machine, an ICG spokesman said. The crew members of the Air Cushion Vehicle (technical name for hovercraft) tickled the curiosity of the young children by showing them various life saving and safety equipment on board.

On culmination of the sortie, the children were explained as to how the Coast Guard carried out its duty of ensuring coastal security and how the fishing community stood to benefit by becoming the 'eyes and ears' of security mechanism in the area. Inspector General Kuldeep Singh Sheoran, Coast Guard Commander at Regional Headquarters (North East) in Kolkata said that such outreach programmes were absolutely essential in the interests of coastal security. "We have to take the fishing communities on board if we need to be effective. They need to be sensitised time and again of the role that they can play and be reminded that their families stand to gain as much as anyone else if the coastal areas are safe, he said. The outreach programme for the children is amongst a slew of events that the Coast Guard is conducting in the run up to the 41st Raising Day on February one.

### **West Bengal: Govt takes up project to boost production of near-extinct fishes**

<http://www.uniindia.com/bengal-govt-takes-up-project-to-boost-production-of-near-extinct-fishes/states/news/1114591.html>

"The West Bengal Government's Panchayats and Rural Development Department, in collaboration with the Fisheries Department, has prepared an elaborate scheme to augment production of near-extinct fishes by using the Mahatma Gandhi National Employment Guarantee Act (MGNREGA) Scheme, to help people coming from economically challenged background. By means of the scheme, pisciculture will be carried out in water bodies that have been renovated, along with production of fish seeds, renovation of ghats and training to those involved. A place to dry fish will also be constructed. Self-Help Groups (SHG) and people from economically challenged background are being involved in the project. In the coastal areas, space has been created to dry fish.

### **West Bengal: Fishworkers demand inland fisheries policy**

"The draft National Inland Fisheries and Aquaculture Policy is yet to see the light of the day. More than six months have elapsed after the expert committee was formed last year. As you know, the National Platform for Small Scale Fish Workers (Inland) has already submitted recommendations on the National Policy for Inland Fisheries. It is high time to remind the government of its commitment.

### **West Bengal: Sundarbans Drowning as Climate Change Causes Sea Level to Rise**

[http://www.indiawest.com/news/india/sundarbans-drowning-as-climate-change-causes-sea-level-to-rise/article\\_3cb41cfe-fd6c-11e7-ab68-23f89f872a51.html](http://www.indiawest.com/news/india/sundarbans-drowning-as-climate-change-causes-sea-level-to-rise/article_3cb41cfe-fd6c-11e7-ab68-23f89f872a51.html)

"The living drowns and the dead float out of their graves as the rising sea engulfs Baliara village in Mousuni, an island facing the Bay of Bengal. Every third or fourth day, the high tide enters homes and leaves farms a wasteland. At one edge of the Sundarbans -- the world's largest mangrove forest -- Mousuni used to have an embankment along Baliara to hold back the rising

sea. That collapsed during 2009's Cyclone Aila. Since then, there have been three attempts to build sea walls, all of which have collapsed against the power of the sea. Scientists say seas around the world are rising due to climate change, but the Bay of Bengal is rising twice as fast as the global average. I had first visited Baliara in 2009, two months before the cyclone hit. Badruddin Sarkar, retired headmaster of the village school, had then stood on top of the 18-foot embankment and pointed out to the sea to the homes he used to have – the first was overtaken by a rising sea in 1991 and the second in 2004.

Two months after I met him, a storm surge from Cyclone Aila topped the embankment, ruined Sarkar's paddy fields and freshwater fish farms with salt water, killed his livestock, and forced him to migrate to Kolkata, over 100 km away. Now, Abdul Hanan, 61, retired headmaster of the school's primary section, pointed out the effects of the rising seas. There is no sign of the original embankment, girders from subsequent attempts to build a sea wall lie overwhelmed and abandoned, dead coconut and date palms dot a landscape of saline pools where nothing can grow. At the confluence of the Muriganga – a distributary of the Ganga – and the Bay of Bengal, Mousuni is a bustling island of about 5,000 households. But over 2,000 of them are in Baliara, and they are under a sentence of displacement or death.

""How do you expect us to live?"" asks a visibly angry Jasimuddin Sarkar, pointing to his farm that is under about a foot of dirty brackish water. He has tried to protect his home from the rising sea with plastic fencing, but the water keeps getting in. Peek inside the large hut, and you see are piles of soggy old newspapers. That is what the family uses to mop up the water from their furniture, their floor, their walls. They do it every three or four days. So how do they survive? Jasimuddin's answer is the same as that of everybody in Baliara. ""My son works in Kerala as a mason. He sends money home. That's how we survive."" Others talk of their sons, brothers or husbands working as security guards, farm labor, masons, mall cleaners and so on. It's not a situation that anybody likes – but where will they go? Jasimuddin says he knows nothing except paddy and fish farming, so what will he do elsewhere for a living? Over 150 families in Baliara have already left permanently. They could not sell their land, because nobody was interested in wasteland. They just left. Has the government been of any help? Local panchayat member Himangshu Aich said those who could prove their farm ownership got a compensation of Rs. 10,000 per family after Cyclone Aila. And since then, the efforts of the government engineers to hold back the waves are there for all to see.

The Sundarbans straddle the Bangladesh-India border. The Indian part has around five million people. Nilanjan Ghosh, an ecological economist, has led a study that shows 1.5 million of these people will have to be permanently relocated outside the Sundarbans, because sea level rise will make it impossible for them to live there or earn a livelihood. That means the number of people affected and to be affected by sea level rise in the Indian Sundarbans alone is higher than that of all small islands around the world put together. The impending fate of these islands is a major subject of discussion at the annual talks of the U.N. Framework Convention on Climate Change.

In contrast, the plight of people in the Sundarbans is not even mentioned in international climate talks, not even by the government of India. It is not as if there has been no attempt to build climate resilience in this area. For well over a decade, WWF India has been distributing special varieties of paddy seeds that are salinity tolerant. It still works further inland, but in this area, the water and soil salinity levels have now gone well beyond the survivability of this variety. The problem is far more fundamental than the solutions attempted so far. Apart from sea level rise due to climate change, the entire Sundarbans is sinking because dams and barrages in the Ganga and its tributaries upstream hold back the silt that forms the soil that forms the delta. No policymaker in New Delhi shows any interest in even starting to address that problem. Is there a solution at all? Go around 2,000 kilometres from the Sundarbans, down India's east coast to Pichavaram in Tamil Nadu, and you will see one with potential. Mangroves have been cut down all along the coastlines of South Asia, but there was still a large strand standing at Pichavaram when the 2004 Indian Ocean tsunami hit the entire region from Indonesia to East Africa. Coastal villages to the north and south of Pichavaram were devastated, killing many.

But the 16 villages shielded by the Pichavaram mangroves escaped with very little damage. The mangroves tempered the wave. Now it is a protected forest through which you can take boat rides, an activity much loved by young couples. As the boatman poles through about a foot of water, you can get very close to the mangroves, which you cannot do in the Sundarbans for fear of tigers and crocodiles. There have been some sporadic attempts to plant mangroves in the Bay of Bengal facing islands of the Sundarbans, but neither the authorities nor the residents seem to be aware it may be the only effective wall against a rising sea.

### **West Bengal: Sinking Sundarbans islands underline climate crisis**

<http://indiaclimatedialogue.net/2018/01/17/sinking-sundarbans-islands-underline-climate-crisis/>

"Kalyani Mandal has gone way past hope. Living in Dhoblat Shibpur, a coastal village on Sagar Island in the Sundarbans estuary, her house has been washed away by the sea thrice in 10 years. "How many times can you make a fresh start?" she asks despairingly. Sagar, a large island of 160,000 residents at the confluence of the Ganga and the Bay of Bengal, perhaps depicts how people are fighting a losing battle against an increasingly hostile sea brought on by global warming. It shows the worst effects of climate change coastal erosion, rising sea levels, unpredictable tidal surges, land salinity and more violent cyclonic storms. The story of Sagar is repeated across the Sundarbans archipelago of 102 islands, out of which 54 are inhabited. Some of these islands Bedford, Lohachara, Kabasgadi and Suparibhanga have already sunk into the sea. Other like Ghoramara and Mousuni, which are thickly populated, are rapidly losing land; and it's just a matter of time when they too will be lost. In Mousuni Island, only women, children and the old are to found in the hamlets facing the sea. In Baliara village, for instance, high tides rush into farmland and homestead every few days, leaving the soil saline and unfit for either

cultivation or shallow, freshwater fisheries. “Our sons have no option but to migrate out for work, Abdul Majid, 56, told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “But we have nowhere else to go. See: [Rising sea swamps island along Bengal coast](#) Global phenomenon Halfway across the world, the same human tragedy is repeated in the islands of Tuvalu, Kiribati and Fiji. Kiribati, an island nation in the Pacific, is home to just about 110,000 people living on some 30 atolls and reef islands. It straddles the equator, where the sea level rise is double the global average.

“The home of our people and our culture is in jeopardy. My country is sinking into the sea, Anote Tong, former president of Kiribati, said at the Bonn climate summit in November. Tong in 2014 finalised the purchase of 20 sq. km on Vanua Levu, one of the Fiji islands, about 2,000 km away. “We would hope not to put everyone on (this) one piece of land, but if it became absolutely necessary, yes, we could do it, he had said at that time. The plight of low-lying islands in the face of climate change has captured global attention. The island nations of the Pacific Ocean in particular have been in the spotlight. The annual global climate summit in November 2017 was held under the presidency of Fiji, underlining the importance of urgent action to contain global warming to within 2 degrees Celsius compared with pre-industrialised times under the Paris Agreement. The Pacific island nations, who contribute nothing to climate change, are the ones who suffer most from its impacts.

“In another generation or two, my people will have no homeland, Tafue Lusama, general secretary of Tuvalu Christian Church and spokesman for his nation, said in Bonn. Tuvalu, a tiny nation of six coral atolls, three reef islands, and 10,000 people, has been vigorously demanding climate justice as an active member of the Alliance of Small Island States (AOSIS). Sundarbans ignored Even as the international community rightly turns its gaze towards the Pacific islands since they are indeed sinking rapidly, the imminent danger of islands in the Sundarbans where millions more live have received scant attention.

“There has been around 250 sq. km land loss from southern sea-facing islands over the last 45 years, Sugata Hazra, Director of the School of Oceanographic Studies in Jadavpur University in Kolkata, had told [indiaclimatedialogue.net](http://indiaclimatedialogue.net) in an earlier interview. See: [Shrinking Sagar Island struggles to stay afloat](#) Millions are affected and displaced due to sudden onset of climate change impacts such as violent cyclonic storms and this is particularly true for the Sundarbans region that straddles Bangladesh and India, according to Aminul Haque of the Coastal Association for Social Transformation Trust (COAST) in Bangladesh. “Global co-operation is absolutely necessary if we are to address the issue of climate refugees, Haque told It is inevitable that a large number of people will be displaced from the islands of Sundarbans, particularly in India because they are thickly populated, says ecological economist Nilanjan Ghosh, senior fellow at the Observer Research Foundation (ORF) and consultant to WWF India. According to a study led by him, some 1.5 million people have to be permanently relocated outside the Sundarbans due to the fast rise in sea levels. “A conflict-free organic movement of the population is a challenge, Ghosh told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “But given the inevitability of

sea level rise, we have no option but to strategize for a planned retreat and ecosystem regeneration. India needs proactive steps to address the crisis at Sundarbans and also bring up it at international platforms, according to Harjeet Singh, global lead on climate change for ActionAid International.

“The people who are displaced or are forced to migrate due to climate change must be provided legal protection through the United Nations Warsaw International Mechanism on Loss and Damage, he said. “Developing nations such as India and Bangladesh need support so that large-scale migration does not lead to conflict over scarce resources. However, it would be futile for India to raise the issue globally unless the government takes some action on the ground to help people to cope with the changes brought on by global warming, according to Anurag Danda, Programme Lead of Climate Change Adaptation at WWF India. “We are talking about loss and damage on a massive scale and the business-as-usual model of development funding is no longer sufficient, he told [indiadialogue.net](http://indiadialogue.net). Although experts are unanimous that action must be taken, both the federal and state governments seem to be indifferent to the impending crisis. For Kalyani Mandal of Dhoblat Shibpur, Abdul Majid of Baliara and countless others living on the islands of Sundarbans, time has already run out.

### **West Bengal: Coastal security focus on fishing communities**

<https://timesofindia.indiatimes.com/city/kolkata/coastal-security-focus-on-fishing-communities/articleshow/62561724.cms>

"In a continuing effort to develop fishing communities along the coast into 'eyes and ears' for security forces, a team of twenty personnel of the Coast Guard, Marine Police and Department of Fisheries set off on motorcycles from Raj Bhavan in Kolkata on Thursday for an expedition that will conclude on Tuesday. The expedition, flagged off by West Bengal governor Keshari Nath Tripathi, will visit remote fishing hamlets along the West Bengal and Odisha coastline, organize health camps and tell fishermen what to look out for to prevent any sea-borne attack on lines of the 26/11 Mumbai strike. The event has been organized by the Coast Guard Region (North East) and commander/IG K S Sheoran was present when the bikers were flagged off. India has a long coastline that is difficult to secure. Nearly 37 years before the Mumbai terror strike, in 1971, Pakistani submarine PNS Ghazi was prowling along India's eastern coast for days. After Ghazi's destruction, it came to be known that its crew had actually landed in rubber dinghies along the coast to replenish food supplies and also interacted with fishermen. The local population had no clue of the implications of having a Pakistani submarine lurking around so close to the Indian coast. ""Fishing communities are extremely crucial in ensuring coastal security. To enhance goodwill, medical camps will be held,"" a senior official said.

### **West Bengal: CG to educate fishermen to check illegal movement across**

[http://www.ptinews.com/news/9410357\\_CG-to-educate-fishermen-to-check-illegal-movement-across.html](http://www.ptinews.com/news/9410357_CG-to-educate-fishermen-to-check-illegal-movement-across.html)

"With security challenges increasing in the eastern seaboard and to check illegal movement of people across borders along waterways and the Bay of Bengal, the Coast Guard will educate fishermen about it and act as its eyes and ears, an official spokesman said here today. The Coast Guard will hold a five-day motorcycle rally and free medical camps from tomorrow along the West Bengal and Odisha coasts to sensitise the fishermen, spokesman Avinandan Mitra said. As part of the Coast Guard Day celebrations, its regional headquarter (North-East) will conduct the rally and medical camps where fishermen will be given training on dealing with situations in high seas and life-saving techniques, he said. The rally will cover nearly 1400 kms in five days, Mitra said. Twenty riders on 10 motorbikes will participate in the rally, which will be flagged off by West Bengal Governor Kesri Nath Tripathi from the Raj Bhavan lawns here. The participants will be from the Coast Guard, Marine Police and Department of Fisheries of West Bengal. The team will be accompanied by Coast Guard ambulance and a team of doctors which will conduct free medical camps in the fishing villages of West Bengal and Odhisa enroute, the spokesman said.

### **West Bengal: Stretch of Teesta turns grave for fish trove, poisoning suspected, Jalpaiguri DM orders probe**

<https://www.telegraphindia.com/states/west-bengal/stretch-of-teesta-turns-grave-for-fish-trove-201630>

"Hundreds of dead fish have been seen floating in a stretch of the Teesta in Jalpaiguri over the past two days. A probe has been ordered amid suspicion that the water in the Mondalghat area along a 2km stretch of the river might have been poisoned. As The Telegraph visited the spot, around 12km from Jalpaiguri town, on Tuesday, it was found that fish like ""baim"" (tire track eel), ""taki"" (spotted snakehead), ""boal"" (Wallago), ""boroli"" (Barred baril), ""bata"" (Bata) and some other species were either floating on the river's surface or had washed up on the bank. A section of locals were seen collecting the fish. ""We have seen the dead fish since Monday morning and even on Tuesday. Some people here have collected around 45 to 50 kg of fish. We have no idea how it happened,"" said Mintu Das, a fisherman residing at Gomostapara in Mondalghat, located close to the river. Das and some other fishermen however, did not collect the fish. ""We suspect some people have put insecticides or other poison in the water, which has left the fish dead. Common fishermen like us will be without our livelihoods because of such acts,"" Jainul Haque, another fisherman, said, adding crabs too had floated up. Ranjit Roy, a local resident, said some people had sold some of the dead fish. ""The

administration should see that those fish are not sold. It can lead to severe health hazards from poisoning." Earlier, in 2011 and 2015, similar incidents had occurred in Karala, a rivulet flowing through Jalpaiguri town and merging at the Teesta. It was learnt that insecticides were put in the river water to catch fish. Also, poison was mixed in the water of Teesta on December 2012, which had left several fish dead. "When the Karala water got polluted, additional water had to be brought in from Teesta to purify it. It also took several months to restore ecological balance of the river," a Jalpaiguri resident said. As the news spread, officials of fisheries department reached the spot. They collected samples of dead fish and water. "We will examine the samples to find out what has led to the (latest) incident. Our officers are also visiting the local markets to aware people and to see that such fish are not sold," Ashish Saha, the deputy director of fisheries here, said. They however, are yet to assess the quantity of fish which have died due to suspected poisoning. The district administration has started an inquiry. "We are conducting an inquiry to find out why the river water got polluted. Those responsible will be identified," said Rachna Bhagat, DM, Jalpaiguri.

### **West Bengal: Rising Sea swamps island along Bengal coast**

<https://www.thethirdpole.net/2018/01/15/rising-sea-swamps-island-along-bengal-coast/>

"The living drown and the dead float out from their graves as a rising sea engulfs Baliara village in Mousuni, an island facing the Bay of Bengal. Every third or fourth day, the high tide enters homes and leaves farms a wasteland. The village burial ground has been engulfed by salt water and skeletons keep floating up out of the earth. At one edge of the Sundarbans – the world's largest mangrove forest – Mousuni used to have an embankment along Baliara to hold back the rising sea. That collapsed during the 2009 Cyclone Aila. Since then, there have been three attempts to build sea walls, all of which have collapsed against the power of the sea. Scientists say seas around the world are rising due to climate change, but the Bay of Bengal is rising twice as fast as the global average. I had first visited Baliara in 2009, two months before the cyclone hit. Badruddin Sarkar, retired headmaster of the village school, had then stood on top of the 18-foot embankment and pointed out the homes he used to have – the first was overtaken by a rising sea in 1991 and the second in 2004.

All that could be seen of the second was the trunk of a coconut palm – it used to be part of the foundation. Two months after I met him, a storm surge from Cyclone Aila topped the embankment, ruined Sarkar's paddy fields and freshwater fish farms with salt water, killed his livestock, and forced him to migrate to Kolkata, the capital of the Indian state of West Bengal, over 100 kilometres away. Now, Abdul Hanan, 61, retired headmaster of the school's primary section, pointed out the effects of the rising seas. There is no sign of the original embankment, girders from subsequent attempts to build a sea wall lie overwhelmed and abandoned, dead coconut and date palms dot a landscape of saline pools where nothing can grow. At the

confluence of the Muriganga – a distributary of the Ganga – with the Bay of Bengal, Mousuni is a bustling island of about 5,000 households. But over 2,000 of them are in Baliara, and they are under a sentence of displacement or death. “How do you expect us to live?” asks a visibly angry Jasimuddin Sarkar, pointing to his farm that is under about a foot of dirty brackish water, a small species of amphibious fish the only sign of life in it.

“Do you see that embankment between my two farms, with the coconut tree on it? It is all dead. He has tried to protect his home from the rising sea with plastic fencing, but the water keeps getting in. Peek inside the large hut, and the first thing you see are piles of soggy old newspapers. That is what the family uses to mop up the water from their furniture, their floor, their walls. They do it every three or four days. Climate refugees So how do they survive? Jasimuddin's answer is the same as that of everybody in Baliara. “My son works in Kerala as a mason. He sends money home. That's how we survive. Others talk of their sons, brothers or husbands working as security guards, farm labour, masons, mall cleaners and so on. The diaspora that has moved from Kerala to West Asia to work has led to another, internal, diaspora from the Sundarbans to go and work in Kerala. It's not a situation that anybody likes. “Nobody wants to get their daughters married to a boy from Baliara, Jasimuddin says.

“We could get my son married only after searching for months. Ask her, and he points to a woman in her early twenties standing nearby. Salma Bibi – married to Jasimuddin's son a few months ago – is from a village about 20 kilometres inland. “I completed school. I know I can get a job elsewhere, she says confidently. “I've been telling my husband and everyone else at home we should just go away from here. This is no life – getting everything at home drowned in dirty salt water every third or fourth day. Two of the three saris my father bought for my marriage have been ruined. I'm going to tell my husband the next time he comes home for a holiday, and we're going to go away. Where will they go? Salma is not clear, while Jasimuddin says he knows nothing except paddy and freshwater fish farming, so what will he do elsewhere for a living? Over 150 families in Baliara have already left permanently. They could not sell their land, because nobody was interested in wasteland. They just left. Has the government been of any help? Local panchayat member Himangshu Aich said those who could prove their farm ownership got a compensation of Rs 10,000 per family after Cyclone Aila. And since then, the efforts of the government engineers to hold back the waves are there for all to see.

The situation is the same in other islands in the Sundarbans facing the world's largest bay. More refugees than from all other islands The Sundarbans straddle the Bangladesh-India border. The Indian part has around five million people living in it. Nilanjan Ghosh, an ecological economist who is a consultant for Observer Research Foundation and WWF India, has led a study that shows 1.5 million of these people will have to be permanently relocated outside the Sundarbans, because sea level rise will make it impossible for them to live there or earn a livelihood. Like Badruddin Sarkar, many residents of Baliara have lost their home two or three times. Every time they have moved further inland. Now they cannot do it any more, because there is no space left.

That means the number of people affected and to be affected by sea level rise in the Indian Sundarbans alone is higher than that of all small islands around the world put together. The impending fate of these islands is a major subject of discussion at the annual talks of the UN Framework Convention on Climate Change.

A strong push by the governments of these island nations forced an aspirational goal in the 2015 Paris climate agreement – to keep average global temperature rise within 1.5 degrees Celsius. In contrast, the plight of people in the Sundarbans is not even mentioned in international climate talks, not even by the government of India. Use the surging seas tool developed by the think tank Climate Central to see what can happen to the Sundarbans. It is not as if there has been no attempt to build climate resilience in this area. For well over a decade, WWF India has been distributing special varieties of paddy seeds that are salinity tolerant. It still works further inland, but in this area, the water and soil salinity levels have now gone well beyond the survivability of this variety. Two lines from T.S. Eliot's *The Wasteland* keep coming back, “What are the roots that clutch, what branches grow / Out of this stony rubbish.

The problem is far more fundamental than the solutions attempted so far. Apart from sea level rise due to climate change, the entire Sundarbans is sinking because dams and barrages in the Ganga and its tributaries upstream hold back the silt that forms the soil that forms the delta. No policymaker in New Delhi shows any interest in even starting to address that problem. A possible way out. Is there a solution at all? Go around 2,000 kilometres from the Sundarbans, down India's east coast to Pichavaram in Tamil Nadu, and you will see one with potential. Mangroves have been cut down all along the coastlines of South Asia, but there was still a large strand standing at Pichavaram when the 2004 Indian Ocean tsunami hit the entire region from Indonesia to East Africa. Coastal villages to the north and south of Pichavaram were devastated, killing many. But the 16 villages shielded by the Pichavaram mangroves from the tsunami wave escaped with very little damage. The mangroves tempered the wave.

Now it is a protected forest through which you can take boat rides, an activity much loved by young couples. As the boatman poles through about a foot of water, you can get very close to the mangroves, which you cannot do in the Sundarbans for fear of tigers and crocodiles. Today, the Pichavaram mangrove forest serves another vital function as climate change hits farmers nearby. Coastal Tamil Nadu is going through another of its frequent and severe droughts right now. According to the Intergovernmental Panel on Climate Change, an increase in frequency and severity of droughts is one of the effects of global warming. Monique Barbut, head of the UN Convention to Combat Desertification, pointed out recently that drought now kills more people than all other so-called natural calamities put together. The current drought has forced Rajendran – in his fifties – to once again leave his farm and travel six km to become a boatman at Pichavaram. It helps that he had once taken his school education seriously, so now he can converse with tourists in English as well as Tamil. Every year, he says, he has been supplementing his farm income by working as a boatman around the Gregorian and Tamil New

Year holidays, 15 days apart. This year, he expects it will form the major part of his annual income. There have been some sporadic attempts to plant mangroves in the Bay of Bengal facing islands of the Sundarbans, but neither the authorities nor the residents seem to be aware it may be the only effective wall against a rising sea.

**West Bengal: Graveyard of a Land: An insatiable sea licks away the Sunderbans, leaving lakhs of lives at water's edge**

<https://www.outlookindia.com/magazine/story/graveyard-of-a-land/299684>

"Hamidul Rehman is angry. At 24, he has witnessed the sea swallow his home, situated on an island in the Sundarbans, the world's largest delta, at least six times. Each time his family shifted further inward; each time the ocean pursued them relentlessly. "I can't be mad at nature, can I?" he asks, his voice quivering with helpless rage. "But it makes my blood boil to see the administration's attitude towards us. Neither state nor Centre has done anything to check the steady, alarming erosion of our land, he adds. While swathes of the Sundarbans the western part of which falls in West Bengal especially coastal islands on the Bay of Bengal like Ghoramara, Sagar Deep and Mousuni, are partially submerged, the plight of their inhabitants, out of sight from the mainland and thus at the bottom of priority lists of administrators, have largely gone unnoticed and unheeded.

They are not the only ones in grave danger. According to oceanographers, environmentalists and NGOs who have been tracking the Sundarbans' gradual disappearance into the sea, the danger is no longer limited to the islands, but has reached the very doorstep of India's mainland. Earlier this month, a group of experts convened a meeting to chalk out plans of bringing the issue to the urgent notice of governments local, regional, national and international. Environmental scientists say that the gradual depletion of the Sundarbans, which are covered in mangrove forests, will eventually have an adverse impact on the mainland, beginning with southern Bengal, including Calcutta, and gradually affect more parts of the country.

According to a report of the Journal of Earth Science and Climatic Change, "Mangrove forests protect the coastal zone against the influences of ocean.... Relatively narrow strips of mangroves can substantially reduce the energy of wind-driven waves. Extensive tracts of mangroves can protect adjacent land and human populations from storm surges of water.... A healthy mangrove forest can prevent salt water intrusion, preventing damage of fresh water ecosystems and agricultural areas...and minimise the effect of rising sea levels due to global warming. Located at a distance of 175 kms from Calcutta, if the Sundarbans go down with all its mangrove forests, there is very little to protect the metropolis from the approaching, rapacious sea. The question is why, in spite of the mangroves, are the islands eroding?"

"The chief cause of erosion in the Sundarbans is climate change and global warming, explains Joydeep Gupta, South Asia director of the international environmental group The Third Pole.

Because of CFC emission and greenhouse effect, temperatures across the world have marked a steady annual rise by one degree Celsius, leaving molten glaciers and rising sea levels in its wake. As seawater seeps inwards, salination causes permanent damage. Salinity has rendered the once fertile Sundarbans uncultivable, making traditional livelihoods like farming and sweet-water fishing impossible. Most alarmingly, it has caused the ground to become brittle which, when buffeted by dangerously high tides, crumbles and disintegrates. “This has played havoc with the lives of the locals, who are poor farmers or fisherfolk and given rise to large-scale displacement, with islanders either trying to relocate to drier parts or fleeing altogether, says environmental activist Jayanta Basu, who has been trying to bring the issue to the notice of authorities for the past 15 years. He points out that when Cyclone Aila ripped through the Sundarbans in 2004, killing hundreds and destroying thousands of homes, it demonstrated the magnitude of the problem that manmade global warming had rendered the Sundarbans too vulnerable to withstand the effects of powerful natural calamities, unlike in the past.

“The irony is that the people of the Sundarbans have contributed absolutely nothing to the carbon footprint responsible for global warming, Gupta notes. In fact, other causes that have exacerbated erosion in the Sundarbans have also originated elsewhere. WWF scientist Anurag Danda explains that the landmass of the Sundarbans has traditionally depended on the silt that is carried to it by the Ganga, the main river feeding the delta. In recent decades, the thinning landmass is starved of this vital nutrient, for by the time the river arrives at the delta, its original course is subjected to so many upstream diversions that it just doesn't carry enough silt. The report cited above is also scathing about the effects of deforestation on the Sundarbans. “There has been an overall and continuous decline in mangrove forests caused by conversion to agriculture, aquaculture, tourism and urban development, it says. Reduced mangrove will increase the threat to human safety and shoreline development from coast hazards such as erosion, flooding, storm waves, cyclones and tsunamis, it adds.

This was proved glaringly during the 2004 tsunami, when villages which were protected by mangroves were virtually untouched; localities on either side of these, which lacked mangrove cover, were flattened as waves ripped through them. So acute is the problem, so inexorable the damaging circumstances rise in global temperatures, unabated diversion of the Ganga upstream etc. Scientists have virtually lost hope of a fight to save the Sundarbans. The current focus has shifted from protecting and preserving the land/forest to managing the teeming thousands who face displacement. “The thrust of governments vis-a-vis the Sundarbans should be the absorption of the nearly 50 lakh inhabitants, says Basu. Indeed, as the Sundarbans, slowly but steadily, looks set to go under, the impending socio-economic turbulence is much more exigent, feel environmentalists. Pointing out a possible administrative nightmare, they advocate prompt, crisis-evading decisions. The hapless people of the Sundarbans are still not willing to accept the idea of mass displacement; they cling obstinately to the hope that the administration would miraculously save the land from disintegrating permanently. “All they have to do is put up

the barriers and embankments which used be there before the Aila, says Moirul Bibi, a resident of Mousuni island, whose mud hut is a mere two-minute walk from the last scene of devastation.

“I was born and raised in this island. I got married here, had children and I'm a grandmother now. I don't want to leave this place. But I will do everything to help the administration in recreating the buttress, even if it means digging up clay and building the mud mould with my bare hands and carrying heavy stone slabs to be pasted on top of the embankment to rebuff the sea. Unwilling to accept the inevitable doom, she talks about having heard from a neighbour's son about how the government spends crores on reclamation in Mumbai, where he lives now. “If they can create land on the sea where there is none, why can't they protect land that is already there? she asks. “Is it because we are poor and that is why our lives have no value? In the meantime, exasperated by the lack of response from not just governments but funding agencies, environmentalists have stepped up the demand for money. At the Sundarbans conference, Harjeet Singh of Action Aid International, who has been lobbying with governments of rich nations chief contributors to the world's carbon footprint for funds to tackle the devastating impact of climate change, talks about their parsimony in this matter. “Funds have been abysmally inadequate, he says.

“Whatever little money that does come by is diverted through a complicated process via different governmental departments and banks and eventually gets lost in transition. So we have created the green climate fund as a one-stop solution. Our demand internationally is that beginning from 2020, each year \$100 billion should be allocated for the purpose of work related to climate change. Meanwhile, the sorely disappointed Rehman is ready with an appeal, topped with a convincing argument, to environmentalists around the world for the protection of his home. “I am aware of the global fight to save the tiger from extinction, he says. “Isn't the Royal Bengal Tiger the world's most famous tiger? Will they allow them to be engulfed by the sea?

**West Bengal and Bangladesh: Twist in Teesta Tale: Mamata links Bangladesh polluting Mathabanga, Churni Rivers with water sharing issue**

<http://m.indiatoday.in/story/teesta-river-talks-ganga-padma-system-bangladesh-bhagirathi-hooghly-bengal/1/1123170.html>

"The 'tampering' of the river courses of the Ganga-Padma system by Bangladesh is becoming a big stumbling block to the long-pending resolution of the sharing of Teesta river waters with India. Although Mamata Banerjee had raised the issue with Prime Minister Narendra Modi back in May 2017, it's taken centre stage now with the chief minister insisting a clean-up (by Bangladesh) of the Mathabanga river be made mandatory for resumption of Teesta talks. A distributary of the Padma, the Mathabanga enters India (Bengal) at Gede in Nadia district and after flowing for 19 km splits into the Churni and Ichhamati. The Churni flows for another 53 km before draining into the Bhagirathi Hooghly. The latest provocation comes from a privately run

sugar mill-cum-distillery on the banks of the Mathabanga at Darshana (Bangladesh) that is dumping untreated chemical effluents into the river. Consequently, a 72 km downstream stretch of the river that flows along some 120 fishing villages in Bengal has become unusable.

Fishermen like Basudeb Halder say the pollution is killing the fish in the river. Halder says earnings from the prawns and shrimp he nets from the Mathabanga have fallen from Rs 20,000 to a mere Rs 4,000 per month. Like him, scores of fishing families are struggling to survive. Men like Bibhas Halder have quit fishing and become daily wagers on farms. The filth from across the border is also beginning to contaminate the groundwater here. Although Mamata took up the problem only now (many believe as a means to delaying a settlement on sharing the Teesta waters), the Mathabanga & Churni River Rescue Committee (MCRRC) has been raising the issue since 2007. In May 2017, the committee petitioned the prime minister's office seeking a resolution through diplomatic channels. Earlier, it had gone to the National Green Tribunal, which directed the Centre to take up the matter with Bangladesh. While New Delhi sat on things, in October, the MCRRC wrote directly to Bangladesh prime minister Sheikh Hasina apprising her of the NGT's order.

Despite the late response, river experts are now confident that Mamata will also take up the problem of the severely curtailed flows in the Churni, Mathabanga, Atreyee, Punarhaba and Tangon rivers, owing to a new dam on the Bangladesh side. Notably, PM Hasina is very keen on an early resolution of the Teesta issue, ahead of the general elections in Bangladesh in 2018. But people close to her say Mamata isn't having any of it. Besides the rivers, there are a host of issues that have cropped up as irritants between Bangladesh and West Bengal. These include the stopping of exports (from Bangladesh) of the highly sought after Padma Hilsa fish since 2012 and doubling of import duty on Bengal's mangoes. The CM has also voiced concern over reduced flows at the Farakka barrage resulting in frequent shutdowns at the power station, a consequence of the sharing of Ganga waters with Bangladesh. MCRRC secretary Swapan Bhowmik says Mamata's decision to link the Teesta issue with problems in Mathabanga and Churni is a clever move. ""If Bangladesh is keen on the Teesta water, it will have to take care of the other trans-border rivers it shares with Bengal,"" he says. Analysts believe it will also politically benefit Mamata in Nadia and north Bengal.

### **West Bengal: Govt begins pisciculture training for destitute women**

[http://wap.business-standard.com/article/pti-stories/bengal-govt-begins-pisciculture-training-for-destitute-women-118010600618\\_1.html](http://wap.business-standard.com/article/pti-stories/bengal-govt-begins-pisciculture-training-for-destitute-women-118010600618_1.html)

"The West Bengal government has started imparting pisciculture training to destitute women, minister Sashi Panja has said. The Women and Child Development department along with the fisheries department, is imparting the training to women in state-run homes, the Women

and Child Development minister said at the inaugural function of the 'Bengal Fish Fest' at Nalban Food Park here. ""The first such training has already begun at our Liluah Home. The inmates will also be skilled up in cutting of fish and packaging,"" she said at the Fish Fest, organised by the Indian Chamber of Commerce and the department of fisheries, which started yesterday. Fisheries Minister Chandra Nath Sinha launched a mobile app 'Smartfish' to enable the public buy fish online and delivered at the doorstep in any form - fillet, dressed, dry.

He said the app, developed by State Fisheries Development Corporation (SFDC), had already been successfully used on a pilot basis in Salt Lake. The app can be downloaded from the play store and over 20 varieties of fish and seven varieties of dried fish will be made available through the app. The minister said the government is also giving stress on marketing of fish and imparting training to women in self-help groups as part of the move. ""This will also help in increasing employment opportunities,"" he said. Sinha also inaugurated a delivery system by state-run Benfish where cooler-fitted bikes will take fillet, dry fish and cooked fish to the doorstep of people. The third edition of the festival, having 90 stalls including 40 well-known restaurants apart from government stalls from various departments, will continue till January 7.

### **West Bengal: Fishers raise their voice to Save Churni River**

"Fishing community representatives from 12 villages of Krishnaganj Block of the District of Nadia assembled at Majdiya Bazar on 29th December 2017. The meeting was convened to consider possibilities of protecting the livelihood of fishing communities through their own organisation. 'Save Mathabhanga and Churni River Committee' and 'Chakdaha Science and Cultural Organisation' took the main initiative in convening the meeting as well as in organising the participation of fishing community representatives. DMF supported the initiative. River Churni is a stream in the Nadia district of West Bengal. It is a tributary of the Mathabhanga River, itself a tributary of the Padma River at Munshiganj in the Kushtia District of Bangladesh. The Mathabhanga divides into two rivers, the Ichamati and the Churni near Majhdia in Nadia district. The Churni flows through Shibnivas, Hanskhali, Birnagar, Aranghata, and Ranaghat, and finally joins River Bhagirathi-Hooghly near Chakdaha. Its length is almost 56 kilometres (35 mi). The river's origin is at 23.40 North, 88.70 East and its confluence is at 23.13 North, 88.50 East. Swapan Bhoumik of 'Save Mathabhanga and Churni River Committee' presided over the meeting and Bibartan Bhattacharjee of 'Chakdaha Science and Cultural Organisation' coordinated the proceedings. Swapan Bhoumik narrated in detail the terrible condition of rivers Mathabhanga and Churni and the plight of the fishing communities dependent on the rivers. Bibartan Bhattacharjee said that the survival of fishing communities of the area depended on the survival of Churni and Mathabhanga rivers. These rivers should be treated as mothers and have to be revived at any cost. He said that it was most regrettable that almost none of the fishers in the area possess fisher identity cards given by the government.

Debasis Shyamal, Vice-President of DMF and Secretary of NFF said that it is of great shame that even after 70 years of independence the fishier people of the area are yet to get government I-Cards as recognition of their occupational dignity. If the fishers in other districts can get the I-Cards then why the fishers of Nadia will remain deprived. He presented the benefits and schemes the government provides for the fishing communities and asked the fishing community representatives present in the meeting to raise their voice to claim their entitlements. He further said that from then on DMF will wholeheartedly try to help the fishers in the area in their struggle to protect their lives and livelihood. The fishers of the Krishnaganj Block will be organised under Krishnaganj Block Matsyajibi Forum. In future fishing communities in other parts of the district will be linked up to form the Nadia District Matsyajibi Forum in order to take the fishers' struggle forward.

The fishing community representatives raised the following issues:- \* Identity Cards for Fishers; \* Stopping Pollution of the River Water; \* Stopping dumping of the solid waste and waste water in the river by the Kero Company ; \* Stopping excavation of river banks; \* All fishing boats to be registered and provided with license; \* Stop destructive fishing methods; \* Old Age Pension for fishers; \* Accessing benefits and schemes provided by the government for fishers. Ambia Hossein, Assistant Secretary of DMF proposed to organise a 10 day campaign programme to develop awareness among the fishing communities and help build up their organisation. A committee was constituted from among the fisher representatives to take forward the organising activities including enrolment of members. Swapan Bhoomik and Bibartan Bhattacharjee were given responsibility to provide necessary support.

### **West Bengal: Investing in aquaculture**

<https://www.seafoodsource.com/news/aquaculture/indian-state-of-bengal-investing-in-aquaculture>

"In order to meet growing local demand for fish, India's Bengal state is aiming to up its farmed fish production. According to Bengal's Tribune news service, a government official said that the state has decided to initiate a fish cage culture system, or cage aquaculture, in order to catch up with local demand currently being met by importing fish from other states in India. The state will be using brackish water bodies owned by the State Fisheries Development Corporation (SFDC), as well as by fishery cooperatives and private owners. Initially, the state government will set up 80 cages ranging in diameter from two to 15 meters that will be installed in reservoirs, rivers, lakes, and the sea in the districts of North and South Parganas and East Midnapore, and all the cages will be operated by SFDC.

The official said that the new aquaculture operations will be engaged in rearing milkfish, mullet, pearl spot, and shellfish including shrimp, crab, and lobster. The state is looking to replicate the success of large aquaculture producing countries such as Norway, Thailand, Japan, and the

Philippines, which satisfy their own domestic demand for fish through aquaculture, and even export to other countries. The official said because the required financial investment to begin an aquaculture operation is low, this farming method is ideal for small-scale fishermen and farmers as a means to give them an alternative source of income. The state government is supporting researchers and commercial producers in the development of regional aquaculture and has asked several small and limited-resource farmers to adopt it as an alternative to traditional agricultural crops because aquaculture appears to be a rapidly expanding industry, the official said. Depending on the success of the venture in commercial terms, the fisheries department has plans to start similar activities in freshwater bodies and in marine areas, according to the official. With 210,000 hectares, West Bengal has the fourth-largest total area of impounded brackish water area after Odisha, Gujarat, and Kerala.

### **West Bengal: Fish Vendors' Conference Pledges to End Deprivation, Assert Rights**

"After milk fish is the largest source of animal protein for the people of India. But fish Vendors are a neglected lot. The government hesitates even to recognise them as fish workers and do almost nothing for them. Without the fish retailers the fishers or fish farmers would not get the money for the fish produced by them. Without the bewilderingly wide and efficient network of fish vendors the 80 million fish eating citizens of this country would not get fish in the markets or even at their doorsteps. More than 3 million people are engaged in fish retailing and no less than 70% of them are women. Thus small scale fish vending plays a major role in maintaining food security, nutrition, employment and gender balance in occupation in our society. At the call of Dakshinbanga Matsyajibi Forum (DMF) more than 200 fish vendor representatives from 6 districts of West Bengal assembled at Kanthi on 22nd December 2017 to discuss and workout together the ways and means to address the age old neglect and deprivation experienced by them. The coastal fish vendors union of the district of East Midnapore hosted the meeting. Fraternal organisations, both from West Bengal and outside participated in the meeting to encourage the fish vendors. Notable among them have been the National Hawkers' Federation and Odisha Matsyajibi Forum.

Veteran trade union leader and President of Jangalmahal Matsyajibi Forum Soumen Ray presided over the meeting. Debasis Shyamal, Vice President of DMF and Secretary of NFF coordinated the meeting. The meeting started with inaugural song by Harekrishna Baul Sampraday. Sujoy Jana, President of Medinipur Zila Upokuliya Matsya Vendor Union welcomed the participants. He briefly narrated the history of the union that was born through a struggle of fish vendors and has today grown to a more than 4,000 member strong organisation. He stated that the state level conference of fish vendors had become necessary for building up the united strength of fish vendors to achieve their rights.

Inline image 5 after the welcome address Certificates for Cultural Performance at the WFFP GA7 in Delhi were handed over to the members of the Harekrishna Baul Sampraday. 'Small

Scale Fish Vendors: Right to Livelihood - Pledge to Unite', a pamphlet in Bengali published by DMF on the occasion, was released by Achintya Pramanik, veteran leader of fish vendors. Next, Pradip Chatterjee, President of DMF, in his address did set the context of the meeting by first stating the important role played by the small fish vendors in our society towards food security, maintenance of nutritional status and employment together with gender balance in occupation. He then mentioned the neglect and deprivation commonly experienced by the fish vendor community. He placed the following demands for protection and enhancement of the life and livelihood of fish vendors - \* National Policy for Fish Vendors; \* Recognition of occupational dignity through issuance of government identity cards for every fish vendor; \* Low interest bank loan for fish vendors; \* Transport facilities from fish collection points to fish markets; \* Fish markets with proper facilities; \* Cold boxes and cold storage for fish preservation; \* Modern weighing machine and tray to sell fish; \* Savings-cum-Relief scheme and allowance during no-fishing period for coastal fish vendors; \* Scope to form fishermen cooperatives for socio-economic upliftment of fish vendors; \* Social security schemes for fish vendors; \* Priority for women fish vendors; \* Stopping harassments and fleecing of fish vendors by anti-socials and musclemen; He also mentioned Governance Rights for fish vendors to - \* Participate in management and control of fish auction process at fish landing centres on the coast and fish depots; \* Determine and maintain transport systems for fish vendors; \* Declare any eviction of fish vendors without their consent and /or proper rehabilitation as illegal and if any removal of fish vendors become really necessary then ensure participation of fish vendors in the whole process including assessment of the need and rehabilitation; \* Participate in management of fish retailing markets; \* Participate in planning and implementation of government schemes for fish vendors including issuance of identity cards. Especially the right to manage and control various benefit and welfare schemes meant for fish vendors through local association, cooperative society or union of fish vendors to preclude unscrupulous usurpation of the facilities by people who are not fish vendors.

He requested the fish vendor delegates to decide on a road map to build up a strong state platform of fish vendors and elect an ad-hoc committee to take forward the work. DMF General Secretary Milan Das greeted the representatives of fish vendors on behalf of DMF and said that the conference will go a long way in protecting ANF enhancing the livelihood of fish vendors. He requested all DMF organisers and activists to work diligently in organising fish vendors. Murad Hossein, leader of the National Hawkers' Union, described in brief the struggles of the hawker community. He pledged solidarity to the struggle of fish vendors and offered to fight together. Chittaranjan Barik, leader of Odisha Matsyajibi Forum, also pledged full support to the fish vendors' struggle. He said that in Odisha OMF will also try to build up a strong organisation of fish vendors. DMF and fish vendor leaders Biswanath Bera, Ambia Hossein, Chaitan Besra, Bidhan Dey and others spoke on the occasion.

**West Bengal: Scheme to make use of MGNREGA to boost production of near-extinct fishes**

<http://www.millenniumpost.in/kolkata/scheme-to-make-use-of-mgnrega-to-boost-production-of-near-extinct-fishes-277045?>

"The Panchayats and Rural Development department has prepared an elaborate scheme to augment production of near-extinct fishes by using Mahatma Gandhi National Employment Guarantee Act (MGNREGA) Scheme to help people coming from economically challenged background. The Panchayats and Rural Development department and state Fisheries department are working hand-in-hand for success of the scheme. From 2016-17 for the combined scheme, the fund allocation was Rs 12.60 crore from 100 days work and Rs 11.39 crore from the departmental budget. In the current financial year, the allocation is Rs 11.74 crore for the combined scheme and Rs 2.21 crore from the departmental budget. With the money available under the scheme, pisciculture will be carried out in water bodies that have been renovated, along with production of fish seeds, renovation of the ghats and training to those involved. A place to dry fish will also be constructed. To take an example, a few hundred families are associated with the project in Onda block in Bankura. Similar projects are been implemented in Chakdah block in Nadia and Dhaniakhali in Hooghly district. The beneficiaries are digging up small tanks in their houses to grow Magur fish. For preservation and sale, a state-of-the-art centre has been constructed at Onda. Self Help Groups (SHG) and people from economically challenged background are being involved in the project. In the coastal areas, space has been created to dry fish.

A survey has revealed that nearly 50 varieties of fishes have become near-extinct. Fishes like Sarpunti, Khaira, Kanklesh, Techokha, Phului and Lata have become nearly extinct. These fishes are very tasty and full of protein. The reasons for them becoming extinct are indifference to renovate the water bodies and lack of initiative to improve pisciculture. Senior officials of the Panchayats and Rural Development department feel that within the next few years, all these near-extinct varieties will once again be available in the market, thanks to proper planning.

### **West Bengal: Shrinking Sagar Island struggles to stay afloat**

<http://indiaclimatedialogue.net/2017/12/24/shrinking-sagar-island-struggles-stay-afloat-2/>

"The water rushed in at night, recalls Madan Mohan Pal of Hendalketki in Sagar Island. "By the morning, the entire village was under water. When the flood receded, the land was so saline that we could grow nothing for the next two years. Although Pal has harvested a good paddy crop this January, memory of the sudden tidal surge remains fresh. An unpredicted high tide broke the embankments of Muriganga River in the night of July 12, 2014, and swept through 14 villages spread over 30 sq. km. The damage was extensive in the eastern part of the island. It disrupted life for about 25,000 people. More than 4,000 houses were destroyed and some 500 hectares of cropland turned saline. The sea hasn't really retreated from some of the villages since then. Object lesson Sagar Island is arguably an object lesson on how people are coping with a rising sea. Considered sacred by Hindus because it sits at the confluence of the Ganga and the Bay of

Bengal, this large island of 160,000 people is buffeted by the worst effects of climate change coastal erosion, rising sea levels, unpredictable tidal surges, land salinity and more violent cyclonic storms.

There has been an increase in the intensity of cyclones making landfall in the Sundarbans between 1951 and 2010, recent research suggests. Such an increase in intensity may be attributed to an increase in sea surface temperature. Cyclone Aila in May 2009 left more than a million people homeless and killed 339 people across India and Bangladesh. Sagar is part of the Sundarbans, the world's largest delta and contiguous mangrove forests that straddle Bangladesh and India. The Sundarbans have an archipelago of 102 islands, of which 54 are inhabited by more than four million people. Some of these islands, such as Bedford, Lohachara, Kabasgadi and Suparibhanga have already disappeared. Other like Ghoramara and Mousuni will soon be lost, swallowed up by rising sea. Tens of thousands of people who live in the Sundarbans have lost their homes. Dramatic tides The tides in the Sundarbans are so dramatic that about a third of the land disappears and reappears every day. It has been happening for centuries but the changes have become more extreme in the past few decades. In this delta of Ganga, Brahmaputra and Meghna (GBM) rivers, the sea is rising more dramatically than in other parts of the world, latest research shows. Known as the biggest carbon sink in South Asia, Sundarbans is recognised as a world heritage site.

“It is established by the world scientific community that the GBM delta has become increasingly vulnerable to the impact of climate change. The higher rates of rise of sea surface temperature, delayed and irregular monsoon, high rate (more than 8 mm every year) of sea level rise are important evidences, says Sugata Hazra, Director of the School of Oceanographic Studies in Jadavpur University in Kolkata. “We are continuously losing land due to erosion from the estuarine islands like Sagar, Jambudwip, Ghoramara, Mousuni, Bhangaduani, Dalhousie, etc. at the sea-facing front. Even a light easterly breeze during high tide often inundates coastal areas of islands with saline water, breaking or overtopping embankments. In recent decades, Sagar Island has lost 30 sq. km of land, according to an estimate by the Sundarbans Development Board. The 225 sq. km island is also home to more than 25,000 refugees from other islands. Parts of the island are three metres below sea level. Clay embankments are built around low-lying areas, which breach every once in a while due to constant tidal action and indiscriminate clearing of mangroves. About 10,000 families live on the fringes of water.

Threatened livelihoods “The sea and fishing have become more dangerous nowadays, says Abdar Mullick of Gangasagar village on the southern, sea-facing edge of the island. “Unseasonal and sudden storms hurt fishermen and their catch, particularly those who fish in small boats. Earning a livelihood is becoming increasingly difficult due to hostile weather and depleted fish stocks in the sea, says Mullick, who is a leader of the local fishermen's association. “Most young boys are not interested in fishing, he says. “They want out. In Sagar, a vast majority of the people earn a livelihood from agriculture and fishing, and extreme weather events are threatening both

occupations, leading to an increase in migration by the youth. But not everybody is giving up. Faced with a hostile climate, they are coping as best they can. For farmers, one way to tackle increased salinity in the soil is to plant native varieties of salt-resistant rice.

“There are many native varieties of rice that can grow despite increased salinity in the soil, says Amales Mishra, Secretary of Paribesh Unnayan Parishad (PUPA). The non-governmental organisation has been promoting the use of salt-resistant varieties of paddy in Sagar Island. “The response has been encouraging, says Saheba Khatun, a resident of Phulbari village who works for PUPA. “Since the yields are good, the acreage under salt-resistant varieties is steadily rising. For fishermen, it is mostly a story of retreat. Higher tides have forced them to move their fish-drying fields inland, says Mullick. Most of the fish caught at sea around Sagar is sun-dried on the beaches before being shipped out in small packets. “This constant shift to higher ground is not sustainable. How long can we do that? asks a despondent Mullick. These efforts at mitigation and adaptation are expected to have only minimal effects in the long term, scientists and administrators say.

The trend of an increasingly aggressive sea and faster coastal erosion is expected to continue in the whole of Sundarbans, which includes Sagar Island. “The delta with reduced sediment supply due to anthropogenic reasons is presently unable to cope with the accelerated rise of sea level, says Hazra. “The same trend will follow and increase, particularly after 2050, as suggested by our recently published modelling data on Bangladesh. “There has been around 250 sq. km land loss from southern sea-facing islands over the last 45 years, says Hazra. “Sagar will be considerably diminished and non-habitable partially, unless nurtured by the re-deposition of dredging dumps. Some of the smaller islands will not be so fortunate. They will simply be “eroded off, he says. Pal may have saved his livelihood for a while by adapting farming practices to the shifts in natural conditions, but for how long? “The sea wants to come in all the time. Every year, the tidal waves become more unpredictable, he says. “We have made nature very angry.

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"There are many native varieties of rice that can grow despite increased salinity in the soil, says Amales Mishra, Secretary of Paribesh Unnayan Parishad (PUPA). The non-governmental organisation has been promoting the use of salt-resistant varieties of paddy in Sagar Island. "The response has been encouraging, says Saheba Khatun, a resident of Phulbari village who works for PUPA. "Since the yields are good, the acreage under salt-resistant varieties is steadily rising. For fishermen, it is mostly a story of retreat. Higher tides have forced them to move their fish-drying fields inland, says Mullick. Most of the fish caught at sea around Sagar is sun-dried on the beaches before being shipped out in small packets. "This constant shift to higher ground is not sustainable. How long can we do that? asks a despondent Mullick. These efforts at mitigation and adaptation are expected to have only minimal effects in the long term, scientists and administrators say. The trend of an increasingly aggressive sea and faster coastal erosion is expected to continue in the whole of Sundarbans, which includes Sagar Island. "The delta with reduced sediment supply due to anthropogenic reasons is presently unable to cope with the accelerated rise of sea level, says Hazra. "The same trend will follow and increase, particularly after 2050, as suggested by our recently published modelling data on Bangladesh. "There has been around 250 sq. km land loss from southern sea-facing islands over the last 45 years, says Hazra. "Sagar will be considerably diminished and non-habitable partially, unless nurtured by the re-deposition of dredging dumps. Some of the smaller islands will not be so fortunate. They will simply be "eroded off, he says. Pal may have saved his livelihood for a while by adapting farming practices to the shifts in natural conditions, but for how long? "The sea wants to come in all the time. Every year, the tidal waves become more unpredictable, he says. "We have made nature very angry.

### **West Bengal: Unjust and Unlawful Deprivations**

"Sundarban, the only tiger inhabited mangrove forest on the planet and a world heritage site, has been a land of unjust and unlawful deprivation, harassment and torture of the forest dependent people, especially the fishers. Abuses, physical assaults, confiscation of boats, nets, permits and licenses without any seizure memo, imposition of hefty fines without showing justified cause - ever since the imposition of tiger reserve Sundarban has been turned into a fiefdom of forest officers. The forest dependent communities of Sundarban have been turned into trespassers in their own land. This situation has been continuing even after the passage of the Forest Dwellers' Rights Act in the parliament of India in 2006. Dakshinbanga Matsyajibi Forum (DMF), as a trade union of small scale fishers in Sundarban, has been deeply involved

with the struggle of fishing communities and other forest dependent people to defend their livelihood and human rights.

The struggle has been a long drawn one with its ups and downs. On a number of occasions the forest department had to back off in the face of united mass movement of fishing communities. But then, in a short time, the forest department resumed its misdeeds. As such it has become increasingly evident that any permanent stop to the heinous acts of the forest department and its staff would require strict and unambiguous policy decisions with rigorous community based implementation. Blatant and unabated violation of basic human rights and of forest dwellers' rights enshrined respectively in our constitution and Forest Dwellers' Rights Act called for an all round strategy to take on the violators. DMF, in collaboration with DISHA and ActionAid convened a workshop with the participation of ICAN, AIFFRS and MASUM. Besides DMF members and leaders working in Sundarban and some concerned citizens, respected social workers Meher Engineer and Samar Bagchi participated in the workshop.

The workshop was attended by activists from Jharkhand, Odisha, Chattisgar, Rajasthan and Delhi besides West Bengal. Sasanka Dev, Secretary DISHA, welcomed the participants. He mentioned DISHA's involvement with the struggle for livelihood rights of forest dwellers in Sundarban, especially with the struggles of the fishing communities. He stressed on the need to have a proper strategy and concerted effort. A presidium comprising of Sasanka Dev, Samar Basu Mallick and Soumen Ray was constituted to conduct the workshop.

The workshop started after a brief self-introduction by the participants. Pradip Chatterjee, President DMF, through a ppt presentation set the context of the workshop by mentioning a brief history of Sundarban with its geo-morphology, ecology, mangrove food chain and the present situation with fish stock and fishing. He laid bare the unjust and unlawful restrictions imposed on the livelihood of forest dependent people in Sundarban including the fishing communities. He concluded with a request to the participants to work out a proper strategy to take on the violators. It was followed by an open house discussion where both activists and experts exchanged their views regarding the situation in Sundarban and placed their opinions and suggestions before the house. Dipak Dholakia, member ICAN, from Delhi, stressed on the rights of forest dependent people of Sundarban and its linkages with nature and natural resources. He mentioned the need to have right strategy, right organisation and right support. He also mentioned the need of getting support from non-fishing or non forest dependent communities.

Role of people's organization and need to carry on continuous struggle were highlighted in his deliberations. Viren Lobo, Convener, ICAN Forest Sub-group raised the question of Gram Sabha's role in FRA implementation. He said that since fishers do not live inside mangrove forest and also since in the villages outside the forest their number is too little compared to other inhabitants who are not dependent on the forest, the strategy should be to convene forest users' gram sabha to decide on the claims.. Tusher Das, member, Community Forest Rights Learning

and Advocacy, spoke on Community Rights of the forest dependent people. Starting from FRA and Wild Life Protection Amendment Act 2006, he mentioned points of the Acts and need of implementation of these acts in Sundarban.

Describing the people's role through Gram Savas on implementation of their rights on forests in Garchirali in Maharashtra, Niyamgiri in Odisha and Maldari (pastoral community) in Kutch in Gujarat he emphasised the role of the community.. Fe stated that the changes in Prevention of Atrocities Act have been made particularly in the interest of the tribal people and that the forest rights had been included in the purview of this Act. He also mentioned that Joint Forest Management is not applicable where Community Rights were demanded and on the process of implementation. Biplab Mukherjee from MASUM stressed the need to address human rights violations in Sundarban by the forest department. He mentioned that MASUM is eager to help in the process. Xavier Kujur, member, Jharkhand Jungle Bachao Andolan (JBA), Advocate Atindra from Chhattisgarh, Biplab Mukherjee, Secretary, MASUM, Jayanta Basu, journalist from Kolkata, Ms. Arati-Kumar Rao, freelance journalist from Bangaluru, Karnataka participated in the interactions. Advocate Santanu Chacraborty from Kolkata, Ms. Surjamani from JBA, Jharkhand, Ambia Hossein from Sundarban and Shyamalendu from DISHA, commented on the issue. In the "Way Forward Session Sasanka Dev, Jharna Acharya, Sanjay Basu Mallick, Viren Lobo, Tushar, Xavier, Dipak, Govinda Das, Milan Das, Soumen and Pradip spoke and the house planned future actions on the following issues - Forest Rights issues: Denial of forest rights in Sundarban should be given wider exposure among the civil society. Central government should be moved on this.

Specific steps should be taken at the ground level to submit claims of the forest dwellers including the fishers and the matter should be pursued in earnest. It is pertinent to build up strong movement of the fishing communities (who constitute large majority of forest dwellers) to push their claims forward. Human Rights issues: Violation of human rights in Sundarban by the forest department staff should be given wider exposure. Awareness programmes on human rights and training sessions on addressing human rights issues should be undertaken and planned. BLC issues: Though the recent arbitrary order of the forest department on BLCs has been suspended in the face of mass resistance, the issue should be pursued relentlessly and if needed legal action should be taken. Legal issues: Both Forest Rights and Human Rights issues need to be addressed on legal forum. Appropriate actions are to be decided through furWest bengal: Unjust and Unlawful Deprivations ther consultations.

National Network to take forward forest rights in Sundarban: AIFFRS, through its network, may help in projecting the issue on national plane. There is a need to build up networks of forest dwellers of tiger reserves and mangrove forests. Next day the activists visited Sundarban and went into the forest on boat. Discussion on specific strategy to address the denial of rights of forest dwellers in Sundarban was continued on the boat and some decisions on the same were taken.

## **West Bengal: Plan to revive waterbodies**

<https://www.telegraphindia.com/states/west-bengal/plan-to-revive-waterbodies-194371>

"The state fisheries department has decided to clean and restore over 500 waterbodies across north Bengal to encourage pisciculture. Senior officials of the department said they would indulge self-help groups, people from different Scheduled Tribes and others to start fish farming in the ponds, swamps and rivulets. "Our department has taken up a plan to increase fish production in the state as per instructions from the chief minister. We want the amount of fish imported from other states to be reduced. That is why it has been decided that we will reclaim over 500 waterbodies in north Bengal, which are in bad shape, for fish rearing," said R.F. Lepcha, the additional director of fisheries (north Bengal).

"As a part of the plan, the department has recently created the additional director's post for the region and posted me," Lepcha said. He would be posted in Siliguri and will monitor all eight districts of north Bengal. Earlier, a deputy director was in charge of the region. The department, he said, has already prepared a list of the waterbodies to be revived. "We will start the task of cleaning the waterbodies from this month. Initially, around 15 such waterbodies would be reclaimed," the official added. Among the waterbodies are the ones built by the royals of Cooch Behar in different parts of the district. The species which would be reared include "pabda" (Indian catfish), "rui" (rohu), "katla" (Indian carp), "telapia" (Indian Tilapia) and "chital" (Clown Knifefish).

## **West Bengal: Lift building limits in fragile wetlands**

<http://www.hindustantimes.com/kolkata/west-bengal-may-lift-building-limits-in-fragile-wetlands/story-8SHhaeNXHTPEsIOPKqIt9N.html>

"The West Bengal government has proposed lifting building and land conversion restrictions in a section of the 12,500 hectares of East Kolkata Wetlands (EKW), angering environmentalists who say the move will kill the world's largest organic sewage management system and choke Kolkata. A document prepared by the East Kolkata Wetlands Management Authority (EKWMA) under the department of environment wants to divide EKW into four zones, the last of which is proposed to have no special regulation. Currently, conversion of wetland is banned and people who live on the EKW a patchwork of sewage canals, shallow fishery ponds, and agriculture land must seek government permission even for building culverts or new farms.

"The management plan should identify areas for creation of different management zones within the wetlands such as a) no development zone, where no changes/development shall be permitted, b) regulated development zone, c) limited change zone/wise use zone, d) "No importance to wetlands zone, where normal regulations and not special wetland regulations may be applicable, reads a paragraph under the sub-head 'scope of work' of the document titled 'Tender for

selection of agencies for preparation of management plan'. HT has a copy of the document. The draft tender document seeking 'expression of interest' will have to be approved by a six-member steering committee comprising four state government officials and two environmentalists. "The draft document is not yet final. Views of experts from different disciplines will be considered before finalising the document, said Sandipan Mukherjee, chief technical officer of EKWMA and member-secretary of the steering committee.

He said that the management plan was envisaged to reduce problems faced by the 130,000 residents of EKW who cannot even expand their existing houses. But environmental experts say the decision will harm the wetland already facing threats from encroachment and illegal construction. "There cannot be any area of 'no importance to wetlands' in EKW. It sounds like the government aims at sacrificing them for urbanisation, said Bonani Kakkar of NGO People United for Better Living In Calcutta. It was their petition in the Calcutta high court in 1992 that resulted in the ban on land conversion and special regulations. Dhruva Dasgupta of Society for Creative Opportunities and Participatory Ecosystems (SCOPE), an NGO, pointed out that Kolkata, which houses a population of 14 million, had run out of space to expand on its northern and southern fringes, and with the west blocked by the river Hoogly, the east was the only direction to grow. The government denied the allegations and pointed out that the document was still not final.

"The government is committed to protecting the wetlands, said Mukherjee. Two months ago, state environment minister Sovan Chatterjee, also the housing minister and Kolkata mayor, proposed a flyover over the wetlands. The government approached Asian Development Bank for the project but was turned down. Repeated calls to Chatterjee over three days went unanswered. Kolkata generates more than 750 million litres of waste water and sewage daily but the city's core area has no sewage treatment plant. Instead, an intricate network of wetlands managed by farmers and fisher folk receives the sewage, and with help from sunshine and oxygen, breaks it down to produce food for fish, which is then sold back to the city. This unique ecosystem also produces a third of the city's fish requirements. "EKW is Kolkata's biggest ecological asset, said environmentalist Dhruvajyoti Ghosh.

In 1992, the HC banned conversion of water bodies and agricultural land across the EKW. In 2002, a Geneva-based international convention, the Ramsar Convention on Wetlands, declared the EKW 'a wetland of global importance' and cited it as a model for reuse of water. But problems began soon after. No management plan was put in place, and in the next decade, significant chunks of the area were lost to illegal construction and encroachment, said Aresh Sengupta of Kolkata Commons Centre for Inter-disciplinary Research and Analytics (CIRA). In the absence of official surveys, gauging the extent of encroachment is difficult. A 2016 survey conducted by SCOPE at Bhagwanpur, one of the 32 mouzas, the local word for settlement, revealed water cover reduced from 88% in 2002 to 19% in 2016, while an Indian Council for

Social Science Research in 2014 revealed number of fishery ponds decreased from 264 in 2002 to 202 in 2014.

Another unique feature of EKW is the sheer number of people who live on it, estimated by activists to be around 500,000. The last official survey in 2002 put the number at 130,000. There is no official figure on the construction activity but residents admit that hutments and hovels have mushroomed in recent years anywhere between 2,000 and 5,000 units. "There are innumerable instances of police rushing in to stop expansion or modification of existing houses, said Pulak Biswas, a resident of Diyara village. Records show EKWMA served four notices in June 2017, asking the recipients to restore the land within a month. None of those sites were restored till December 12. Mukherjee said the agency has no infrastructure of its own to restore land to its original state. "The restrictions imposed on the wetlands in 1992 did not consider the realistic needs of the original inhabitants...the rules need to be relaxed for them, as these local residents are an integral part of the ecosystem, said Dhrubajyoti Ghosh. "Instead of measuring the encroachment and compensating it, if these areas are dropped from the map altogether, this will not only legitimise illegal construction and encroachments but also set a bad precedent. It will encourage the real estate lobby to be more reckless, said Sengupta.

### **West Bengal: Govt's fish app to be launched on Dec 15**

<https://news.webindia123.com/news/articles/india/20171213/3232507.html>

"On the first day of the three-day Fish Festival at Nalban Food Park in in the city on December 15, the State Fisheries Development Corporation (SFDC) will launch a fish app through which customers will be able to buy fish and fish items. The government aims, through the mobile app, to make fish from Bengal available easily across the country as well as abroad, a senior official of the SFDC here today said. The aim is in sync with Chief Minister Mamata Banerjee's aim to make the brands of the government achieve global status, under the umbrella brand Biswa Bangla, he said. ""So far mobile apps have been very popular in private transportation sector , but this is the first time a government organisation has taken the initiative to launch a food app to sell items to be delivered directly to the consumer's home,"" the official added. The SFDC has selected 22 varieties of fish, seven varieties of dried fish (shuntki maach), fish pickle and a few other items to be sold through the app. Initially, the products will be available in the areas of Salt Lake, Lake Town, Kestopur, Baguihati and Kankurgachi. The fish will be sold in packets of 250 g, 500 g and 1 kg. By next year, according to SFDC officials, the items will be sold throughout the state, country and even abroad.

### **Odisha: Depression alert: Heavy rains expected to hit Odisha, West Bengal today**

<http://www.timesnownews.com/india/article/depression-alert-heavy-rains-to-hit-more-than-10-odisha-districts-west-bengal-coastal-areas-today/141928>

"It has come to light that more than 10 districts of Odisha and the coastal areas of Gangetic West Bengal are expected to get heavy rainfall with strong winds starting today, due to a depression over the Bay of Bengal. On Thursday, the depression over the southeast Bay of Bengal and its neighbourhood moved northwards at a speed of about 35 kmph in the past six hours, several news agencies reported. The depression is centered about 870 km southeast of Gopalpur, the meteorological centre said. The districts of East Midnapore, West Midnapore, South 24 Parganas, North 24 Parganas and Howrah are likely to receive heavy rain tomorrow, Regional met director G K Das said. "Moderate rain bordering on the higher side is likely to occur in Kolkata tomorrow," Das said. Moderate rain may occur in the city on Saturday as well as in the coastal districts, he said. In addition, the depression is likely to move north-northwestwards and reach north Andhra Pradesh and south Odisha coasts around December 9. It is likely to intensify in the next 24 hours. There is, however, a probability that the depression will weaken when it reaches near north Andhra Pradesh and south Odisha coasts. Under its impact rain or thundershower is likely to occur at some places in coastal districts and Koraput, Gajapati and Malkangiri districts by tomorrow. Widespread rain is expected in coastal districts and many places in interior districts till December 10, the director of local met office, S C Sahu said. Thereafter, heavy rainfall is likely to lash some places in Gajapati, Ganjam, Rayagada, Khorda, Puri, Jagatsinghpur, Kendrapara, Cuttack, Malkangiri and Koraput districts in the subsequent 48 hours, he said. The met office advised hoisting of Distant Cautionary Signal Number One (DC-I) at Paradip and Gopalpur Ports in Odisha. Squally winds with a speed of 40 to 50 kmph and gusting up to 60 kmph is likely to prevail along and off Odisha coasts till December 10. Sea condition would be rough to very rough along and off Odisha coasts and fishermen are advised not to venture into sea from December 10, it added.

### **West Bengal: Pvt players' contribution sought to meet annual fish demand**

[http://www.business-standard.com/article/pti-stories/pvt-players-contribution-sought-to-meet-annual-fish-demand-117120501186\\_1.html](http://www.business-standard.com/article/pti-stories/pvt-players-contribution-sought-to-meet-annual-fish-demand-117120501186_1.html)

"Fisheries department today sought contribution from private players to meet the projected annual demand of 20 lakh metric tonnes of fish by 2019-20. The current annual demand of close to 17.8 lakh metric tonnes is set to reach 20 lakh metric tonnes by 2019-20, Department of Fisheries Secretary Dr Ravi Inder Singh said at a discussion on 'Agri-business opportunities in West Bengal' organised by Merchants' Chamber of Commerce & Industry. "This is an area where private players can come in as well as the fishermen's cooperatives and fisheries. Government is ready to cooperate," Singh said. He said that a fishery hub is already in place at Moyna where the yield is much more than average. "We wish there could be more such projects," he said. He said last year more than 1 lakh metric tonnes fish was exported and expressed hope that the export potential of 3 lakh MT can be achieved. While India is the second largest vegetable producer in the world, West Bengal is the second largest vegetable producer, Secretary, Food Processing, Industries and Horticulture, Nandini Chakravorty said in

her address. ""We have prepared an agri-horticulture blueprint for state where we have identified the gaps in infrastructure and in this sector, we invite private partnership, private investments on their own,"" she said.

### **West Bengal: Fish app to be launched on 15 Dec**

<http://www.thestatesman.com/bengal/fish-app-launched-15-dec-1502529327.html>

"Buoyed after the huge response at the World Food India-17 at New Delhi, the West Bengal State Fisheries Development Corporation (WBSFDC) is set to launch a fish app through which customers will be able to buy fish and fish items. "The fish app will be launched on the first day(15 December) of the three- day Fish Festival at Nalban Food Park, managing director, West Bengal State Fisheries Development Corporation Mr Soumyajit Das said. "State chief minister Mamata Banerjee wants all her brands to become global as part of her Biswa Bangla dream and WBSFDC hopes that by 2018, fish and fish products of the state will be easily available through the mobile fish app all over the country and also abroad, Mr Das added. Talking to The Statesman, Mr Das said the Fish app will be a-first of its kind effort to reach the global audience which is in sync with the Biswa Bangla outlook of the West Bengal government. "So far mobile apps have been very popular in private transportation sector , but this is the first time a government organisation has taken the initiative to launch a food app to sell items to be delivered directly to the consumer's home, Mr Das said.

WBSFDC has selected 22 varieties of fish, seven varieties of dried fish (sutki maach), fish pickle etc to be sold through this mobile fish app. Initially, after its launch the products will be available at Salt Lake, Lake Town, Kestopur, Baguihati, Kankurgachi and will be sent from the counters of WBSFDC situated at Nalban, Eco Park, Bikash Bhawan, New Town, Salt Lake. The size of the packets will be 250, 500 grams and one kilograms and fishes likerohu, katla, hilsa, tilapia, mackerel, pomfret, prawns will be available. By next year the items will be sold throughout the state, country and even abroad. Fish outlets are coming up very soon in cities like Bengaluru, New Delhi, Jamshedpur, Ranchi, Jodhpur and Chandigarh. "Today we have tied up with a private retail outlet for selling our products in Mumbai, Hyderabad, Pune and Bengaluru, Soumyajit Das added. "The varieties of fishes of Bengal are in high demand among not only the non-resident Bengalis but also other people and foreigners. "Our target is to set footprints in the global market, "Mr Das added.

### **West Bengal: Fish from Bengal on high international demand**

<http://www.uniindia.com/fish-from-bengal-on-high-international-demand/other/news/1048414.html>

"Fish from Bengal is gradually acquiring high demand, both in India and internationally. This became evident at the recent World Food India international exhibition at New Delhi too,

where various deals were clinched by State Government organisations like State Fisheries Development Corporation (SFDC) and others. Government organisations of different states are also setting up agreements with SFDC for acquiring expertise in cultivating fishes in demand in those states, as well as buying hatchlings from SFDC. Internationally, fish export from Bengal is making a lot of progress. There is high demand for frozen and sun-dried fish from Bengal in Italy. Shrimps like black tiger shrimp, monodon and vannamei are in high demand in China. SFDC is also opening restaurants in other states. One has already been opened in Noida. Preparations for opening in other cities too, like Delhi are in progress. To make fish from Bengal fit to international standards, SFDC is acquiring expertise from other countries. For example, Russia has expressed eagerness in this respect. The corporation has recently opened a few model fish processing units in Purba Medinipur district.

### **India's West Bengal government to set fish tourism circuit**

<https://economictimes.indiatimes.com/news/politics-and-nation/west-bengal-government-to-set-fish-tourism-circuit/articleshow/61640427.cms>

"The government of the Indian state of West Bengal is firming up plans to set up a fish tourism circuit to attract country's fish-loving communities. The State Fisheries Development Corporation (SFDC) is preparing the blueprint for the tourism circuit. The circuit will centre around the hotels run by SFDC in places like Digha, Udaypur, Henry Island, Bishnupur, Jamunadighi and Siliguri. A typical tour will consist of a two days-one night package, with fish as the focal theme – be it food or sightseeing. And fish dishes to be served will comprise the traditional favourites of Bengalis as well as newly-introduced varieties in the state like chanos (also called milkfish), pompano, cobia (all marine fishes) and vannamei (a type of shrimp). The fish tourism circuit will begin functioning with tours to Digha.

### **West Bengal: Mulls fish farming in cages**

[http://www.business-standard.com/article/pti-stories/bengal-mulls-fish-farming-in-cages-117111300173\\_1.html](http://www.business-standard.com/article/pti-stories/bengal-mulls-fish-farming-in-cages-117111300173_1.html)

"The West Bengal Fisheries department has decided to initiate farming of fishes in cages across the state to meet the burgeoning local demand and also to cut down dependence on neighbouring states for supplies, a senior official has said. ""We have decided to initiate the fish cage culture system or cage aquaculture across West Bengal,"" the official of the state Fisheries department told PTI. For the purpose, brackish water bodies owned by the State Fisheries Development Corporation (SFDC) as well as by fishery cooperatives and private owners would be used, the official said. ""Similar fish cage culture has been done by private organisations, but on much smaller scales. We are planning to come up with this on a much bigger scale,"" he said, Cage aquaculture is a fish farming procedure on a floating frame. It involves growing of fishes in

existing water resources while being enclosed in a net cage which allows free flow of water. They can be installed in reservoirs, rivers, lakes or sea.

A catwalk and handrail is also built around the floating cages. Circular cages of different diameter, ranging from 2m to 15m, designed for cage culture would be engaged for the purpose where varieties like milkfish, mullet, pearl spot, shellfishes such as shrimps, crabs and lobsters are on the list, he added. "These days cage culture is receiving attention from both researchers and commercial producers. Several small and limited resource farmers are looking forward to it as alternatives to traditional agricultural crops because aquaculture appears to be a rapidly expanding industry. We are hopeful that this will be a hit among small farmers," he said. The official added that cage aquaculture can play a significant role in increasing the overall fish production in West Bengal. Since, the investment is low, this farming method is ideal for small scale fishermen and farmers as an alternative source of income. As per the initial plans of the Fisheries department, 80 cages would be employed for the cultivation. "Initially there will be 80 cages used for the cultivation of fishes. Out of these, 18 cages will be used by the SFDC and the rest will be distributed among those in the districts of East Midnapore, both North and South 24 Parganas who will be employed for the cage culture of fishes," the official said. Depending on the success of the venture in commercial terms, the Fisheries department has plans to start similar activities in freshwater bodies and in marine areas. With 2.10 lakh hectares, West Bengal is considered to have one of the country's largest impounded brackish water area after Odisha, Gujarat and Kerala.

### **West Bengal: Must do more to protect the livelihood of hilsa fishermen**

<http://www.thehindubusinessline.com/news/national/copyofbl04ndtvjhilsabl/article9944157.ece>

"Efforts initiated by the West Bengal government to conserve the prized hilsa fish have not been as successful as those taken up by Bangladesh, according to experts. Main challenge Experts from the non-governmental International Water Association (IWA), who studied hilsa conversation measures in West Bengal and Bangladesh, however, said the main challenge is to strike a balance between conservation and protecting the livelihoods of 5-million traditional fisherfolk who depend on hilsa fishing. Hilsa catch has been declining over the last 30 years in both countries due to overfishing, siltation of river beds, reduced water flow and fragmentation of rivers during dry months.

A few years ago, the Bangladesh government took up a slew of measures, including the banning of hilsa fishing during the spawning and breeding seasons. Its regulatory steps also included identifying the breeding nurseries of hilsa, which were then declared as temporary 'no-go-zone' sanctuaries for fisherfolk. Recently, their conservation efforts even moved from regulatory regimes to an approach that combines regulations with economic incentives to fishermen, said Sushmita Mandal of IWA, who was among those carried out the study. Poor outcome Though

the West Bengal fisheries department also subsequently amended their respective inland and marine fisheries laws to implement a ban on hilsa fishing during the spawning and breeding season, the implementation was patchy and hence produced little results, she said. An anadromous fish that spends its life cycle in rivers, estuaries, coastal areas and the sea, hilsa is one of the most-important fishes in the Bengal Delta.

While the riverine hilsa is more savoured, the predominant part of the landings, both in West Bengal and Bangladesh, come from the sea. One of the major problems of the present day conservation management is that it doesn't take into consideration the livelihood of traditional hilsa fisherfolk. "This is true for both WB as well as Bangladesh, even though the neighbouring country may be slightly better in dealing with the issues, said Mandal. The livelihood of fishermen and conservation must go hand-in-hand if it has to work. In other words, hilsa conservation needs to go beyond the immediate ecological context, she said.

### **West Bengal: Govt to develop roadmap for inland fisheries**

<https://news.webindia123.com/news/articles/India/20171106/3214795.html>

"The West Bengal Fisheries Department is going to prepare a roadmap for the better development of inland fisheries in the state and develop a comprehensive strategy to protect the interest of small-scale fisherfolk across the state. An advisory committee has been appointed to prepare the roadmap. The roadmap would focus on the utilisation of potentialities of inland fisheries in the state, augment the production of fishes and sustainably use the fish resources. The guideline will also focus on the protection of waterbodies and their catchment areas. This roadmap by the State Government will help the Central Government to implement the National Policy on Inland Fisheries. A national-level meeting was conducted in Paschim Medinipur recently, after which the advisory committee was appointed. The state Fisheries department will also conduct awareness campaigns to check the water bodies and ponds from being polluted and encroached upon.

### **West Bengal: SFDC eyes World Food India to tap potential for investment in fisheries**

<http://www.millenniumpost.in/kolkata/sfdc-eyes-world-food-india-to-tap-potential-for-investment-in-fisheries-268847>

"The State Fisheries Development Corporation (SFDC) is eyeing the three-day World Food India at New Delhi to tap the potential for investment in the fisheries sector. Bengal has been selected as one of the focus states in World Food India which will be held from November 3 to 5. ""The Business session is scheduled to be held on November 4 where we will enter into a tie-up with Jharkhand government on aquaculture. They have shown interest in our prawn varieties like Golda, Bagda, Venami and are wanting to market two fish varieties Basa and Monosex Tilapia through Bengal,"" Soumyajit Das, Managing Director of SFDC who has been selected as the

nodal officer on the part of the state government for the Delhi event. The Basa variety of fish processed by SFDC has been in huge demand at more than a dozen restaurants and food delivery chains in the state. Apart from business tie-up with Jharkhand, there is possibility of another tie-up with Italy at the business session. As many as 121 countries are participating in the event. The stall at the food court that will be put by SFDC will be of international standard. As many as 22 types of frozen fish and ready to fry items of fish like fish fry, fish finger, fish chop including six variations of dried fish (popularly known as Sutki ) will also be part of the menu list. A good number of countries of the Middle-East, Australia and Japan have evinced interest in import of frozen fish from our state.

The business to business (B2B) and business to customer (B2C) will be utilised to tap the enormous business potential in this sector. "Two new snack items in the form of fish pickle and fish chanachur will be introduced during the event which will be gradually expanded to all our fish outlets in the state," Das added. The event at Vigyan Bhavan will be inaugurated by Prime Minister Narendra Modi on November 3, while the valedictory session on November 5 will be addressed by former President of India Pranab Mukherjee. Bengal will host an exhibition of processed food with the involvement of the state Agriculture department, Agri Marketing department, Food Processing & Horticulture department, Animal Husbandry and Fisheries department. SFDC has decided to tie-up with Bengali associations in the cities of Delhi, Mumbai, Bengaluru and Pune to set up 'All Fish' restaurants, that will serve both ready-to-eat fish preparations and frozen and dressed fish items for home takeaways.

### **West Bengal: Hilsa hurrah in north Bengal**

<https://www.telegraphindia.com/states/west-bengal/hilsa-hurrah-in-north-bengal-182527>

"For Hilsa lovers in north Bengal, the delicacy's distance from the river to the plate just got shorter. Hilsa, which was never found in rivers in sub-Himalayan Bengal, is filling up the fishermen's net in Alipurduar district - the rare catch being attributed to an abundance in the Brahmaputra. Over the past few week, Hilsa is being caught in the Mahananda and Ganga in Malda district. The fish has been netted even in the Kaljani, Dima and Gadadhar rivers, tributaries of the Brahmaputra. "All these rivers flow into the Brahmaputra in Bangladesh. This year, there has been an abundance of ilish in the Brahmaputra and so, shoals of the fish might have entered the tributaries and swum upstream," said Kiranlal Das, the deputy director of the fisheries department in Alipurduar. Fish retailers here said on Tuesday that a good quantity of hilsa had been caught in the past seven days.

"We had never heard of or seen hilsa in our rivers before. These days, at least 50kg of hilsa is being caught from the rivers a day," said a fish-seller in Alipurduar. Subhashish Kundu, an Alipurduar resident who lives close to the Kaljani river, said: "After I learnt that hilsa is being caught in the Kaljani, I visited the river bank a couple of times and found the fish squirming in the net. It was a rare sight to see a live hilsa in Alipurduar." It was about a fortnight ago that

hilsa was caught from the Teesta at Tatipara, on the outskirts of Jalpaiguri. Officials of the district fisheries department confirmed that the fish caught was hilsa. "We have no earlier records of hilsa being found in the Teesta," an official said. The glut of the local hilsa has triggered a drop in prices in Alipurduar. Hilsa-lovers are making a beeline for the fish at Rs 300 a kg. "I have bought and tasted the hilsa caught from the rivers in our district. The fish is fresh and is being sold at Rs 300 a kilo, which is quite cheaper," said Ranjan Pal, an Alipurduar resident. Each fish caught in the Alipurduar rivers weighs around 500-700gm.

### **West Bengal: Hilsa worry for govt**

<https://www.telegraphindia.com/states/west-bengal/hilsa-worry-for-govt-181074>

"The fisheries department is in a quandary as fishermen have been indiscriminately catching Hilsa from the Ganga in Murshidabad, ignoring a ban on catching the fish between September 15 to October 24 because it is their spawning time. Fisheries officials in Behrampore said that fishermen are paying no heed to the notification that was publicised through distribution of leaflets and announcements on the riverbank over public address system. From next year the fisheries department will organise awareness camps for fishermen. But fisheries department officials said that Bangladesh enforces the ban on the other side of the border quite effectively where the restriction is in effect from October 1 to October 22. "As a result of effective implementation of the ban, there has been an increase in production of Hilsa in Bangladesh significantly," said an official. Officials pointed out that lack of awareness about the ban among the fishermen who cast their nets in the Ganga to catch Hilsa has led to catching of the fish during the spawning time. Hilsa is being indiscriminately caught in the Ganga at Farakka, Samserganj and Suti areas of the district. Assistant director of fisheries in Behrampore, Jayanta Kumar Pradhan, said,

"We have tried to make fishermen aware by distributing leaflets explaining the reasons behind the ban. Also, we have made announcements over public address system asking fishermen not to catch Hilsa between September 15 and October 25 as it is the period when the spawning takes place. However, as we are understaffed and the puja holidays came along, the fishermen took the opportunity and resorted to indiscriminate fishing." A fisherman of Farakka, Sipon Haldar, said that there has been a glut of Hilsa in the Ganga that has flowed in from Bangladesh. A fisherman is catching 20kg to 30kg of Hilsa per day and there are hundreds of us who are casting our nets daily to catch the fish." Asked about the Bengal government's ban on netting Hilsa between September 15 and October 24, fishermen said they were unaware about it. A fisherman Haider Ali said, "We are not aware of any such ban on Hilsa fishing during this period. We don't even want to know." A fisheries official said that most fishermen are unlettered and awareness camps should be held to speak to fishermen in the villages. Assistant director Pradhan said, "From next year we will intensify our campaign making fishermen aware of the ban."

## **West Bengal: Flood-Ravaged Islands of Sundarbans Need Women-Centric Interventions**

<https://thewire.in/189043/sundarbans-west-bengal-floods-women/>

"My land is gone. My house is gone. My husband is crippled. My sons are away. We have no crops, no firewood, says Manuara Bibi of Baliara village in Mousuni Island in the Sundarbans. "Our lives are meaningless. We have become beggars in our own land. Like many others on the island, Manuara Bibi has seen the river taking acres of land. After the floods took the last piece of her house, she waits for the water to subside, in a 6ft x 6ft stilt house, barely accommodating the six remaining members of her family. Her situation is not unique and applies to hundreds like her living on the 54 inhabited islands of the Indian Sundarbans. The geographical location of islands such as Mousuni, make the inhabitants more vulnerable due to floods and embankment erosion, compounded by institutional negligence and human interference. Even as the floods and erosions impact the impoverished inhabitants of the island, it is the women who bear consequences of the hazards the most.

Flooding and salinity ingress River bank erosion in Mousuni Island is occurring at a rate of 1.02 km per year, wreaking havoc and claiming several houses and farmlands. "Those three huts will be gone next year. We thought the river will take them this time, but by god's grace, they got saved, Kusum of Baliara tells VillageSquare.in, pointing at the three small dwellings on the edge of the bank. In Mousuni Island, salinity ingress has rendered agricultural land uncultivable for years. Tidal flooding that occurs twice a month makes it difficult for the salinity level to come down. Embankments, some of which have existed since colonial times, have weakened over the years. It is due to a combination of natural events like floods and erosion and anthropogenic factors such as lack of maintenance and deforestation. These weak, and in some cases, partially built embankments, prevent swift back-flow of the flood waters in some parts of the island, resulting in inundation for an extended period of time.

Men migrate, women remain In such a hostile environment, the men often migrate to seek employment. Our study of 60 households in three habitations of Mousuni Island found at least one male member in each of the households having migrated for work. The women are left behind to look after the children and the elderly. Cyclone Aila, which hit the island in 2009, resulted in loss of croplands and fishing boats, causing agriculture and culture fisheries take a severe blow. This compelled the men from this area to migrate to the gulf countries. This out-migration has resulted in rising security concerns for the women, leaving them physically and emotionally vulnerable. "Even his father had to go away. Last monsoon, I was alone when the water rushed in. I had nobody. I just stood in the water clutching my child, Mamani Maiti of Kusumtala tells VillageSquare.in. "In my island we never saw this. This scares me. She lives alone with her two-year-old son, after her husband left for Dubai last June. In order to support the family, the women in the islands look for work, including manual labour.

“There's not much work for us. I carried cement sacks last month, for a house construction in Poila Gheri. They were heavy and I got tired easily. But I didn't have a choice, Shikha Guin of Baliara, a widow and mother of two, tells VillageSquare.in. For a pot of water Salinity ingress has rendered the homestead ponds saline. For all domestic purposes, including water for their cattle, women in the island are now dependent on tube wells. During our study, we found that on an average, 300 people depend daily on a single tube well. While some families live in close proximity to a tube well, many women have to travel two to three km to get water, especially when the nearest tube well gets defunct. The women sometimes have to depend on tube wells in schools, off limits during school hours. They often have to queue in the wee hours of the morning to fill up enough vessels for the day, making about six trips on an average. The situation worsens during monsoons when they have to tread in ankle-deep floodwater to reach a tube well. Often the women wait for low tide, so as to move easily.

Speaking to VillageSquare.in, Uma Soren from Baliara remarks, “In the monsoons, we queue for half-an-hour, fill heavy vessels and walk back in the dirty water. Our skin itches. It's a task to keep from falling down. Sometimes the stored water gets over by early evening. With no lights, you can't be sure if you'll come back home alive. Life after loss The island has three flood shelters. Payel Samanta, whose family has been residing in one of them for three years after losing everything to the river, laments how she is ostracised by the others in the neighbourhood. “They say we have encroached on property that belongs to everyone. But where can we go? We have nothing left. Her husband is one of the few remaining in the island, with no means to migrate. Apart from the physical hardships, the angst that the women go through is aptly described by Rebaty Dolo from Kusumtala,

“We lost our boat last year. So now my husband tries to fish floating across the river on a big jar. When the water becomes turbulent, I lose sight of him. I feel scared for him, she tells VillageSquare.in. The fact that he has to catch fish risking his life describes the plight of those who have not been able to migrate for different reasons. Access to sanitation, health Lack of access to safe sanitation adds another element of risk for the women on the island. With the land not in their name, the women, particularly in women-headed households, it is difficult to get a toilet sanctioned. The ones who do have toilets, still prefer the outdoors. Because toilets without water for flushing is an added drudgery as the women have to make additional trips to fetch water. During monsoons, the toilets often get submerged for nearly four months, leaving the women with no option but to defecate in the open. All these dampen the construction and use of toilets. As Shiuli Pramanik from Baliara tells VillageSquare.in,

“What is the point of having a toilet? It goes under water when we need it the most, during the monsoons! Health facilities on the island, for flood-affected families in general and women in particular, remain deplorable. The primary health center (PHC) in the village is highly inadequate, with no electricity. In fact, Mousuni Island is yet to be electrified, one of the last such islands in the Sundarbans. The women are often unaware of hygienic menstrual practices.

“Cases of urinary tract infection are common, comments the head ASHA or Accredited Social Health Activist worker of the village PHC, “thus leading to increased chances of cervical cancers. A pregnant woman has to cross two rivers to reach the district hospital in Namkhana for delivery, often by herself, since her husband would be away making a living. “I am due end of this year. I am praying that my husband comes back before that. How will I manage on my own? asks 21-year-old Kajol, who is expecting her first child, with her husband in Dubai. With no access to LPG, the women depend on firewood and are exposed to greater threats from indoor carbon monoxide pollution. Privacy is indeed a luxury for the women in the island. During floods, nearly 10 persons are huddled together in a 6ft x 6ft floor space.

Need for interventions the discourse on the effect of floods tends to look at the affected population as a homogenous entity. The entire population is seen as flood-affected. But the everyday struggles faced by the women in Mousuni show that women are more vulnerable. It is of utmost importance that one undertakes a granular understanding of how floods and erosion affect the lives and livelihoods of women in flood-prone areas. Accordingly, interventions that would ameliorate the wretched conditions of the women in flood-affected areas need to be promoted. In Mousuni, interventions towards easy access to safe sanitation and drinking water source would go a long way in ameliorating the miseries faced by the women. Provision of sanitary pads coupled with behaviour change communication activities would make a significant dent in the gynecological morbidity faced by the women on the island. An increased number of flood houses with separate sanitation and bathing space for women would reduce the vulnerability that they currently face. Skill training for women in new activities like prawn culture and rural tourism could offer them an alternate livelihood.

### **West Bengal: Cyclone and sea surge devastated coastal areas of west Bengal**

"In last week Cyclone and Sea Surge have devastated coastal areas of West Bengal. Small scale fishers' huts and boats are worst hit. Thousands of fishers are facing loss of livelihood. They would immediately need tarpaulins in large quantity for shelter. Dakshinbanga Matsyajibi Forum appeals to all to donate generously. Please send in your donations immediately to: Dakshinbanga Matsyajibi Forum, A/c. No. 3330264999, Central Bank of India, IFSC Code: CBIN0280098, Lenin Sarani. Kolkata-700013

### **West Bengal: Starved for Hilsa? On the Narmada, Bharuch Barrage Bengalis' Bane**

<https://www.thequint.com/news/environment/starved-for-hilsa-on-the-narmada-bharuch-barrage-bengali-bane>

"Rs 1,600 for 1 kg hilsa. That's the going rate for ileesh (Bengali for hilsa) on an online portal that specialises in grocery in Kolkata. While Bengalis in India are known to relish their favourite hilsa, there has been a marked decline in the population of *Tenulosa ilisha* (scientific name) because of excessive fishing that pays little attention to conservation measures by respective

state governments. As hilsa becomes a luxury for fish eaters, especially Bengalis, a project in Gujarat will add to their fear of missing out on ileesh during Jamai Sashti (annual ceremony when varieties of fish are lavished on sons-in-law). The Bhadbhut barrage project in Gujarat's Bharuch district has resulted in outrage among thousands of fishermen living in areas downstream of Narmada, as they fear their sole source of income is in danger.

### **West Bengal: Sundarban fishers protest against new BLC Rules**

"In yet another show of their united strength the small and traditional fishers of Sundarban came out in thousands on 11th October 2017 to demonstrate their wrath against the Tiger Project authorities and compelled them to announce that the unjust and illegal order regarding cancellation and redistribution of 'boat license certificate' (BLCs) passed by the Department of Forest, Government of West Bengal, will not be implemented. The backdrop to this movement of the fishing communities of Sundarban was set by the more than three decades old history of torture and harassment perpetrated by the forest and tiger project officials on poor indigenous fishing communities since the imposition of Tiger Project in Sundarban. Tiger project occupied more than half of the total forest area of Indian Sundarban and declared it as 'Sundarban Tiger Reserve (STR)'.

The project declared more than half of this huge area as 'core' and stopped all livelihood activities, including fishing, in the area. The rest area was declared as 'buffer' and only 923 boats were given license (BLC) to fish in it. Sundarban Reserve Forest situated in the other (western) part the forest had about 3,700 boats with BLC. Both these numbers have been grossly inadequate in comparison with the number of fishers and fishing boats operating in respective areas. Dry wood and shell collection was totally stopped. Honey collection was restricted by permits and all collected honey was to be deposited with the forest department. All these were done without any consultation with the affected communities, let alone the question of taking their consent. This gave rise to a severe and permanent conflict between the forest department and the communities dependent on the forest for livelihood.

As the largest among the forest dependent communities the fishers have been bearing the brunt of the tortures and harassment and have also been at the fore front of the struggle. Physical assaults, abuses, confiscation of boats, nets, permits or BLCs without any seizure memo, clamping of heavy fines, taking away the best catches of fish and crab, spoiling of drinking water and food of the fishers – the unjust and illegal acts of forest department know no bound. In February this year the forest department came up with another design to further deprive the fishing communities of their rights. An order was issued to cancel old BLCs and re-issue those to genuine fishermen. A committee was formed with local MLAs, Panchayat Samity Presidents, Forest Department Officials, NGOs and one officer from the fisheries department.

This committee would be in charge of cancellation of old BLCs and distribution of new BLCs. The eligibility criteria for recipients of new BLCs were fixed as in the following – 1. Genuine

Fisherman; 2. Living in area adjacent to the forest; 3. Membership of Joint Forest Management Committee (JFMC); and 4. Recommendation from President of Panchayat Samity. This was too much for the fishing communities. The rights they had been enjoying and claiming as traditional fishermen were denied and proposed to be subjected to conditions that suited the forest department. How could their rights as fishermen be subjected to their being members of JFMC? Why recommendation of President of Panchayat Samity, who was a political person and would try to further his party political interest, be made mandatory? And last but not the least, who is going to identify whether a person is a genuine fisher or not? What right the forest department has got to determine this?

Led by Dakshinbanga Matsyajibi Forum a joint movement of Sundarban fishers was called by Sundarban Matsyajibi Joutha Sangram Committee and West Bengal United Fishermen Association. On 11th October 2017 around 2,000 fishers, majority of whom were women, gathered near the Tiger Project headquarters. The deputation to the Tiger Project headquarters was led by Pradip Chatterjee, President, Dakshinbanga Matsyajibi Forum, Gobinda Das, Secretary, Sundarban Matsyajibi Joutha Sangram Committee and Bimal Jana, Vice-President, West Bengal United Fishermen Association along with other leaders. The Deputy Field Director of STR received them. The Field Director was absent. It was reported that he was attending a training programme. The delegation of fish workers' leaders took exception of the absence of Field Director and asked the Deputy Field Director to note that the Field Director himself gave the appointment about one month later than the date requested by the fisher organisations and his absence was an example of the gross disregard of the fishing communities and their organisations.

Then the delegation asked the Deputy Field Director by what law of the country the forest officers and staffs are physically assaulting the fishers. They also asked him by what law of the country the forest department officers and staff confiscate boats, nets, BLCs and permits from fishers without issuing any seizure memo. The Deputy Field Director could not give any answer. He promised that the STR authority will caution its entire staff against physically assaulting any fisher. He also said that no government official can confiscate anything without giving a seizure memo and accepted that it was a malpractice of the forest officers.

Then the delegation asked who empowered the forest department to curtail the livelihood rights of the fishing communities and impose conditions like membership of JFMC and other ones for getting a BLC. To this the Deputy Field Director said that they have realised that the new order on cancellation and re-distribution of BLCs cannot be implemented. He announced before the delegation that the said order will not be implemented and Tiger Reserve authorities are sending it back to the forest department saying that it is not implementable. He also promised to look into the grievances of the fishing communities and asked the members of the delegation to inform him in the event of any such incidence.

The members of the delegation pointed out to the Deputy Field Director that while the forest department is almost exclusively bent on curbing the fishers' right to fish in the waters of Sundarban, they take least interest in conserving the forest. The delegation asked him what steps had been taken by the forest department against the illegal construction of tourist resorts coming up destroying mangroves and mudflats, or against the scores of fish ponds dug out on the river beds destroying and obstructing mangrove propagation, or how many references have been made by the forest department to the government of West Bengal to stop the pollution that flows into Sundarban from Kolkata and adjacent municipal and industrial areas through rivers and water channels. The Deputy Field Director was visibly uncomfortable and had no answer. The fishers were happy to learn that their struggle scored an immediate success and the order on BLC has been suspended. They also sensed that the forest officers are on the back foot now and the most important strategy is to keep up the pressure. They planned to continue with their demonstrations at all the forest range offices in Sundarban.

### **West Bengal: Poor Flood Planning Is Destroying Livelihoods In South Bengal**

[http://www.huffingtonpost.in/village-square/poor-flood-planning-is-destroying-livelihoods-in-south-bengal a 23212967/](http://www.huffingtonpost.in/village-square/poor-flood-planning-is-destroying-livelihoods-in-south-bengal-a-23212967/)

"Chaipet in Paschim Medinipur district of West Bengal lives up to its original Bengali name Chayapath, which means a shadowy lane. From Chaipet, the road to the broken Chandreshwar Khal (canal) becomes narrower and narrower before ending in a messy bog, the result of continuous rains and floods. Incessant rains had led to breach of riverbanks and flooding, Paschim Medinipur being one of the worst affected districts. The floods have affected more than 2.7 million people in 106 blocks of 14 districts of West Bengal this year. Breach of riverbanks after torrential rains and water released from overflowing reservoirs have flooded southern portions of West Bengal, leading to loss of livelihoods and complete disruption of life. After being inundated for more than a month, the villages around Chaipet are in a state of decrepitude.

From 26 July to 28 August, the villagers lived amidst a floating pool of filth. The waters have receded but the stench remains. Everything has been ruined homes, standing crops, fish, power poles save the villagers' amazing sense of humour. Five kilometres from Chaipat is the village of Benai, where more than a month after the floods, everything remains under water. "No, not everything," Preetikona corrects with cheerful resignation. "The waters have retreated from our homes," she tells VillageSquare.in.

"After a month." The state government opened 311 relief camps, though none are in evidence in this part of the land. "Maybe other areas are in greater need of relief," the residents say. Loss of livelihoods "Oshur er chul kintay gaylam (Went to buy hair for the demon), paid 18 % GST," grins the local clay idol maker from his wayside studio a shack with a plastic sheet on it. He is busy applying layers of clay on his straw frame, creating goddess Durga, whose festival is round the corner. The Silabati River running 30 ft below had swirled up in fury to wash away

everything his half-completed idols of Durga, her family and even the idol of the demon she slayed. He had bought adornments for the deity and a flowing mane for the demon before the Goods and Services Tax (GST) came into effect, as they were less expensive then.

All that he had bought and most of what he had made were lost to the floodwaters. He and his assistants managed to save a few frames by keeping them in the loft of his studio. Bengal's idol makers earn for the entire year during the festive season. This year there will be no earnings. "All that we will recover is the daily wage. There will be no profit to see us through the rest of the year," an idol maker tells VillageSquare.in. The floods were made worse because none of the sluice gates was functional for want of regular maintenance. The water that entered had no escape route. The local puja committees organise the Durga puja festivals with money raised from the local community.

This year they will spend a lot of money on flood relief and cut down on puja expenses, which means much fewer orders than usual for the idol makers. They might look for work on the fields as farm labourers only there are no fields to work in this year. As for the farmlands, not only the 1400 bighas (one acre equals 3 bighas) of lowland but even the 600 bighas of highland remain submerged. "There stood the paddy that would have fed us the next year," points out Rabindranath Manna wistfully. Manna owns around 2.5 bighas of land in the nearby Faridpur village. He could not save any of his crops.

"Not when the fields have been under water for a month; everything has gone," he says. Fortunately he works part-time as a hairdresser and may earn a bit. But most of the other villagers are landless farm labourers with no prospect of work. Bibekananda Bidyamandir, a school in Arit that has 1400 students, has just reopened after a two-month break. Sudipto Seth, a teacher of the school, tells VillageSquare.in that the ground floor of the school remained inundated for around a month. A part-time journalist, Seth, shows video clips of the state the school was in and of students and teachers coming by country boats to hoist the national flag on Independence Day. Cause of floods Following a depression leading to torrential rain and gusty winds, River Silabati was in spate.

Then the Damodar Valley Corporation (DVC) started releasing waters from its reservoirs in neighbouring Jharkhand. It had no option for its own reservoirs were bursting at the seams. Some 1,69,955 cusecs of water was reportedly released on 20 August, further inundating villages in Howrah, Burdwan, Bankura, Malda and Paschim Medinipur districts. Manna recalls how an embankment in Chandreshwar was literally swallowed by the waters in broad daylight residents who had expected the collapse captured it on their mobile phones. "The floods were made worse because none of the sluice gates was functional for want of regular maintenance. The water that entered had no escape route. People had forgotten the last such calamity that happened some ten years ago, even though every monsoon the waters strike with an eerie, inexorable regularity," says Seth. The people feel that the Ghatal Master Plan, designed as a flood control

measure many decades ago, would have made a difference, had it been implemented. With no roads, people walk to Pratappur, where the Silabati dam breached on the night of 29 July. The waters literally gushed in and by morning even double-storeyed pucca houses fell like a pack of cards. There is devastation everywhere. Yet the villagers smile. Electricity has just been restored in the region. Financial relief is to be distributed. Some local boys have been working round the clock to bring food, water, medicine and plastic sheets to the shanties. Shops are back in business. The people may be indigent but they are very well informed. They feel that the Ghatal Master Plan, designed as a flood control measure decades ago, would have made a difference, had it been implemented.

### **West Bengal: Tourism Evicts Traditional Fishing Community at Digha – DMF Leads the Fight Back**

"Khadalgobra is a village adjacent to old Digha township inhabited by about 500 fisher people who fished in near shore waters with Sareng Jal (Surrounding Net) also known in Bengali as Ber Jal. These nets are 2 -3 kilometers long. The net is cast at high tide. Carried to the shore one of its ends is pegged. Rest of the net is taken on a boat to be cast in a wide semicircle in the sea and then the boat returns to the shore in the end. In the process the crew on the boat go on releasing the net. Thus the net is spread in a semi circle with one end pegged and the other end taken to a point near to the pegged end. Once this process is complete the fishers collectively haul up the net by pulling at both ends. 40-45 fishers are employed in the operation which takes about three hours.

These small and traditional fishers used to operate from Digha Mohana (confluence of river Champa with Bay of Bengal) to the Odisha border at Udaypur. 20-30 years ago the fishers could catch 1,500 kg to 2,000 kg of fish a day. The catch included, besides small fishes like Parsey, Taura, Babla, Amodi, Patia, Shrimp etc. even species like Hilsa, Baul and Tiger Prawn. The fishing required a host of pre and post harvest activities. Drying and mending of nets, mooring and repairing of boats, temporary huts to shelter the fishers, fish sorting and drying, visit of scores of fish vendors to collect both wet and dry fish. The beach teemed with livelihood activities of thousands of fish workers both men and women.

Those days are no more. The catch has reduced to 40 kg to 80 kg a day and almost all of it are very small fishes. In the last 30-40 years the more tourism has increased in Digha, the more the fishers have lost their fishing ground. The beach, essential for hauling the net, narrowed and even disappeared from a long stretch due to erosion induced by constructions and embankments. Residues of it has been claimed by tourist activities. And the fishers have been pushed out. Erosion has also increased the beach gradient and the authorities have dumped the beach with boulders to resist erosion. Thus, increasingly, large stretches of Digha sea front has been rendered unusable by the fishers. Also, in blatant violation of environmental norms, all waste water from the hotels and resorts, is directly discharged into the sea without any treatment. The

polluted water, all along the Digha coast, drives away fishes and the beach based fishers loose their catch. Loosing livelihood in fishing the fishers were compelled to either work as hotel boys or as menial workers in construction.

A few of them have been trying small trades on the beach as ice-cream sellers, snacks and tea sellers etc. Ouster from traditional and independent livelihood has cast a gloom of despair on them. No elected representative from Gram Panchayet, Block Panchayet or District Council to local MLA or MP has raised the issue of these poor fishers. Government Officials flaunted the plea of Government Order. Local leaders sometimes even took money from these poor fishers to protect them and did nothing. Obviously making quick money from tourism and related constructions was incomparably more attractive than efforts to save the traditional livelihood of some poor fishers. Road to resistance: These poor and ousted fishers has finally realised that if they want to survive, they have to resist.

On August 14, 2017 about 80 fishers under the leadership of senior fisher Ananta Bhuina sat with the leaders of Coastal Fish Vendors' Union of DMF. They decided to form an organisation of the fishers and named it Digha Small and Traditional Fisher Association. They drew up their main demands and decided to put up those demands to the authorities at Block, Sub-Division and District levels. An 11 member adhoc committee was also formed to take their demands forward. On August 30, 2017 DMF leaders Pradip Chatterjee, Soumen Ray, Milan Das, Debasis Shyamal, Sujoy Jana and Achintya Pramanik visited the fishers' village of Khadalgobra and inspected the fishers' houses. A meeting was held in the village with about 250 villagers. Demands raised were - \* Immediate recognition of the dignity of fishers' occupation through issuance of Identity Card to all fishers by the Government; \* Immediate rehabilitation of the fishers and restoration of their right to fish: \* Extension of comprehensive social security to the fishing community. Tourism at Digha on sea develops by killing the children of the sea - Small and Traditional Fishers. DMF urges upon all concerned to expose the dark side of tourism and stand by the poor ousted fishing communities.

### **West Bengal: Why saving Sundarban matters for Kolkata**

<http://www.thestatesman.com/opinion/saving-sundarban-matters-kolkata-1502494221.html>

"Although, in 2016, the National Green Tribunal held infiltration of population as a major cause for decay and degradation of the Sundarban, it can be averred that the phenomenon is nothing new and is an offshoot of the erroneous policy of 'development' that had been followed not just by the colonial British administration but by successive governments in independent India. In practice this 'development' meant massive destruction of forests and introduction of an unsustainable type of agrarian economy in an area which should have been left alone. The enormity of the problem can be gauged from the fact that 54 low lying islands of the Sundarban

now harbour more than 40 lakh people while the land available for cultivation is only 7,41,944 acres.

They are mostly monocrop areas as the lands suffer from salinity due to proximity of the sea. As a result there is a natural hunger for more and more cultivable area leading to more and more destruction of forest cover and reckless exploitation of forest resources including unlawful poaching of the famous Royal Bengal Tiger which fetches substantial sums in national and international market. Today the Sundarban encompasses a total area of 2.05 million hectares. But its majority portion lies within Bangladesh. The Indian portion, lying within the administrative jurisdiction of 24 Parganas(North) and 24 Parganas(South), has 0.79 million hectares bounded by the confluence of the Hooghly river in the West and that of the Meghna river of Bangladesh in the East. But due to massive denudation, the forest area has shrunk considerably. In 1895 the Sundarban, including that area which now falls within Bangladesh, had a forest cover of 20,000 square kilometers.

Around 40 per cent of it i.e. about 8000 square kilometers lay within what came to be called West Bengal in independent India. But in 1947 i.e. within a little over 50 years, the total forest cover of the Sundarban, consisting of both the Indian and the present day Bangladesh portions, came down to 10,000 square kilometers. The largest deltaic region in the world had been losing invaluable wealth of forestry at a breakneck speed. For preserving the environmental balance in Sundarban it has to be understood first that the region is no more fit for human habitation which it used to be during the ancient and medieval period of Indian history. There is ample evidence of Sundarban's prosperity in the Manasamangal of Bipradasa and the Ain-i-Akbari of Abul Fazl. But during the late medieval period the lower Gangetic basin had started shifting from the west to the east which resulted in severance of connections of many local rivers with the Ganges. The local rivers thus became mere brackish waters as they had neither any link with the mighty Padma, the principal eastward flow, and instead of sweet waters from the Ganges they became subjected to onrush of saline waters from the sea.

This was the reason behind gradual obliteration of civilization from the Sundarban. It can be said with a fair amount of certainty that during the middle of the 18th century dense forests of the Sundarban had extended beyond the present day Kolkata localities like Behala, Thakurpukur and Garia. Decayed stumps of Sundari trees which still abound in large numbers in the Sundarban were found in areas in and around metro railway stations like Jatin Das Park, Bhowanipore and Esplanade where excavations were done for the underground railway system. But the colonial British administration was in need of more rice and other kinds of cereals for the gradually increasing European and native population of Calcutta. As a result denudation of the Sundarban forests started from 1770 to create rice fields, immigrant people were brought in who, by 1785, constituted a growing class of peasant proprietors. There are many factors behind the present day decay and destruction of the Sundarban. But the primary factor is burgeoning of population from which all other factors have followed.

At the earliest stage i.e. during the time of the British rule, the immigrants consisted of mostly people from the Midnapore district and tribals like Santals, Oraons and Mundas from the Chhotonagpur region. At a later date tribal identities got submerged and a completely new kind of population identity has developed here. For understanding the scale of threat to the environmental balance in Sundarban we must be grateful to Anuradha Banerjee, a scholar of Geography who did her commendable research work at the Jawaharlal Nehru University. Her research points to a frightening trend of population settlement in the Sundarban region. The upper portion of the south 24 Parganas district- that forms parts of the stable delta of the Sundarban stretching from Thakurpukur in the West to Canning in the East and from Sonarpur in the North to Joynagar in the South- has small sized settlements compared to those lying in the areas beyond Joynagar which have been christened as the active delta by Banerjee. It is pertinent to note that for a vast area encompassing the western Hooghly side plains and the blocks of Baruipur, Mandir Bazar and Bhangar the average size of a village is less than 3 square kilometres.

As the area per village increases the location also changes towards the active delta spanning from the Sagar Island in the West to Basanti in the East. The high category of 9-12 square kilometers per village and the very high category of village groups encompassing more than 12 square kilometers are seen in areas in the extreme southern delta like Kakdwip and the Sagar Island. The above figures indicate wanton destruction of forest cover nearer the core areas of the Sundarban. Now-a-days immigration has been taking place more at the active delta regions near the Bay of Bengal as villages here show a high concentration of 3000-4500 persons per village but with lower density figures than what are recorded in the areas further north near Kolkata. Greater village sizes with lower densities in the active delta can mean only one thing – more destruction of forests including the invaluable mangroves. With increase of population and concomitant commercial activities mangroves are vanishing leaving the islands completely defenceless before nature's onslaughts. Already there are reports that the Ghoramara island, situated just three miles away from the Bay of Bengal, is on its way to obliteration. But if the Sundarban , or a large part of it, is destroyed then Kolkata will not be safe also.

### **West Bengal: Fleeing the hungry tide**

<http://www.thehindubusinessline.com/blink/know/fleeing-the-hungry-tide/article9850188.ece>

“Amar jomi nodi kheyeye niyechhe (the river has eaten my land), is a common refrain among the hundreds of families whose land deeds have turned to worthless paper in the Sunderbans region of West Bengal. Rising sea levels, worsened by man-made environmental degradation, have snatched away their homes in this vast expanse of coastal mangrove forests. In many of its islands, such as Ghoramara and Mousini, the edges look like nibbled cheese after being gnawed at continually by rising tides and violent seas. “There were more than 30 families living here till a couple of years ago, but now most have left, says Bablu Payal, a daily wage labourer in Ghoramara. His is the last house standing on the coast for miles around. Payal, whose weather-beaten face looks older than his early-40 years, fears that his small mud hut barely a couple of metres from the mud embankment will get inundated with salt water once again this year.

“I have lost count of the times I have moved house, he says, pointing towards the river to show where his house once stood years ago. The losses have been massive, the compensation too little. The 6,000-odd residents of Lohachara, an island that became completely submerged in the 1980s, were rehabilitated on the nearby Sagar island. A young man at the time, Sheik Intaj is today a septuagenarian grandfather of three. He belongs to a family of farmers, but was forced to work as a cart-puller in the new place, struggling to educate his youngest son, even as the older two dropped out of school to earn for the family.

Today, those living on islands such as Ghoramara, Mousini and Sagar have no rehabilitation programmes to fall back on, even as the ground beneath their feet is slipping away bit by bit. Of the 3,000 residents in Ghoramara, the more fortunate ones have been able to buy land in nearby islands such as Kakdweep and Sagar, where they hope to move once their current homes go under. The rest find themselves at the mercy of the rapidly advancing tides. Some have moved to the larger Sagar island, but without any legal titles to the land they have been given. Natural heritage under siege The low-lying Sunderbans is reputed to be the largest mangrove forest in the world nearly 10,000 sq km, of which almost 6,000 sq km is in Bangladesh and the only one inhabited by tigers.

Today it faces a grave threat from rising sea levels an estimated 3-8 mm per year, according to a World Bank report than most other geographies. A Unesco World Heritage site, the archipelago has lost nearly 9,990 hectares on the Indian side, according to the Indian Space Research Organisation. The islands of Bedford, New Moore and Lohachara are among those already lost to the hungry tides. Research by the School of Oceanographic Studies, Jadavpur University, estimates that Mousini has lost over 15 per cent of its area, while Ghoramara has been nearly halved. Sagar, currently a safe haven for the climate refugees from surrounding islands, has not been spared the wrath of the sea either. Ingress of salt water has turned Boatkhalia village into a barren expanse of dead trees. Apart from climate change, the rising sea levels are also being blamed on human activities such as the movement of barges and ships to and from the nearby Haldia Port, disruption in the flow of rivers upstream due to dams, and the compaction of the land accelerated by depleting groundwater levels. Pushed to the corner, desperate residents have

moved to the bigger cities such as Kolkata or Delhi, or even to distant Chennai and the Andaman and Nicobar Islands. Those left behind are largely the older denizens. Skilled in fishing, and collecting crabs and honey, they see little hope of finding a livelihood opportunity outside the delta. “What will I do in Kolkata? Pull a rickshaw? I can't work in a farm, nor am I skilled in manual labour. I will go back to fishing once the forest department gives permits again, says Bhoopal Gyne, a 55-year-old resident of Dulki village.

A lost fight Experts see planned migration as the only recourse for the thousands rendered homeless by the sea change in Sunderbans. “We need to plan where we will put all the people who are getting displaced. We need a plan for their rehabilitation. We have to start utilising money from the climate change adaptation funds, says Subhas Chandra Acharya, former joint director of the Sunderban Affairs Department. “All these people who have been dislocated hold deeds of the land they have lost for no fault of theirs. They need to be compensated. The government has a policy that people who have encroached on land next to rail lines will not be dislocated without proper compensation. But these people are legal owners of the property, which was their source of income and sustenance they had ponds, farms, betel leaf plantations... Won't you compensate them? Acharya asks.

The measures currently used to counter the erosion, including construction of concrete embankments and jetty ghats, are seen as far from successful by the villagers and experts alike. “This is the second time they have poured concrete on this ghat, one villager points out, “but can you fight the sea? “Concrete embankments won't be effective. So long as silt does not come here [owing to reduced flow of freshwater due to geographical reasons, and worsened by upstream dams], there is no help. Because the mangrove also needs something to hold on to, explains Anurag Danda, head of WWF India's Sunderbans programme.

While concrete embankments get washed away over time, heavy jetty ghats tend to sink into the soft mud of riverbanks, requiring frequent maintenance, the villagers say. Under such circumstances, informed migration can be the only adaptation in a land whose descent can be slowed but not halted, says Sugata Hazra, director, School of Oceanographic Studies. “You have to exit from the most vulnerable areas. You have to train the new generation to take up other forms of employment. By 2050 we have to shift at least one million from the most vulnerable area, otherwise all the four million living in Sunderbans would be hurt. It will be one of the biggest retreats of our times, says Hazra, who is credited with first bringing attention to the flood of climate refugees in the Sunderbans. Organic sows the way “People in Sunderbans know only two things chaash (agriculture) and maachh (fish). A lot of biodiversity has been lost. There were many salt-tolerant paddy varieties, which have been lost. There is loss of freshwater fish because of the rising salinity in the river. Because of the introduction of high-yielding rice varieties, a lot of pesticides have been used, which, in turn, kill fish spawns, says Subhas Chandra Acharya, former joint director of the Sunderban Affairs Department. As the rising salinity of land and water forces people out of their ancestral land, there is also change

underway, led by the most severely affected among them. They are going back to the farming methods favoured by their ancestors, relying on local salt-tolerant crops, and organic fertilisers and pesticides.

“The local varieties need little fertilisation and home-made vermicompost is enough, rainwater is sufficient. Even if there is lower output, I still save on input cost, says Madan Mohan Das, a small-scale farmer in Ramganga village. According to the residents, they are currently cultivating 20-25 local varieties. Even until a few years ago, Das, like most other farmers in this region, was cultivating high-yielding paddy varieties and vegetables. While his farm had flourished initially, the requirement of fertilisers increased gradually, thereby reducing his net profit. The organic movement in Ramganga is being led by a group of women with help from the Development Research Communication and Services Centre (DRCSC). After the devastation wreaked by cyclone Aila in 2009, the women in this region began championing traditional farming methods to reverse the health hazards and economic distress caused by chemical-use agriculture. Says Rita Gamela, one of these pioneering women,

“We have to be prepared and we have to work with nature. We can't fight the change in the sea, we can't fight the salt. The women have been propagating a form of “integrated farming that uses all the elements of the farm, landscaping the field to create ponds with fishes to nourish the soil, and using the edges for fruiting trees to reduce the dependence on crop output. Besides expanding the number of farm animals, they are including newer animals such as guinea pigs, for sale during times of distress. Animesh Bera of the Indraprastha Srijan Welfare Society, a partner organisation of DRCSC, explains the merits of this integrated farming model. “If one crop fails, they are able to bank on something else. In Sandeshkhali, Dinabandhu Das, the chief functionary officer of the Joygopalpur Youth Development Centre (JYDC), says, “Since there was no way to test the soil's nutrient requirements, farmers depended on dealers, who sold fertilisers by the bulk, whether needed or not. To remedy this, his organisation has set up a soil testing lab at Sandeshkhali for the use of farmers in the surrounding areas.

### **West Bengal: Future looks bleak for Sundarban's Tiger widows**

"With tigers in the forests, crocodiles in the waters and a largely forest dependent human habitation on the fringe, Sundarban has acquired a tradition of man-animal conflict. Tens of thousands of fishers enter the waters and forests for fishing. Tiger and crocodile attacks are common incidents persisting since the inception of colonization of Sundarban. Thus the mangrove tiger land, one of its kind on the planet, has given rise to a unique and ongoing social problem not experienced elsewhere on the globe – that of thousands of women widowed by tiger or crocodile attacks over the years. Traumatized by the sudden loss of their husbands and main

earning members of their families, harassed by the police as well as the administrative and insurance authorities, struggling hard to save their children and themselves from starvation - the condition of these poor women become very wretched. The activists of Dakshinbanga Matsyajibi Forum worked hard to initiate a change in the situation.

They carried the message of protest, the spirit to demand and assert their rights to these women. And their efforts have started to pay. Fishing community women, whose husbands died due to tiger and crocodile attacks while fishing in the creeks of Sundarban, are today demanding their right to compensation, rehabilitation and decent life. Led by Dakshinbanga Matsyajibi Forum (DMF) Vice-President Gobinda Das and General Secretary Milan Das, about 20 'tiger widows', representing around 3,000 fishing community women widowed by tiger or crocodile attacks on their husbands in different parts of Sundarban forest, made a deputation to the Assistant Director of Marine at Diamond Harbour on 20 December 2016. Deputy Director of Fisheries was also present. The 'tiger widows' demanded - 1. Pension at the rate of minimum Rs.3,000/- per month for every tiger widow. 2. In case of a tiger or crocodile attack on a fisherman an immediate minimum assistance of Rs. 10,000/ to the victim's family. 3. Cost of treatment of tiger or crocodile attack victims to be borne by the government. 4. In the event of tiger or crocodile attack on a fisherman a compensation of Rs. 5,00,000/- is to be paid in case of death and Rs.3,00,000/- is to be paid in case of injury. 5. Permanent rehabilitation for the family of the fishermen killed by tiger or crocodile attack.

The officers of the Department of Fisheries discussed the problem and the demands in a very sensitive and cordial manner. They admitted that the demands were reasonable. The following decisions were taken by the officers - \* The demands will be sent to the higher authorities for taking proper action; \* A meeting will be convened with the participation of ministers and officials of concerned departments and representatives of fishing communities to discuss the problem; A meeting of Fisheries Department officials with tiger widows will be organised at some place in Sundarban, Dakshinbanga Matsyajibi Forum will assist in fixing the venue of the meeting. The officers present considered the complain made by tiger widows regarding non-cooperation by the police in registering FIR in case of death by tiger or crocodile attacks. They observed that in case of refusal to register FIR a copy of the General Diary Entry is to be forwarded to the Fisheries Department. The department will take up the issue with the concerned police authorities. The officials of Fisheries Department suggested to form cooperatives of the Tiger Widows and take up honey processing and packaging, animal husbandry, fish farming, production of value added fish products etc. Fisheries Department will support such ventures they said. The officials of Fisheries Department observed that they do not have data regarding the number of tiger widows in Sundarban and requested DMF to help in the matter. DMF leaders present in the meeting promised to do their level best in furnishing the required

**West Bengal: Fish processing unit and cold storage to be set up in West Bengal's Digha to boost exports**

<http://knindia.co.in/news/newsdetails/sectors/fish-processing-unit-and-cold-storage-to-be-set-up-in-west-bengals-digha-to-boost-exports>

"The Bengal Government is planning to set up the infrastructure to enhance fish exports from the region for which an industrial-standard fish processing unit and a cold storage is being planned for Digha. Up to 40 tonnes processed fish can be stored for months together in the planned cold storage. The West Bengal Fisheries Development Corporation Ltd. (WBFC) would be setting up the export processing infrastructure. It is estimated that Rs 5 crore will be spent to construct the export centre which would come up in a year's time. The construction work would kick-start in late November or early December. This would be the first such large-capacity unit of the Bengal Government. In many countries, the consumption of pre-packed processed fish is on the rise. Europe, USA and the Gulf countries are the primary destinations for the exporting of processed fish. Bengal has already taken big steps in sending its pisciculture products to other parts of the country; and now it is gearing up to capture the export market in a major way.

**West Bengal: Soon, state govt to develop roadmap for inland fisheries**

<http://www.millenniumpost.in/kolkata/soon-state-govt-to-develop-roadmap-for-inland-fisheries-260788>

"The state Fisheries department is going to prepare a roadmap for the better development of inland fisheries in the state and develop a comprehensive strategy to protect the interest of small scale fisherfolk across the state. The main purpose of the roadmap would be to focus on the utilization of potentialities of inland fisheries in the state, augment the production of fishes and sustainably use the fish resources. The guideline will also focus on the protection of waterbodies and their catchment areas. It may be mentioned that the state government may urge the Centre to implement the national policy with an aim to help marginalised and poor fishermen in the state to get rid of deprivation. The main purpose behind setting up the platform by the Centre is to fight for the interest of small scale fish workers throughout the country, meet the demands of the fishing community and protect their livelihood and the waterbodies.

The National Policy on Inland Fisheries will mainly focus on the assessment of the potentialities of inland fisheries and a roadmap for utilisation of the potentialities. The state government will sufficiently sensitise the need of a National Policy on Inland Fisheries and may raise the issue with the Centre. Earlier, there had been attempts to organise the fishing communities but no major development had taken place in this regard. A national level meeting was conducted in West Midnapore recently and an advisory committee has been appointed to prepare a roadmap. The state Fisheries department will also conduct awareness campaigns to check the waterbodies and ponds from being polluted and encroached upon. In some cases, it has been found that various lakes have shrunk. The roadmap will also address all the issues pertaining to small scale fishermen which have been unaddressed for a long time.

## **West Bengal: Climate Change Pushes Sundarbans ‘Tiger Widows’ to Jaws of Poverty**

<https://www.thequint.com/news/environment/sundarbans-tiger-widows-climate-change>

"Geeta Mridha lost her husband on Valentine's Day 2014. He was fishing in the backwaters of West Bengal's Sundarbans National Park with four others when a tiger leaped out of the jungle and dragged him away by the throat. Mridha says the other men didn't even have time to react. His body was never found. ""After my husband's departure, I became completely helpless and hopeless. I didn't know what to do and how to run the family,"" she said. The Sundarbans National Park, in the state of West Bengal on the India-Bangladesh border, is known for its natural beauty, with its lush mangroves and rich wildlife. But for people like Mridha, who live on the floodplains, the park is a place of hardship and loss.

‘Tiger Widows’ Branded ‘Husband-Eaters’ The Sundarbans is home to the world's largest population of tigers, and coastal erosion due to climate change is pushing human residents further into their path. Every year, 50 fishermen or honey collectors are killed in tiger attacks, researchers estimate. After losing their family's breadwinner, women are left to fend for themselves and their children. They are the ‘tiger widows’ of West Bengal. For the widows of the Sundarbans, the search for regular income is compounded by the social stigma they face. A study published in the journal *Environmental Health Insights* in 2016 found that women widowed by tigers are often blamed – unjustly – for the deaths of their husbands. In India's patriarchal society, women are often seen as responsible for any ill fortune that befalls a family.

In the Sundarbans, most tiger widows are branded “swami-khego or “husband-eaters by their in-laws. “Fearing being ostracised by society, these women keep to themselves and go about their life pretending as if nothing happened, said Arjun Mandal of the Sunderbans Rural Development Society (SRDS) and the head of a local community of fishermen. SRDS, which conducted an informal survey between 2006 and 2016 with the help of fishermen and their families, estimates that 260 families have lost breadwinners to tiger attacks in Lahiripur alone. **Sea-Level Rise Limiting Occupation** In the past, widows had been able to make a living after their husbands' deaths by cultivating prawns or carrying out small-scale survival farming. But sea-level rise and population growth are putting the delta's delicate ecosystems under increasing pressure. Today, 4.5 million people live in the Sundarbans, where parcels of fertile land are being swallowed by rising seas, mangrove cover is dying, and the coast is eroding. This means the only option open to widows is often to go out and fish the waters in the jungles where their husbands were killed. “Once the salty water breaches the embankment and enters your land, it makes the field infertile forever, said Alapi Mandal, who lost her husband in a tiger attack a decade ago. Like Mandal and Mridha, Alapi (the two are not related) is also from Lahiripur in the South 24 Parganas district of West Bengal. Mandal grew crops and vegetables on her own land until last year, when an embankment breach swallowed her house and farm. Mridha never owned any land to farm,

and struggled to feed and pay school fees for her two children, now 11 and 9, after her husband's death. In 2015, she and 10 other women formed a group and began going to the jungle together.

"I cannot let my children starve to death," Mridha said. "That's why I decided to go to the jungle." 'Education is the Password' None of the women wants their children to be trapped in the same vicious cycle of poverty and danger. "I have told them that education is the password to get out of this," Mridha said. "I always tell them to concentrate only on their studies." Many women say that if they could find any other work that ensured their families two meals a day they would stop going to the jungle. They don't want to risk their lives, and they want to spend more time with their children, to make sure they stay focused on studies. But community stigma and the loss of arable land make this a distant dream for most tiger widows. Moved by their plight, Arjun Mandal of SRDS has launched a crowd-funding campaign to help the women find a safer way of earning a living, such as manufacturing candle wicks for local markets and temples. So far it has brought in just 7,500 rupees (\$117). "We appeal to all the pious people out there... to extend a helping hand for these families," he said.

### **West Bengal: Suspicious wreckage found near Digha coast, probe begins**

[https://www.indiablooms.com/ibns\\_new/news-details/N/33887/west-bengal-suspicious-wreckage-found-near-digha-coast-probe-begins.html](https://www.indiablooms.com/ibns_new/news-details/N/33887/west-bengal-suspicious-wreckage-found-near-digha-coast-probe-begins.html)

"A suspicious object, which is suspected to be a part of a missile or a crashed fighter jet, was recovered in the Bay of Bengal near Digha coast in West Bengal's East Medinipur district on Monday, reports said. According to reports, local fishermen found the heavy wreckage in early morning. "Fishermen spotted the object 300 metres under the sea and nearly 7 nautical miles off the Shankarpur Harbour," a local police official told IBNS. "The wreckage has been taken to Shankarpur Harbour for examination," the official added. Besides local police, coast guard and Indian Air Force have started investigation into the matter, according to reports. Earlier on Saturday (Aug 26) morning, a couple of loud explosion widespread panic among the locals and tourists in Bengal's coastal tourism hotspot Digha. Glass panes of nearby hotels' windows were shattered due to the explosion's vibration while cracks were noticed on the walls of several establishments. Exact reason behind the massive booms is yet to be established. "We are investigating to know if there is a link between the explosions and the wreckage, recovered from sea," a senior official of East Medinipur district police told IBNS.

### **West Bengal: 349 Women Fishworkers Submit Demand for Land at Basirhat**

"Hundreds of fisher families residing for 70 to 80 years in shacks on the banks of the original stream of river Bidyadhari in villages Gangati, Malatipur, Sadiknagar, Chaita and Chhaberia (tribal village) in Chaita Gram Panchayet of Basirhat-II Block have moved the government demanding their right to homestead land. Right on a large breeding ground of mosquitoes, vermin and rodents, amidst scores of freely moving pigs and dogs, the fisher families have been

living in a very despicable and unhygienic condition. They do not have any legal title of the tiny pieces of land on which their shacks stand. Activists of Dakshinbanga Matsyajibi Forum (DMF) campaigned to make these wretched fisher people aware of their land rights and the ways and means to access the same. The main thrust was to avail the policy declared by the Government of West Bengal to provide homestead land and house under a project named ""Nijo Griha - Nijo Bhumi"" (Own House - Own Land).

DMF activists also conducted a survey of the fisher families to classify the families by caste, religion and single woman headed categories to ascertain priorities as per the policy laid down in the ""Nijo Griha - Nijo Bhumi"" scheme. The effort generated big enthusiasm in the area. Particularly the women have taken lead in organising deputation to the Block Land and Land Revenue Officer (BLLRO) on 22nd August, 2017. About 60 fisher people, 40 of whom were women, thronged the office of the BLLRO and submitted applications for land and house. Seeing the enthusiasm of the local fishers the Panchayet leaders came out to support the move. Witnessing the pressure of the masses the BLLRO immediately ordered inspection of the area on 24th August 2017. Landless fishing communities are contacting DMF organisers and activists from many other places to push ahead with their demands for land and house.

### **West Bengal: Fishworkers' forum raises funds to organise global meet**

<http://indianexpress.com/article/cities/kolkata/fishworkers-forum-raises-funds-to-organise-global-meet-4807820/>

"National Fishworkers' Forum (NFF) Monday organised a "One Fish, One Fishworker Campaign in East Midnapore to raise funds to organise the 7th General Assembly of World Forum of Fisher People (WFFP). The campaign was held across the country in coastal states such as Tamil Nadu, Kerala, Andhra Pradesh, Karnataka, Odisha, Goa, Maharashtra, Gujarat, Pondicherry and Diu and Daman. It will continue till August 23 in West Bengal. During the campaign, member organisations of NFF collected fish from workers at fish markets. The fish will be auctioned, and funds raised through this campaign will be used to organise the global meet, which will be held in Delhi from November 15 to 21. Representatives from 40 countries will participate in this programme. In West Bengal, the campaign was carried out by Dakshinbanga Matsyajibi Forum (DMF) and Midnapore District Coastal Fish Vendors' Union, which are member organisations of NFF. According to NFF Secretary Debasish Shyamal, it was important to organise the global meet to discuss key issues which have been affecting the livelihoods of small and medium fishermen in the country.

### **West Bengal: Flood Devastation – DMF Plunges into Relief Work**

"Incessant downpour and release of water from reservoirs coupled with poor drainage due to silted rivers and wide encroachments on river basins resulted in devastating flood in West

Bengal and some other states. Gushing flood waters wreaked havoc to the life and livelihood of people submerging houses, overflowing roads, inundating farmlands and ponds. The flood waters had brought in a spate of diseases in their wake. In West Bengal death toll has risen to around hundred. Marooned, shelter-less and without food, hundreds of thousands of people needed immediate rescue and relief. Government efforts fell far short of the need. NGOs, CSOs and CBOs joined in. Dakshinbanga Matsyajibi Forum (DMF) with fraternal organisations like Rupnarayan Nad Matsyajibi Union, DISHA and Howrah Zila Bigyan Chetana plunged into relief work in the district of Howrah with whatever provisions of food, water and medicine they could collect. In the district of Howrah Amta-1 and Amta-2 blocks have been the most affected with Gram Panchayet areas of Ghoraberia, Chitnan , Dakshin Bhatora and Uttar Bhatora surrounded by the rivers Rupnarayan, Mundeshwari and Damodar being the worst hit. Dakshinbanga Matsyajibi Forum (DMF) with fraternal organisations like Rupnarayan Nad Matsyajibi Union, DISHA and Howrah Zila Bigyan Chetana organised relief camps in the areas on 6th and 13th August 2017.

Apart from the activists of fish workers' organisation and staff members of DISHA many medical and other students participated in the relief work. Hundreds of affected people, mostly of villages inhabited by fishing communities, were provided with dry food, drinking water and medicines. Local fish worker organisations guided the relief work. The affected people are in urgent need of tarpaulin sheets for making temporary shelters and medical camps with primary medicines. DMF, alongwith its fraternal organisations appeal to all concerned to extend their support.

**India: Heavy rains, floods continue to batter Assam, West Bengal, Bihar; several dead, millions displaced**

<http://indianexpress.com/article/india/heavy-rains-floods-continue-to-batter-north-india-several-dead-millions-displaced-bihar-assam-west-bengal-4800304/>

"Heavy rains, inundation, and floods continue to wreak havoc in India, with the death toll rising in Assam, Bihar and West Bengal this week. Over a crore people have been affected by the situation, with many shifted to relief camps and temporary shelters. Train and rail services of the Eastern Railway have also taken a hit, with many lines inundated or damaged in the rains. Assam The number of lives claimed by the floods in Assam has touched 123; 11 more deaths were reported on Wednesday. Nearly 33.45 lakh people in 24 districts of the state have been affected till now. Dhubri is the worst hit district, with 8.5 lakh people affected, followed by Morigaon (5.1 lakh).

According to the Assam State Disaster Management Authority (ASDMA), 304 relief camps have been set up so far. Assam Chief Minister Sarbananda Sonowal met Prime Minister Narendra Modi on Wednesday to appraise him of the situation. He requested the prime minister to set up

an inter-ministerial team headed by a cabinet minister to visit the state and take stock of the situation. The water level of the Brahmaputra has receded, and is below the danger mark in Dibrugarh, but is still flowing above danger levels in Jorhat, Biswanath, Kaziranga, Tezpur, Morigaon, Guwahati, Goalpara and Dhubri. In Kaziranga National Park, nearly 59 per cent of the area remains inundated, an improvement from the 90 per cent it was three days ago. Over 100 anti-poaching camps remain under water. Bihar The death toll in Bihar has risen to 72, with over 73 lakh people affected by incessant rains and inundation. Fears of floods have gripped the state, after at least 14 districts in the north were submerged, the latest being Gopalganj. Yesterday, a pregnant lady delivered a baby on a rescue boat with the help of NDRF personnel in Madhubani district. Chief Minister Nitish Kumar and his deputy Sushil Kumar Modi were to conduct an aerial survey of the Bettiah and Valmikinagar areas yesterday, but were forced to abandon their plans due to bad weather. They are currently monitoring the situation from Patna. So far, 2.74 lakh people have been relocated to higher ground, while 1.16 lakh people have been taken to relief camps.

West Bengal The toll in West Bengal hit 32 on Wednesday. Over 14 lakh people have been affected in six northern districts of the state, namely Malda, Alipurduar, Jalpaiguri, Cooch Behar and South and North Dinajpur. The state government has set up more than 600 relief camps, while NGOs have added at least 800 till now. NDRF and SDRF teams have been deployed in the region to help with rescue efforts. In a statement, West Bengal Chief Minister Mamata Banerjee said: “We have to rescue the people first and only after that we will start evaluating the magnitude of damage due to the floods. I have already spoken to the prime minister and home minister. Meghalaya Around 1.2 lakh people have been displaced in the West Garo Hills district of Meghalaya due to floods caused by the rising of the Brahmaputra tributary, the Jingiram River. “A total of 136 villages in Selsella block along with 3-4 villages in Tikrikilla blocks have been affected by the recent flood. Over 1.2 lakh people have been affected and a total of 22,898 households were hit in the current flooding of the area, district deputy commissioner Pravin Bakshi was quoted as saying by PTI. Relief camps have been set up and the SDRF has deployed teams for rescue operations.

Bengaluru Meanwhile, the capital of Karnataka received the highest rainfall in a day in August in 127 years on Tuesday. Heavy rains lashed the city, which received 12.8 cm of rain in five hours from Monday night to Tuesday morning. The worst-hit parts of the city were Koramangala, HSR Layout, Ejipura, Jayanagar, JP Nagar, BTM Layout, Bannerghatta Road and parts of Indiranagar. While no deaths were reported, power lines were snapped, vehicles submerged, streets were flooded and trees were uprooted. Uttar Pradesh On Wednesday, after taking stock of the flood situation in Dhaurahra tehsil, Uttar Pradesh Chief Minister Yogi Adityanath has directed district officials to ensure effective relief measures are taken for the people who have been affected. “Any laxity in this regard would be taken seriously, he has told them. He had previously conducted an aerial survey of Gonda, Shrawasti, Balrampur and Bahraich districts.

### **West Bengal: Govt to develop Moyna as state's largest fisheries hub**

<http://knindia.co.in/news/newsdetails/state/west-bengal-govt-to-develop-moyna-as-states-largest-fisheries-hub>

"Bengal Government is planning to develop Moyna in Purba Medinipur district as state's largest fisheries hub. The moves will not only boost fisheries sector in the state but will also cut down the quantity of fish which Bengal imports from other states. Chief Minister Mamata Banerjee during the recent administrative review meeting in Digha, had urged the administration to conduct a study on fish farming. For this particular fisheries hub, the State Irrigation and Waterways Department will prepare a detailed project report (DPR) to find out ways and means to bring water from the rivers Rupnarayan and Kansabati through canals. According to officials who visited Moyna, the area has a potential to produce 60,000 to 70,000 metric tonnes of fish annually. Now, fish farming in the area is carried out for only seven to eight months, according to All India Trinamool Congress website. At the proposed fisheries hub, with water from the rivers to be supplied throughout the year, fish can be cultivated through the year, providing scope for their full growth (size and weight).

### **West Bengal: Fishermen write to Jaitley, Mitra to reconsider GST**

<http://www.millenniumpost.in/kolkata/fishermen-write-to-jaitley-mitra-to-reconsider-gst-256579>

"Various fish workers' organisations have written to the Union Finance Minister urging him to completely roll back GST in the fisheries sector as it would have far reaching implications on the fisherfolk in the state. The organisations also wrote to the state Finance minister Amit Mitra seeking his intervention in this regard. National Fisher Workers' Forum (NFF) has requested the Union minister to consider their appeals. In its letter, the forum has mentioned that the implementation of GST on fisheries sector would be disastrous and said that the fisheries sector plays a vital role in Indian economy through substantial forex earnings, employment generation, supporting livelihoods of millions of fishermen and ensuring nutritional and food security. Debasish Shyamal, Secretary of NFF said: ""We condemn Centre's decision for creating burden on the small scale fisherfolk in the name of introduction of GST. Since it is a zero investment industry, the Centre should keep fisheries out of the GST ambit."" The Dakshinbanga Matsyajibi Forum (DMF), another organisation, has written to state Finance minister Amit Mitra in this regard. Milan Das, general secretary of the DMF said that the contribution of fisheries to total Gross Domestic Product (GDP) is about 1.3 percent.

This sector is currently undergoing serious crisis because of dwindling returns and higher investment and operating costs. The introduction of GST on many of tax exempted items under VAT regime and exorbitant increase in new GST rates on existing taxable items will have far-reaching negative consequences in the livelihoods of the fishing community and to the fisheries economy. This has happened when the other primary and traditional job sectors were given significant concessions to improve the livelihoods of communities working in these sectors, Das said. Fish, fish products and fishing inputs were exempted from commercial taxes by almost all coastal state governments earlier. Over the years, the modernisation of fishing paved the way for introduction of new fishing technologies and taxes were also introduced on boats and engines. The other items were always outside the regime of commercial taxes. After the introduction of the GST, most of the existing non-taxable items became taxable. The tax rate of existing taxable items increased exorbitantly and some of the items were included in the highest category of 28% tax.

The highest category of GST were meant for luxury items but unfortunately the Marine Engines used by fishermen were also included in the same category. It means that GST for a BMW Car and Marine Engines for fishing are in the same category of 28% now.

### **West Bengal: Supply of Ilish or Hilsa, Kolkata's staple fish, is at an all time low**

<http://www.dailyo.in/politics/ilishhilsa-teesta-water-sharing-pact-bangladesh/story/1/18744.html>

"It's raining cats and dogs in Bengal. Pipinghot Khichidi is on Bengali platter sans its partnerilish maach bhaja (fried Hilsa fish). The hot Jodi of the monsoon is missing. Where have the illish gone? It was the financial year 2012-13. West Bengal suddenly saw a 67 per cent dip in Ilish (Hilsa) supply. The preceding fiscal had just been unimaginably good: an unprecedented 29,331 tonnes of Ilish (Hilsa) in the Bengal markets and consequently a long Hilsa season of mouth-watering delicacies ilish bhnapa, doilish, ilish bhaja in the Bengali kitchen. The plunge from 29,331 tonnes to 9,532 tonnes within a year's time took everyone by shock. While scientists were pondering over physiological, environmental and other sundry reasons behind the supply going down, diplomats had something else to worry about.

The year 2012-13 of poor supply saw zero export from Bangladesh. The previous year, however had seen 5,210 tonnes of Padmar Ilish, the tasty variety of fish, coming to Bengal in crates. Swimming back in time to September 2011, it was also the year, which was to see two countries India, Bangladesh being netted together over the Teesta Water sharing pact. There was bonhomie in anticipation of the deal and Bangladesh was all set to welcome the Indian guests with a sumptuous Hilsa spread. The then Prime Minister of India Dr Manmohan Singh was all set to fly to Bangladesh with Bengal chief minister Mamata Banerjee, in tow as getting the latter on board

to sign the agreement was crucial. But Mamata pulled out at the last moment citing that the Teesta water sharing pact would be conflicting in the interest of the state. The agreement could not be signed and the Hilsa lunch thrown in honour of the guests could not be relished.

As speculation went rife as to how would Sheikh Hasina digest the ditch, within months it came to be known that Bangladesh would not export Hilsa to Bengal. New hopes were rekindled in 2016 when Mamata Banerjee won the Assembly election and Sheikh Hasina sent her 20kg carton of Hilsa as a symbolic gesture that the silver beauty from across the border would perennially land on Bengal's platter, provided there was no lock-jam over Teesta water deal. Since then, the Teesta water pact has got mired into new controversies and Hilsa from Padma never came officially. Hilsa or the silver crop of the waters started falling after the 2.24km Farakka barrage with 106 lock gates came up across Ganges in Farakka in Murshidabad district in 1975. The barrage was constructed for diversion of 40,000 cusec water at Farakka to downstream Hooghly for flushing out the siltation, but it in turn destroyed the Hilsa corridor.

Prior to the barrage, Hilsa would migrate beyond Farakka to Rajmahal, Bhagalpur, Ara and Samstipur in Bihar, Allahabad in UP and Agra in Delhi to spawn and lay their eggs in upstream Ganges. “The route got dammed and Bihar and Agra got deprived of a reasonably huge catch of 30,000 tonnes a year. Even Bengal was at the receiving end as Hilsa, known for being choosy about the place of breeding was looking for estuaries with reasonably good flow of fresh water and a deep draught, said fish research scientist and former professor and head of marine science in Calcutta University, Amal Chaudhury. Hilsa requires a minimum 20 meters depth of water for migration. “Where is that depth in the estuaries of Hooghly? Heavily silted and on top of that untreated sewerage, chemicals, industrial pollutants and discharge of unused fuel by the 14,000 fishing trawlers, going for Hilsa catch, are messing up the river mouths and the estuaries of the Sundervans delta. According to Bijan Maity of Kakdwip Fishermen Welfare Association such is the pressure of fishing that even the ban on Hilsa fishing in the breeding months late August to October, was forgotten.

The crisis precipitated after 2014 when the Central Inland Fisheries allowed fishing boats to venture out from June 15th, which happens to herald the onset of monsoon and the peak migratory season for Hilsa for laying eggs in Bengal. Catching juvenile fish means wiping out a generation and this has been going on for the last six-seven years. Talking of the crisis, Maity rued that such is the situation that this year the fishermen couldn't even catch 10 per cent of what they fished last year. “Last year we could supply at least 15- 20 tonnes daily to the Kolkata market. This year, getting three tonnes is becoming a challenge, said Maity. As a result, Ilish keeps eluding the Bengali tastebuds.

### **West Bengal and Odisha: Flood situation in Bengal improves; 7 dead in Odisha**

<http://timesofindia.indiatimes.com/india/bengal-floods-34-dead-situation-improves-as-water-recedes-in-major-rivers/articleshow/59834763.cms>

"The flood situation in West Bengal improved further on Sunday as water started to recede in majority of the rivers in the worst-hit Howrah, Hooghly and West Midnapore districts. The toll, however, rose to 34 since July 21 following the death three more people in the state, officials said. A senior official in the state's Disaster Management Department said that nearly 25 lakh people were affected in about 170 villages in 11 flood-hit districts. The flood was mainly caused by heavy rains earlier this week, triggered by a huge low pressure trough, and water released by the Damodar Valley Corporation (DVC) through its dams along the course of the Damodar river in Bihar and Bengal. Nearly 68,000 people have taken shelter in 221 relief camps set up in the flood-hit districts, he said, adding that the past few days, the upper catchment areas have received little rainfall. West Bengal Irrigation Minister, Rajib Banerjee, said water had started receding in majority of the rivers in the worst-hit Howrah, Hooghly and West Midnapore districts.

""The total release of water by the entire DVC system was 50,000 cusecs on Sunday. There is no report of any fresh inundation,"" he said, adding steps had been taken to distribute relief materials in the flood-hit areas. He, however, struck a note of caution, saying that the situation might worsen anytime if it rained again and more water was consequently released by the DVC system. ""Many people have been rescued from affected areas like Ghatal in West Midnapore district, Pursura, Arambagh and Khanakool in Hooghly district and Amta and Udainarayanpur in Howrah district,"" he said. Yesterday, an Indian Air Force helicopter was deployed to rescue flood-affected people at Ghatal in West Midnapore district, he said.

The state government is yet to estimate loss incurred by farmers as over 2.5 lakh hectares of agricultural land lies submerged. Odisha flood toll rises to 7 The flood toll in Odisha rose to seven with the death of three more people in Jajpur district, even as the water level in river Brahmani receded at some places on Sunday. According to reports from Jajpur district, three people -- Kusa Pradhan of village Khairadiha, Sonu Dalai of Badasulidiha and Ranjit Mallick of Makeipur -- lost their lives in the flash flood in the district, an official statement said. One person of Nilakanthapur gram panchayat of Kendrapara district is reported to be missing in river Brahmani. A Odisha Disaster Rapid Action Force (ODRAF) team is engaged in the search operation, they said. Four persons, two each in Kalahandi and Malkangiri districts, had died in the flood earlier. Water level in river Brahmani has receded by more than a foot in Kendrapara and Jajpur districts.

Barring these two, situation in all other districts is normal. At least 15 gram panchayats of Bari block were affected due to a breach on Brahmani left embankment at Kimbhiriapal gram panchayat on Saturday. About 1,600 people have been evacuated to safe shelters at eight places, while many others in the inundated areas have taken shelter in the houses of their neighbours, a senior official said. Free kitchens have been opened for the flood affected and dry food like 'chuda' (flattened rice) and 'gur' (jaggery) are being distributed wherever necessary. Around 50 MTs of cattle feed has been sent to Bari block. Another 50 MTs of cattle feed has been sent to

Balasore district, the official said. In Kendrapara district, seven gram panchayats of Pattamundai block namely Penthapal, Alapua, Taradipal, Singhagaon, Rahulia, Andhara and Nayadia have been marooned due to flood water. Water level of river Kharasrota is in receding trend near Aul in Kendrapara district, he said. Chief Minister Naveen Patnaik had on Saturday directed the officials to ensure that flood-hit people in Rayagada and Bhadrak districts get house damage assistance within three days.

### **West Bengal: Weather, import ban dash hilsa hopes in Kolkata**

<http://timesofindia.indiatimes.com/city/kolkata/weather-import-ban-dash-hilsa-hopes/articleshow/59826215.cms>

"If you have been missing the hilsa this season, your wait may have just got longer. Trawlers hunting for the silvery delight have returned to sea this week but have failed to procure a healthy catch. So far, Kolkata has been receiving just 20% of the daily supply it received in July-August 2016. A combination of unfavourable weather and import restrictions have ensured that the soft, succulent hilsa remains short in supply. Inclement weather had prevented trawlers from venturing into the estuarine rivers and the sea from where the bulk of the supply is procured. It has brought the supply to Kolkata markets down to a trickle. "Compared to a daily supply of 15-20 tonnes last monsoon, this year we have been receiving less than 3 tonnes. The local variety is being substituted by the Myanmar hilsa, which is neither as fresh nor as tasty," said Syed Anwar Maqsood, secretary of the Fish Importers' Association.

With import from Bangladesh having stopped three years ago, Myanmar is the lone alternative source. But the hilsa season in Myanmar is a different one - February-March. As a result, the imported fish are stored for the city season that begins in July. "The fish naturally loses freshness and taste. It can't be compared to the fresh catch that comes from Digha, Frazerganj or the Sunderbans. Almost 80% of the hilsa now selling across Kolkata markets is the Myanmar variety," added Maqsood. Bijon Maity of the Kakdweep Fishermen's Welfare Association agreed. "Bad weather and inadequate rain reduced the hilsa catch. So far, the catch has been around 20% of the normal volume. Heavier rain helps reduce water salinity and attracts more hilsa. But it hasn't happened so far," he said. Last week's heavy showers in south Bengal could have made a difference, said Maity. But the catch has been a disappointing one. "With the weather having improved, trawlers returned to sea on Wednesday. But around 50 of them have

so far returned with less than 40 quintals. The season is running out, so the chances of a supply rise are now remote," said Maity. At present, a hilsa weighing a kilo is selling at Rs 1,000. Among other reasons that have affected the catch in Bengal is the lack of a 'middle zone' in the path of hilsa migration, according to Asim Kumar Nath, associate professor at Serampore College and a hilsa researcher. Hilsas need a middle zone or ecotone while travelling from the sea to the rivers, Nath explained.

### **West Bengal: Fish in abundance but rice is scarce, say victims of Bengal floods**

<http://www.newindianexpress.com/nation/2017/jul/26/fish-in-abundance-but-rice-is-scarce-say-victims-of-bengal-floods-1633514.html>

"With West Bengal chief minister Mamata Banerjee refusing to term the massive inundation of southern Bengal districts as 'floods' and no signs of relief reaching affected villages, flood victims in Arambagh of Hooghly district and Ghatal of Paschim Medinipur district are sustaining themselves by fishing in flood waters and sharing among themselves whatever little rice they are left with. The fish have been brought by swelling rivers Silabati and Dwarkeswar to the low-lying Ghatal-Arambagh region. "Fresh seeding of the season's paddy and all investments along it are lost to the floods.

However, a lot of fishes from the two rivers have come into our inundated fields. So youngsters from affected families venture out since morning to fish in the flood-waters. While we keep the major catch with us, we sell the surplus in Arambagh market to buy oil and salt, said Sheikh Nasir Ali of Saora village near Arambagh town. However, rice is scant to have fish curry with. "We are sharing among ourselves whatever little rice of the previous season is left with us, said Asgar Ali of Mukhtarapur village. According to local estimates, some 5,000-7,000 people rendered homeless by floods have taken shelter in school buildings of Saora and Mukhtarapur. "People are sharing whatever food they could gather before moving to the school shelters which are on higher grounds. No officials and ministers have not come or sent any relief, said Mukhtarapur resident Sheikh Asgar Ali.

The entire lowland region of Saora-Nokunda-Mukhtarapur in Arambagh and Ghatal-Kharar region have been cut off by floods. "Some 30-40 villages in Ghatal-Kharar are inundated. People are reaching upland through makeshift boats. Still, no relief is reaching us, lamented Shantanu Mondal, a resident of Harisinghpur village near Ghatal town. Many of the affected villagers

alleged that they heard some relief was sent to the panchayat offices but never saw them. “We heard that plastic sheets were sent to our village but have not seen any, said 64-year-old Moidul Hussain of Nokunda village. Those most in need have not been given any relief. Many of the panchayat members have distributed relief material among their kin, alleged another villager, Radhakanta Sikdar. Though the incessant rains that lashed south Bengal districts for the last 72 hours subsided to a drizzle on Tuesday, worries are far from over. With heavy rains in neighbouring Jharkhand, Damodar Valley Corporation (DVC) has released 33,000 cusecs of water from its barrages and dams on Monday and 18,000 cusecs more on Tuesday.

While chief minister Mamata Banerjee indirectly blamed the DVC for worsening the situation, state irrigation minister Rajib Banerjee said that DVC is releasing more water despite having the capacity to hold it. Sources in DVC said they are forced to open the floodgates fearing collapse of dams and barrages. “The Maithon Dam, Durgapur barrage, Masanjore and Panchet Dams do not have great storage capacity. If the danger levels are crossed, DVC has to open the floodgates so that the dams and barrages don't break down, which may lead to hundreds of deaths in South Bengal, a senior DVC official told the New Indian Express. As rains subsided, long queues were witnessed at gas centres and residents from upland areas were seen thronging markets for vegetables, rice and other essential commodities.

#### **West Bengal: Only 40 per cent boats fitted with tracking device**

<http://www.asianage.com/metros/kolkata/260717/only-40-per-cent-boats-fitted-with-tracking-device.html>

"The lack of transponders on fishing boats from West Bengal has caused a security concern. According to sources in the Indian Coast Guard (ICG), the state has 13,123 registered boats of which only around 35 to 40 per cent are fitted with transponders, a device used for tracking and monitoring boats at sea which the Union home ministry had made mandatory in the wake of the 26/11 terror attacks in Mumbai. Asked about the lack of transponders, ICG inspector general of North East (NE) Region Kuldip Singh Sheoran said on Tuesday, “There are some boats which are not fitted with the device. It is a state subject. An initiative has been underway on our part to convince the fishermen of the use of transponders which are quite helpful also during the monsoon when they can send distress signals to us in case of any problem. We can reach them within half-an-hour.

It is after all in the interest of the fishermen's safety and security. On the benefits of the use of transponders in case of terror attack, Mr Sheoran elaborated, “It is very important. The central and the state government are putting a joint effort for the use of the device in maximum number of boats. After the 26/11 terror attack, all the agencies and stakeholders have been very proactive. We have a good synergy in advising the fishermen to use and maintain the device. Mr Sheoran was speaking to the media at ICG (NE) headquarters in New Town, where the maiden Indo-Bangla Coast Guard Table Top Exercise got underway.

Commander Mohammad Radwan and Lieutenant Commander Fariduzzaman from the Bangladesh Coast Guard are taking part in the exercise aimed at bolstering the Indo-Bangla joint search and rescue (SAR) operations in the Bay of Bengal. Mr Sheoran said, "The Bay of Bengal is a hotspot of maritime trade and ships of both countries are at risk. A strong SAR setup is the need of the hour. The two-day exercise will take the participants through a dummy mass rescue operation in the sea. Mr Radwan said, "The iconic Indo-Bangla SAR operation in August of 2016 where more than 300 lives were saved showcases the synergy and co-ordination of both the forces. The Coast Guard forces of the two neighbouring countries signed a memorandum of understanding in 2015 and established standard operating procedure in April of 2017.

### **West Bengal: Flooded after heavy rains; Met department says downpour may continue**

<http://www.firstpost.com/india/west-bengal-flooded-after-heavy-rains-met-department-says-downpour-may-continue-3846803.html>

"Incessant heavy rains in Gangetic West Bengal has led to flooding of several low lying areas, even as the Met department warned of similar weather till Tuesday. "Heavy to very heavy rain occurred in several parts of Gangetic West Bengal since yesterday and is likely to continue till Tuesday," West Bengal Irrigation minister Rajiv Banerjee told PTI here on Sunday. Stating that some rivers are flowing above danger level, the minister said the Irrigation department is monitoring embankments of rivers round the clock. "Rivers Silabati in West Midnapore, Darakeswar in Bankura and Dwaraka in Birbhum are flowing above danger level, while some other rivers are also in spate owing to the heavy rains," Banerjee said.

The Met department has warned of heavy to very rains at isolated places over Gangetic West Bengal, with extremely heavy rain at isolated places over East Midnapore, South 24 Parganas, Bankura, Birbhum, Purulia and West Burdwan districts till Tuesday. The Met department has warned of rough seas along the West Bengal coast and advised fishermen not to venture into the sea. In sub-Himalayan West Bengal, heavy rain is likely to occur at isolated places over Darjeeling, Jalpaiguri, Malda, North and South Dinajpur districts for the next two days, the Met department said. The metropolis, where some low-lying areas got waterlogged, recorded 60.5 mm rainfall in 24 hours till 8.30 am on Sunday, the Met department said. Bankura recorded the state's highest rainfall at 274 mm during the same period, while Digha recorded 104 mm and Burdwan received 72.6 mm of rains.

### **West Bengal: 15 fishermen rescued from Jambudweep**

<http://www.newindianexpress.com/nation/2017/jul/20/15-fishermen-rescued-from-jambudweep-1631214.html>

"Fifteen fishermen of a fishing trawler, which had developed mechanical fault in the highseas seas off the coast of Jambudweep in South 24 Parganas district, have been rescued alive. The fishing trawler 'FB Debjani', which had left Kochuberia a week ago, developed the fault on Tuesday night, sources in the Coast Guard said. The fishermen was able to send a signal for help and Coast Guard and other trawlers rescued them yesterday morning. The fifteen were rescued and brought back to Namkhana, the sources added.

### **West Bengal: 14 fishermen from Bengal rescued**

[http://www.business-standard.com/article/pti-stories/14-fishermen-from-bengal-rescued-117071801220\\_1.html](http://www.business-standard.com/article/pti-stories/14-fishermen-from-bengal-rescued-117071801220_1.html)

"Indian Coast Guard (ICG) today rescued 14 fishermen of West Bengal from the rough sea 55 nautical miles off Paradip light house in Odisha. ""Coast Guard today saved 14 lives on receipt of SOS call from assistant director, Fisheries, at Contai that a fishing trawler called Sandhya had gone missing,"" ICG spokesperson Avinandan Mitra said. ICG regional headquarter here pressed into service a ship and Dornier aircraft to locate the boat carrying the fishermen from Contai on receipt of the SOS, he said. The missing boat was located in the Bay of Bengal by one the aircraft about 55 nautical miles off Paradip light house. ICG ship 'Razia Sultana' was then sent to the boat, which was adrift on Bay of Bengal. ""The fishing boat carrying 14 crew members had gone to the mid-sea on July 11 for fishing and developed technical snag in its engine, leaving it adrift in the high seas,"" the spokesperson said. All the 14 crew members are safe and were provided with food and other assistance before the boat was towed and handed over along with the crew at Paradip, he added.

### **West Bengal: Fish market in Midnapore becomes a center of communal harmony**

<https://news.biharprabha.com/2017/07/fish-market-in-midnapore-becomes-a-center-of-communal-harmony/>

"People taking a stroll at this beautiful sea beach are a regular scene. People from far and wide visit and explore this beautiful and clean beach in Digha town of East Midnapore district in West Bengal. Digha is the most popular sea resort in West Bengal. However, apart from being a hot tourist spot, the place is also widely known for the fish market. And the fish market is ruled not by the economics of profit and loss but by mutual co-existence of the people involved in this business who belong to different religion and caste. Their work involves catching fish together since early in the morning and selling at the retail market. Both Hindus and Muslims enjoy each other's company at this market. Most of the fishermen stay away from home and family for several months and it is the friendship bond that binds them all like different beads in a common

thread. There are several such examples which can be found in each and every nook and corner of the country. The Digha coast fish market is another such example which has reinforced our faith in the secular fabric of our country.

### **West Bengal: Govt to facilitate development of inland fisheries in Bengal**

<http://www.millenniumpost.in/kolkata/kolkata-251574>

"The state Fisheries department will soon chalk out a guideline to help the marginalised fish farmers through development of inland fisheries. It will also assess their potentialities which may be developed as an alternative source of income for many in the villages. The department will ensure that sources of water in rivers are not cut down due to poor watershed management in the catchment areas. It has often been found that natural water drainage is obstructed by the construction of roads, railway tracks and the like. Another important issue is the usage of chemicals in agriculture which is destroying the fish resources of wetlands and paddy fields. It is the small fishermen who are worst hit if the quality of waterbodies are not good. According to a senior official of the state Fisheries department, the guidelines which will be formulated will mainly focus on the protection, augment and sustainable use of the fish resources in all inland waterbodies. Guidelines will also be chalked out for protection of waterbodies and for the incorporation of fisheries in all development planning that affect them and watershed management. Efforts will be made to sensitise the fisher folks and also create awareness about the need of developing inland fisheries in larger scale as 20 million fishermen are involved in this.

A platform will also be set up to fight for the interest of small-scale fish workers throughout the state, meet their demands and protect their livelihood. A national policy on inland fisheries will be formulated in order to ensure that the concerns mentioned in it are addressed. Earlier, there have been several attempts to organise the fishing communities, but they have till date remained unsuccessful. A national level meeting was conducted in West Midnapore recently and an advisory committee has been appointed to prepare a road map on the areas that need attention of the Centre and state government and how to develop the inland fisheries. Various organisations of fishermen in the state have been demanding setting up of a national platform by the Centre which, they believe, will address several issues pertaining to small-scale fishermen which have been unaddressed for a long time. Statistics show that rivers and canals, reservoirs, ponds and tanks, oxbow lakes, wetlands, backwaters and estuaries yield 6.14 million tonnes of fish, which is more than 64 percent of the total fish production in the country. The potential of inland fishery

resources has not been utilised yet properly. Less than 10 percent of the country's natural potential is used for fresh water aquaculture, while for brackish water aquaculture the area under cultivation is just above 13 percent of the potential area available.

### **West Bengal: Sunderbans losing its famed mangroves because of climate change**

<https://www.indiasopinion.in/sunderbans-losing-its-famed-mangroves-because-of-climate-change/>

"In an advancement that will ring alarm bells for both environmentalists and policy producers, the mangrove forest cover in the Indian Sunderbans has been depleting alarmingly finished the past couple of decades. Mangrove Forest Cover Changes in Indian Sundarban (1986-2012) Using Remote Sensing and GIS, a publication by the School of Oceanographic Studies, Jadavpur University, uncovers that from 1986 to 2012, 124.418 sq. km. mangrove forest cover has been lost. The aggregate forest cover of the Indian Sunderbans as evaluated by remote sensing studies for the year 1986 was around 2,246.839 sq. km., which bit by bit declined by 2,201.41 sq. km. in 1996, at that point down to 2168.914 sq km in 2001 and to 2122.421 sq km in 2012.

The loss in the mangrove forest in the Indian Sunderbans is around 5.5 %. "The continuation of this process in light of climate change and sea level rise represents a genuine threat to the carbon sequestration potential and other ecosystem services of this mangrove forest in future, creators Sugata Hazra and Kaberi Samata noted. The paper additionally takes note of that the mean sea level rise at the Sagar Island Station, measured from 1985 ahead till 2010, demonstrates a rise by 2.6-4 mm a year, which can be viewed as a driving factor for coastal erosion, coastal flooding, and an expansion in the quantity of tidal creeks. The publication highlights a period arrangement of the erosion of no less than 18 mangrove forested islands of the Indian Sunderbans from 1986 to 2012. For example, the loss in mangrove cover at Gosaba has been around 20%, down from 517.47 sq km in 1986 to 506.691 sq km in 2012.

In Dulibhasani West, the loss of mangrove cover has been around 9.7% from 180.03 sq. km. in 1986 to 163.475 sq. km. in 2012. The mangrove forest cover of Dalhousie, another island, has exhausted by 16%, from 76.606 sq. km. in 1986 to 64.241 of every 2012. Bhangaduni has one of the highest erosion levels of mangrove forest land, from 40.4 sq. km. in 1986 to 24.9 sq km in 2012, assuming the loss to more than 37%. Jambudwip, one of the smallest uninhabited islands at the mouth of the sea, additionally has reduced forest cover from 6.095 sq. km. in 1986 to 5.003 sq. km. in 2012, or around 10%. Different islands like Sajnekhali North, Matla and Bulchery have additionally endured critical mangrove loss. Professor Hazra, who heads the

School of Oceanographic Studies, Jadavpur University, clarified how climate change and sea level rise has added to the marvel of losing land, incorporating mangrove forests in the Sundarbans, in the last part of the 21st century.

“This is on the grounds that there is less fresh water stream and sediment supply in the western (Indian) part of the delta, so we have starvation of sediment and the rate of sea level rise is higher than sediment supply. Subsequently we are losing land, including mangrove forest, he revealed to *The Hindu*. As indicated by Professor Hazra, the eastern (Bangladesh) side of the delta is gaining land in light of the colossal measure of sediment and water spill out of the Brahmaputra and Meghna rivers. The loss of forest cover happens in spite of noteworthy expansion of forest land as plantations. Ajanta Dey, joint secretary and project director of the Nature Environment and Wildlife Society (NEWS), a NGO that has been working in the Sunderban ecosystem, said that a critical minimal inflow of freshwater is necessary for the luxuriant growth of mangroves.

“At the point when freshwater inflow is missing, there is a change in mangrove progression, and freshwater cherishing species of mangroves are supplanted by salt-water adoring ones, she called attention to. She said the immediate impact of salinity will be on the fishing community, where commercially sought after fish species will be supplanted by fish that does not have as much market esteem. Ms. Dey likewise alluded to a report by the Indian Space Research Organization (ISRO), which was presented before the Eastern Circuit Bench of the National Green Tribunal in 2015. The report brought up that the Sunderbans has lost 3.71% of its mangrove and other forest cover, while losing 9,990 hectares of its landmass to erosion in one decade. While prior studies likewise communicated concerns over the delicate ecosystem of the Indian Sunderbans that, other than being home to the Royal Bengal Tiger, additionally harbors a populace of 4.5 million individuals, this examination presents clear proof of the loss of land and mangrove cover.

### **West Bengal: Dakshinbanga Matsyajibi Forum (DMF) Reaches the District of Murshidsbd Holds Meetings with Fish Workers on June 18th 2017**

"In yet another breakthrough DMF has linked up with fish workers in the district of Murshidabad in West Bengal. Murshidabad has been a district with a large number of fishers, fish farmers and fish vendors. On June 18th 2017 a team comprising of DMF Assistant Secretary Ambia Hossain, President Pradip Chatterjee and Advisor Soumen Ray visited Sahebpara, a village across the Ganga at Baharampore in Murshidabad. The village, a few years back, teemed with fishing activities due to plentiful of fish in the river Ganga. Now it has become a place of despaired and impoverished people desperately moving around in search of livelihood.

The river has almost no fish. The small and traditional fishers do not have money to get privately owned ponds under lease. So, some of them work as part time contract labourers serving the pond owners in fish farming. A few have switched over to fish vending, purchasing fish from local depots and selling those in different localities. Others work as daily labourers in agriculture, brick-kilns, construction works etc. The fishing community members lamented the good old days

but were in a fix to suggest a way out of their difficulties. They were eager to form a unit of DMF there. Discussions that ensued threw up two probable moves. One, restoration of fish resource in Ganga and two, helping the fish vendors to consolidate their positions through micro-finance, development of markets etc. An ad-hoc committee was formed to take forward the activities. Next day, 19th June 2017 another meeting was arranged with fishers on the bank of Bhandar Daha - a lake cum wetland extending 56 kilometers through four blocks. Bhandar Daha once constituted the course of Ganga. Thousands of fishers are still dependent on this large waterbody with perennial water source.

The meeting was held at Anandanagar and attended by about 200 fishers including 35 women. Many fisher participants presented the story of Bhandar Daha, their lifeline. They said that there were about 30 Fishermen Cooperative Societies at Bhandar Daha. None of these are functioning. Common complain has been that the office bearers of societies sell off the fishing rights to outsiders, usurp bulk of the proceeds and give away only 50 to 100 rupees to general members. The main water inflow channel to Bhandardaha has been blocked and encroached. The flood in the year of 2000 has further silted Bhandar Daha. There has been no real drive to restore the water body. At times the government talk of desilting and clearing the water body but no real work is done. The condition of lesser canals and streams are all the same. It was also reported by the resident fishers that a Rs.400 crore project has been sanctioned recently for restoration of Bhandardaha. But the people are at dark regarding the work plan or its execution. It was decided that:-

- \* Linkages will be built up with fishing communities living in other places around Bhandar Daha.
- \* A membership drive will be undertaken with formation of units of DMF.
- \* A deputation will be given to the District Administration and Fisheries Department authorities on the main demands of the fishing communities dependent on Bhandar Daha Bill.

### **West Bengal: State Govt targets 3 lakh MT fish production**

<http://www.dailypioneer.com/state-editions/ranchi/state-govt-targets-3-lakh-mt-fish-production.html>

"The State government has set its target to produce 3 lakh metric tonnes of fish in the current financial year. The target has been fixed on the premises that the State needs to decrease its dependence on neighbouring West Bengal for fish. During a review meeting of the fisheries department, Chief Secretary Rajbala Verma today directed to conduct a study of water reservoirs and prepare a report to ascertain how much fish can be produced and stockpiled to promote fish production. The CS directed to take assistance of fisheries friends and make a portal of water bodies in which MIS entry of all water reservoirs should be ensured. Verma said that fisheries production should be targeted as per national consumption.

The departments officials said that against the target of 1500 crore of fish production in 2017-18, 869 crore fish seeds have been produced and stocked by fisheries officers. Also, against the training 10,000 fish seed producers, 8059 fish seeds producers have been trained and registered.

At the same time, districts have been asked to produce 3 lakh metric tonnes of fish. Verma directed to pay the money against facilities to the fisheries friends through DBT. She, therefore, asked to ensure Aadhar seeding of all fisheries friends by July 5. She also said that appointment of MIS manager would be done to complete data entry work. The department officials informed that place and beneficiaries have been selected for the construction of 120 hatcheries under cluster approach. Work on 65 hatcheries has been started and their photographs are being uploaded on website. Apart from this, RKVY has proposed to make 120 hatcheries. Its process will be completed in 2-3 weeks time. Moreover, places are being found for construction of 120 hatcheries. 200 spots have been selected for river fish farming. Department Secretary Pooja Singhal, Director Rajeev Kumar and other officers were present in the meeting.

### **West Bengal: Bengal ornamental fish sales hit by 70 per cent following new rules**

<http://www.india.com/news/agencies/bengal-ornamental-fish-sales-hit-by-70-per-cent-following-new-rules-2254857/>

"A 70 per cent drop in the sale of ornamental fish has been observed in West Bengal in the last 25 days following the notification of the Prevention of Cruelty to Animals (Aquarium and Fish Tank Animals Shop) Rules, 2017, fish traders said on Tuesday. West Bengal accounts for 75 to 80 per cent of ornamental fish production in India and is the major supplier to other states as well as to about 12 to 14 countries including Thailand, France and Singapore. But hobbyists and fish farmers have been panicking over the new guidelines which include clauses on certificate of registration from the State Animal Welfare Board for Rs 5,000 per year, employing a fisheries veterinarian or a fisheries expert 24X7, prohibition on placing fish tanks in direct sunlight or near radiators and where rainwater can enter.

"They are asking all sorts of questions after the notification came in on May 27. As much as 70 per cent of usual sales are down. We have lost business of Rs 10 lakh. Bengal is the largest producer of ornamental fish in India and if this continues we will be forced to take legal steps, Sunirmal Das, secretary of the West Bengal Ornamental Fish Association (WBOFA), told IANS. The body of ornamental fish farmers was assembled in response to the notification and will be registered soon, said Das. So far it has discussed the issue with state Fisheries Department and other stakeholders. "It seems the Centre did not consult the stakeholders. The state Fisheries Department was not in the know, Das said, adding that the guidelines are "impossible to adhere to. "For example, a fish farmer earns about Rs 1 lakh per year. To follow the rule on employing an expert full time, that person has to actually employ two people for 24X7. That means it will set him back by Rs 20 lakh a year. This is impossible, he argued.

Similarly, he pointed out sunlight is essential for the development of variety of bright pigmentation of ornamental species, while rainwater is recommended by experts for egg-binding. "Most importantly, if one follows the guidelines then 95 per cent of popular marine fish are banned from being kept in aquariums and being sold. This includes some varieties of clown fish,

angle fish, eels, all octopus species, groupies, parrot fish etc. “How will the trade flourish? Eels and octopus are kept in tanks before consumption. So how will consumers eat them? Will they directly eat them from sea? We have no objection to the ban on whales, dolphins etc, Das asked. He said domestic trade from Bengal alone amounts to Rs 10 crore per year while of the total export figure of \$1.5 million from India, Bengal contributes about \$1 million. Das also highlighted the rules also say no aquarium or fish shop shall display or sell bowls for keeping fish tank animals; or fish tanks with a capacity of less than 13 gallons or 60 litres of water for keeping fish tank animals. “Usually people, especially children, prefer the bowls and smaller tanks. How we can expect them to purchase a 60 litre tank for Rs 1,000, added Das.

**West Bengal: Rampal plant mercury to affect Sundarbans aquatic, forest ecosystems: Study**

<http://bdnews24.com/bangladesh/2017/06/17/rampal-plant-mercury-to-affect-sundarbans-aquatic-forest-ecosystems-study>

"National Committee to Protect the Sundarbans (NCPS) came up with the new research report on the effects of the power plant on the Sundarbans mangrove at a press conference on Saturday. Professor Charles T Driscoll from the Department of Civil and Environmental Engineering, Syracuse University, the US, made the report titled, 'Emissions, Atmospheric Deposition and Ecological Effects of Mercury, including Emissions from the Rampal, Bangladesh and Effects on the Sundarbans Forest Biogeographic Zone'. Prof Driscoll concluded after analysing one-year data on the area in Bagerhat district that the proposed power plant poses a 'high risk' of mercury contamination for the aquatic and forest ecosystems.

The ecosystems include the Sundarbans World Heritage site adjacent to the Passur River and parts of the Bay of Bengal, he said. The study suggests that during the operation of the power plant, mercury deposition would increase by approximately 50 percent over the currently estimated deposition near the proposed facility, the professor said in the report. ""Because of an abundance of forests, wetlands and aquatic resources, Bangladesh is highly sensitive to mercury deposition,"" he said. He also said the concern over mercury deposit was particularly heightened for the Sundarbans Forest Biogeographic Zone, which is near the proposed facility and is projected to receive considerable mercury deposition from the proposed facility. As a result, the plant would increase health risk to people and wildlife, including endangered birds, cetaceans, and reptiles, that will consume fish from the Sundarbans and Bay of Bengal, the report said.

It said coal combustion is a major source of global mercury emissions to the atmosphere, and after release to the atmosphere, mercury can be deposited locally, regionally and globally to the Earth's surface. At the surface of the earth, ionic mercury can be microbially converted to the bio-available form, methylmercury. Methylmercury is readily transferred up to the aquatic and terrestrial food chains to elevated concentrations in top trophic level organisms, the report said. Methylmercury accumulates easily in the muscle tissue of fish and their prey, and human

exposure to the toxin largely occurs through consumption of contaminated fish, according to the report.

The report said while most mercury-related health studies focus on changes in intelligence quotient, emerging research suggests that a spectrum of health effects can occur as a result of methylmercury exposure, including cardiovascular disease in men. The greatest concern related to human methylmercury exposure is on sensitive people like women of childbearing age and children, Prof Driscoll said in the report. He said the US Environmental Protection Agency and US Food and Drug Administration issued a joint federal advisory in 2004 over mercury in fish for women who might become pregnant, women who are pregnant, and children.

Dhaka University geology department Professor Badrul Imam briefed the media about the findings of the study. NCPS Convenor Sultana Kamal, Member Secretary Abdul Matin, Doctors for Health and Environment President Nazmun Nahar, and Dhaka University economics department Professor MM Akash were also present. The committee had earlier come up with reports on effects of the proposed coal-fired plant on human health and ecosystems. The government and the plant authorities, however, denied the claims, saying the 1320 megawatt plant, being set up jointly with India, will not impact the Sundarbans or the environment in the region.?

### **West Bengal: E-scooters to deliver fish to your home**

<http://www.asianage.com/metros/kolkata/180617/e-scooters-to-deliver-fish-to-your-home.html>

"A Mumbai-based company that expertise in the manufacturing of battery-operated pollution free vehicles have evinced interest in the door-to-door fish delivery project of the Bengal fisheries department. The company, Ecoev India Pvt Ltd, which is the license holder of the patented technology of IIT Mumbai, is eager to operate three-wheeled E-Trikes (electric scooters) for ferrying fishes from door to door and have written to the State Fisheries Development Corporation (SFDC) expressing their willingness in their regard. "We have been looking for franchise for delivering fish in motorcycles at the doorsteps of people in Salt Lake-Rajarhat area. They have seen newspaper reports and have written to our director Soumyajit Das. We have to first assess the feasibility and the cost effectiveness.

So we have written to them seeking the after sales price, after sales service, whether there is any dealer based in the city or we have to procure it directly from their Navi Mumbai unit and other details, an SFDC official said. The advantage of these three wheelers is that women can also be roped in for the delivery of fishes. The E-Trikes are being used in Gujarat and Maharashtra and it is eco-freindly in comparison to petroleum-based motorcycles. The vehicles are also equipped with a box where fish or fish items can be kept. SFDC has planned its doorstep fish delivery project to give fish-loving Bengalis the taste of a wide variety of fish like Telapiya, Rohu, Katla,

Bata, Pabda, Tangra, Koi, Chingri etc at a price that will be at least 20 per cent lower than the market price. The delivery persons will be purchasing fish from SFDC counter at Nalban Food Park in Salt Lake directly at a cheaper rate and will be selling it at households.

### **West Bengal: Rampal fallout will be severe**

<http://www.thedailystar.net/frontpage/rampal-fallout-will-be-severe-1418422>

"Massive dredging of the rivers in and around the Sundarbans and transportation of coal for Rampal power plant would seriously affect the fish, wildlife and other aquatic resources in that region, scientists said in a new report. "Dredging and sediment disposal in estuarine and coastal waters such as the Sundarbans reserve forest and the Bay of Bengal will increase turbidity and sedimentation, affecting light availability for marine organisms," it said. It would affect the growth and survival of organisms living at deep under water and dolphins, fish and water birds, said the report titled "Critical Review of Shipping and Dredging Plans to Facilitate Coal Transport for the Coal-fired Power Plant at Rampal".

Every week, eight to 16 ships would transport coal through the Sundarbans, and the coal would be loaded and unloaded at Akram Point. "Excessive sound and lighting will affect the aquatic life. As a result, they would move away," said agriculture and environment expert Prof Anwar Hossain of Bangladesh Agricultural University, while presenting the report yesterday. The National Committee for Saving the Sundarbans and Bangladesh Paribesh Andolon (BAPA) revealed the report findings at a press conference at the Prof Sirajul Islam Auditorium of Dhaka University. Dr William Kleindl, research faculty at Montana State University and The University of Montana, US, and Dr Jon Brodie, professional research fellow at ARC Centre of Excellence for Coral Reef Studies at the James Cook University, Australia, prepared the report free of cost early this year on request from the national committee.

The scientists reviewed Bangladesh government's five documents, including the final report on environmental impact assessment (EIA) of Rampal power plant; consulting services on coal sourcing, transportation and handling; summary of EIA on dredging and feasibility study for dredging in the Passur river from Mongla Port to Rampal. Citing Bangladesh government reports, the review report said over 33 million tonnes of dredge spoil are proposed to be removed from the Bay of Bengal and Passur river to create channel for coal transport to the Rampal project site. In 2015, the World Heritage Committee had requested Bangladesh to conduct a separate EIA for dredging as it found the EIA for Rampal power plant inadequate with respect to the threats posed by dredging. Bangladesh government in August 2016 released two additional documents related to dredging, but those documents are not "independent, comprehensive or scientifically sound, the review report said.

"They do not meet the guidelines of the World Heritage Advice Note on environmental assessment, which includes rigorous environmental assessment early in the decision process," it

said. The scientists in the report said Bangladesh government in one document claims the dredged spoil would be dumped into the upstream of Passur river, but in another document it said it would fill up the low land of Rampal plant area and build a dyke so the spoil does not go to the river again. The scientists, however, observed there are high potentials that the said low land would be flooded as the area is one metre higher than the sea level. Thus, it would pollute the river and underground water. On the other hand, as per the government documents, the 30 million tonnes of sediment removed between Akram Point and the Bay of Bengal would be dumped into the Bay of Bengal. This will put the aquatic ecology, dolphins and the Sundarbans under serious threat, Dr Anwar Hossain said.

Unesco and International Union for Conservation of Nature recommended an effective action plan and emergency response facility to respond to shipping accidents. Bangladesh government claims it has adhered to the recommendations with the creation of National Oil Spill Contingency Plan, but "it does not reflect the reality, said the report. "On January 13 this year, coal ship MV Aichgati sank at the mouth of the Passur river, spilling over 1000 tonnes of coal and hundreds of gallons of fuel oil adjacent to the Sundarbans. The government, however, has made no effort to date to remove the ship or spilled toxic fuels," said Prof Anwar Hossain. The review report says Bangladesh clearly recognises that during operation of the plant, vessel movement through the rivers passing inside the Sundarbans will increase significantly for transporting coal and oil. Trans-shipping 472 to 944 ships annually mean about 145 days of active trans-shipment at Akram Point. This is, however, clear violation of the Bangladesh Environment Conservation Act 1995 and the Forest Act 1927 as the Sundarbans is a protected area where there should be no commercial activities that damage forest and wildlife resources.

"If these activities are allowed to operate at Akram Point, then the EIA has not sufficiently assessed the threats to forest and wildlife resources within the Sundarbans," the report said. India's state-owned National Thermal Power Corporation and Bangladesh Power Development Board are constructing the 1,320 megawatt plant on 1,834 acres of land in Rampal of Bagerhat, 14km north of Sundarbans, the world's largest mangrove forest, also a Unesco world heritage site. Green groups have been protesting its construction near the Sundarbans, which acts as a natural barrier against cyclones. Global environment organisation, Greenpeace, early last month said Rampal power plant would cause at least 6,000 premature deaths and low birth weights of 24,000 babies during its 40-year life due to air pollution from coal burning. Dr Abdul Matin, member secretary of the National Committee for Saving the Sundarbans, said international scientists have so far prepared 12 reports assessing the damages to be caused by the Rampal power project. "We have released nine of those. The government, however, has been rejecting the reports," he said, adding that after the Eid, they would meet the authorities concerned and formally present their scientific findings.

**West Bengal: East Kolkata Wetlands under threat, says expert**

<http://www.india.com/news/agencies/east-kolkata-wetlands-under-threat-says-expert-2207843/>

"The East Kolkata Wetlands (EKW), a Ramsar site that nurtures the world's largest wastewater-fed aqua culture system and is also the city's natural cleansing system, is under threat, said an expert. The sprawling 12,500 hectares (18 lakh cottahs) wetlands also saves the authorities a whopping Rs 5 billion in a year in sewage treatment costs. But one of the major concerns, is the shift from traditional vocations, including fishery, to modern options such as a salaried job, says urban economist Mahalaya Chatterjee. "If the EKW fails to provide the natural treatment service, Kolkata will lose nearly Rs 5 billion a year. The wetland treats waste from the city and has saved on the cost of building and maintaining a conventional treatment plant, said Chatterjee, Director, Centre for Urban Economic Studies, Department of Economics, Calcutta University. She said to retain the low-cost option of sewage treatment the "dominance of sewage-fed fishery is of strategic importance.

"There is an extreme shift from traditional vocations such as fishery, agriculture, animal husbandry to modern businesses, professional work, including salaried jobs. Traditional vocations are becoming less rewarding, Chatterjee said here on Monday at a workshop organised by IIT Kharagpur and Indiana University of Pennsylvania. The wetlands encompass nearly 254 sewage-fed fisheries distributed across the districts of South and North 24 Parganas. It provides about 150 tonnes of fresh vegetables daily as well as some 10,500 tonnes of table fish per year. The latter provides livelihood to about 50,000 people directly and as many again indirectly. The key push factors for vocation switch are obstructed wastewater flow due to encroachment and other reasons, siltation in sewage-fed fish ponds, over-dredging of wastewater canals affecting the natural gradient and the changing signature of bio-chemical components in sewage water, said Chatterjee. She said with increased options of modern vocations, better availability of formal education, increased awareness and formal training (skill), conventional livelihood sources are losing out on the draw. Besides, there is the pull to have increased connectivity to Kolkata via flyover or roads.

If development of the posh satellite township Salt Lake City in the north-eastern fringes of the city reclaimed a part of the wetlands in 1960s, then almost two decades later, construction of Eastern Metropolitan Bypass, which enhanced the connectivity of the area with the city, made the wetland more accessible and made it an attractive site for real estate speculation. The West Bengal government now plans to build a Rs 600-crore flyover, connecting the airport to Science City, which requires construction of some pillars over the wetlands, for which 10-12 cottahs will be used. The state government has promised compensatory digging of a 25-cottah lake in the adjacent area.

**West Bengal: Cyclone Mora: West Bengal fishermen advised not to venture into sea**

<http://zeenews.india.com/world/cyclone-mora-west-bengal-fishermen-advised-not-to-venture-into-sea-2010363.html>

"The National Disaster Management Authority (NDMA) on Tuesday issued an advisory asking the fishermen in West Bengal not to venture into sea for the next 12 hours, as the cyclonic storm Mora has made landfall in Bangladesh and is `very likely to move north-northeastwards` towards the Indian region. The storm hit Bangladesh with winds travelling up to 117 kilometres per hour. The NDMA has also predicted `Isolated` heavy rainfall over Assam, Meghalaya, Mizoram, Manipur, Nagaland and Arunachal Pradesh. ""Cyclone Mora: Wind speed reaching 60-70 kmph gusting to 80 kmph would prevail over Mizoram and Tripura during next 24 hours,"" it said in a tweet. According to IMD forecast, the storm is going to turn into a severe one between Monday and Tuesday and would become a deep depression by May 31.

### **West Bengal: Save River, Save Fish, Save Fisher People**

"On 16th May, 2017 DMF held a start off meeting with the fishing communities of Sandeshkhali-I Block at Nazat. More than 100 representatives from different fishing community hubs of Sandeshkhali-I and Sandeshkhali-II blocks participated. The fishers described their miserable condition due to destruction of fish stock in Vidyadhari river by severe pollution. The fish farmers spoke about damages to their farmed fish due to the ingress of polluted water. The fish vendors complained that there is very little fish to trade. The river based fishers also complained against the restrictions and tortures of the forest department. All the fish workers complained about the apathy of the government in providing them with infrastructure support and social welfare and security benefits like markets, ice-factory, cold box, cycle, fishing jetty, housing, insurance, loans etc.

Many fish workers did not even get the government identity card. The meeting resolved to develop a sound organisational base for the small and traditional fish workers in Sandeshkhali and relentlessly fight for the rights and entitlements of the fishing communities. Next day, 17th May 2017, 15 local activists alongwith DMF leaders Pradip Chatterjee, Gobinda Das, Milan Das, Ambia Hossain and Laxman Das started a boat yatra to spread the call to save river Vidyadhari. The campaign boat, decorated with posters, banners and flags and fitted with a public address system moved from one landing place on the bank of Vidyadhari to another. At each landing place DMF activists made speeches to aware the local fishing and other communities of the need to save the river and organise themselves for struggle. Members of the fishing communities told the campaigners that 20 years back there was so much fish in the river that they could not catch, now there is no fish at all. The income and nutrition status of the villagers living on the banks of Vidyadhari have declined so much so that many people have already migrated to distant places in search of livelihood. Lack of proper nutrition and severe water pollution has brought diseases to the villages. The campaign started from Nazat market at about 9.30am. The campaign boat sailed along Kalinagar Ghat, Masjid Bari Jelepara, Gazikhali, Baunia, Nazat Hat Tala, Malancha

Bachra Ghat, Ghusighata Ghat and Ghusighata Lock Gate at Kulti. The Public Works and Transport in Charge of Minakhan Block Panchayet Mortaja Mollah and vice-president conveyed their whole hearted support to the campaign.

The Chief of Nazat-I Panchayet, Papia Das and Secretary Madhu Babu held a discussion with the campaigners at the Panchayet office and pledged their active support. The Chief and Deputy Chief of Kulti Panchayet Saikhuddin Mollah and Soma Mondal alongwith the Secretary of the Panchayet greeted the campaigners with lemon water and stuck campaign posters as a token of support. The villagers including the fishing community members all along the banks of Vidyadhari were curious to see the campaign boat and activists of DMF. These people, who took the death of the river as a faitaccompli, flocked on the banks with both hope and disbelief. But all of them supported the campaign and the urgent need to make Vidyadhari free of pollution. Follow-up programmes to the action-survey and campaign 1 & 2 have already started.

### **West Bengal: Govt takes up plans for infrastructural development of the Sundarbans**

<http://news.webindia123.com/news/Articles/India/20170517/3109134.html>

"The Sunderbans Affairs department has taken up a slew of projects with the help of Rs 300 crore funds sanctioned by the government to spruce up the infrastructure of Sunderban. The plans include setting up more brick paved roads, culverts and bridges, further developing mangrove plantation and improving agriculture and fisheries activities. The objective is to spruce up the infrastructure as well as improving the livelihood of the local people by imparting skill development programme. Apart from improving road connectivity including setting up cement concrete roads and bituminous roads, the authorities are working on skill development for the local dwellers to improve their livelihood.

### **West Bengal: Government to soon introduce new fishing method 'cage culture'**

<http://economictimes.indiatimes.com/news/economy/agriculture/west-bengal-government-to-soon-introduce-new-fishing-method-cage-culture/articleshow/58696879.cms>

"Taking a cue from the pisciculture practices in Norway, Thailand, Japan and the Philippines, West Bengal government is all set to introduce a new method of deep-sea pisciculture commonly known as cage culture. As the name suggests, the practice consists of culturing fish inside big floating cages in the middle of the sea. The project is at present in the pilot stage. Two 4.5 metre-diameter cages made out of GI pipes and netlon mesh have been set up 2 km off the coast of Mandarmani at the northern end of the Bay of Bengal. The cages are covered with nets to prevent seabirds from feeding on the fish.

They are tied down with buoys to provide stability. Each cage is going to last eight to ten years. Hatchlings for the pilot project will be released in September, which will grow to the right size – 1 to 1.5 kg – within six months. Mostly, bhukti and pomfret will be reared in these cages as these

fishes in high demand and are expensive as well. Such deep-sea culture in large numbers will bring down prices of these fishes and make them more affordable. This will also help to bring down the pressure on the lakes and inland hatcheries. Scientists are also researching the viability of pearl culture in cages.

**West Bengal: Ham radio to check if fishermen get weather updates on sea**

<http://www.india.com/news/agencies/ham-radio-to-check-if-fishermen-get-weather-updates-on-sea-2123232/>

"Ham radio operators will help check whether fishermen along West Bengal coast receive weather updates via radio broadcast in the deep seas, an operator said on Thursday. A joint inspection for measuring the signal strength of All India Radio broadcast in the deep seas will be held on May 14 and 15 by the Coast Guard, AIR, state fisheries department, fishermen's association and ham radio operators. "Around a year back, 39 fishermen went missing in the deep sea. The reason was they didn't hear the weather report on radio. We will investigate whether they are receiving these important transmissions, Ambarish Nag Biswas of the West Bengal Radio Club (Amateur Club) said. Through ham radio one can talk across cities, around the world, or even into space, all without the internet or cell phones. Ham radio operators or hams can swing into action in times of disaster, when regular communications channels fail, and assist disaster management agencies. Biswas said the hams will also educate the fishermen on using the Very High Frequency (VHF) radio. "Although every fishing vessel has a VHF Radio, due to lack of knowledge they are not maintained properly, he said.

**West Bengal: Eco fish tourism to enable tourists to catch fish and have it cooked too**

<http://news.webindia123.com/news/Articles/India/20170426/3099233.html>

"The Fisheries Department of the West Bengal Government is all set to introduce a new concept eco fish tourism. As the name implies, it would combine relishing the fish as well as the environment a mouth-watering mlange to look forward to. State Fisheries Development Corporation Department of the Fisheries Department is going to look after the projects. A pilot project on eco fish tourism was completed at Nalban in Salt Lake, Kolkata about a month back. It proved to be a hit, which prompted the department to make the grand plans. Bengalis are famous as fish-lovers and the concept is meant to latch on to this culinary fact. Some of the details are as under.

A two-day-one-night package for a family of four would cost Rs 4,000 to Rs 4,500, depending on the facilities availed of and the tourist spot. Individuals can also avail of eco fish tourism packages, in which case the cost would obviously be less. Coaches run by the Fisheries Department would transport the tourists from their homes to the spots they have booked. The bus journey would include breakfast and lunch, which would of course include fish. On reaching the

place, battery-run vehicles of the department would provide a short tour of the area. On the second day would come the 'fish' part of 'eco fish tourism'. The tourists would be taken to the water bodies managed by the Fisheries Department. They can draw the nets along with the fishermen to pull in the fish, and can then indulge in the quiet joy of angling. The water bodies would be kept stocked with adequate fish.

The fishes caught by the tourists would be cooked and served to them. They would not be allowed to take any fish home, though. However, if they do want to carry any home, there is provision for that too fishes can be bought, which would then be packed in ice to keep them fresh along the journey back. At the end of the tour, luxury bases of the Fisheries Department would drop the tourists back to their homes. The projects are going to come up at five places to begin with at Henry Island in the Fraserganj region and at Chandanpiri, located between Bakkhali and Fraserganj, both in the Sunderbans, at Guskara and Memari in Purba Bardhaman district, and in Digha (in a few of the place's numerous fish farms). The middle of May has been decided as the time for launching this new concept of eco fish tourism.

### **West Bengal: 70 green groups slam power plants near Sundarbans**

<http://www.thedailystar.net/backpage/70-green-groups-slam-power-plants-near-sundarbans-1394653>

"More than 70 environmental groups have warned the construction of power plants near the Sundarbans in Bangladesh, a mangrove forest that is home to the Bengal tiger, would damage the environment and affect the livelihoods of millions. The coal-fired 1,320-megawatt Rampal power plant will be built on the edge of the Sundarbans forest, a Unesco World Heritage site. A smaller plant is planned a short distance away. ""There is no doubt that the proposed Rampal and Orion power plants will have serious and irreversible impact on the ecology of the Sundarbans,"" the groups from countries including Sweden, South Africa and Japan said in an open letter to the World Heritage Committee dated April 20. ""The planned coal power plants threaten the health and livelihoods of millions of people."" Signatories to the letter include the Climate Action Network, Timberwatch, Global Forest Coalition and Friends of the Earth International. The salt-tolerant mangrove forest of tidal waterways, mudflats and small islands is known for its wide variety of bird and animal species.

The Rampal plant will directly impact the livelihoods of about half a million people - including fishermen, farmers and forest dwellers - and make millions more vulnerable to natural disasters, according to lobby group the National Committee to Protect Oil, Gas, Mineral Resources, Power and Ports. Dhaka plans to set up 25 coal-fired power plants by 2022 in order to meet rising electricity demand. The government has indicated it is unlikely to abandon its push to build more coal-fired power plants, despite growing opposition from local people and environmentalists. Some of these protests have turned violent. Earlier this year, one person was killed and about a dozen injured in a protest against a \$2.4-billion Chinese-backed coal-fired plant southeast of the

capital Dhaka. Last year, at least four people died when police opened fire at protesters against the plant. Bangladesh Prime Minister Sheikh Hasina, responding to criticism from former US Vice President Al Gore at the World Economic Forum this year, said Bangladesh desperately needs more power, and that the planned coal plants are far from the Sundarbans. Clashes between villagers and governments keen to build infrastructure to spur growth are likely to become more common in South Asia as demand for scarce land rises, analysts say. Environmentalists say the risks that fossil fuel plants pose to nature and the livelihoods of people are not being assessed. "Women are particularly at risk, as displacement is linked to increases in gender violence, including falling victim to trafficking and prostitution," the non-profit groups said in their letter.

### **West Bengal: Fisheries dept set to utilise rain water to augment fish production**

<http://www.millenniumpost.in/kolkata/fisheries-dept-set-to-utilise-rain-water-to-augment-fish-production-236970>

"In a unique initiative, the state Fisheries department is all set to utilise rain water to augment fish production in the drought-prone areas of Bankura, Purulia and West Midnapore through the formation of watersheds. The department has found that in various parts of Bankura, Purulia, West Midnapore and in some other districts, a considerable amount of rain water is wasted. If the rain water is harnessed by small dams, it can be used for pisciculture, cultivation and domestic use during the lean season. After conducting a thorough study on the matter, the department has also found that water stored in dams can also help in reaching the ground water through bottom percolation in the sub-surface. Watershed development may play a crucial role in uplifting the rural economy by increasing fish production. Watersheds can also majorly contribute to the agricultural production, afforestation, water, soil and land management in the drought-prone areas. According to a senior official of the fisheries department, the state government has given a great emphasis on the development of watersheds in large scale so that fish farming can get a major boost especially in those areas which are not economically viable for fish farming. A watershed can be defined as a land that contributes water to a particular site where fish farming can be developed. Watersheds are remade in such a manner so that all the highest points in the area are connected. A watershed provides natural environmental unit for planning a developmental initiative.

According to sources, watershed mapping has been done in the districts like Purulia and Bankura and West Midnapore to delineate watershed boundaries as well as to suggest the suitable sites for check dams to harvest water. The department has already created a digital map of waterbodies in the area which will help the department in many ways including the improvement of decision making process and managing e-governance in this sector. The department has chalked out a detailed plan to make Bengal self-sufficient in fish production and also to increase export. The department has a plan to export fishes to other states and abroad in large scale. The government

had adopted a method called, People Participatory Programme (PPP) for the sustainable development of fisheries. The purpose of PPP is to develop an operational method to increase participation of local fishermen in fish production, storage and distribution. State fisheries department has taken up comprehensive development schemes to enhance fishery infrastructure in the state. Cooperative fish farming has also been given utmost importance. Various schemes have already been introduced which will engage more unemployed rural youth. It also aims to assist the local fishermen to organise Self Help Groups and cooperatives which will increase their income. They were given access to the existing fishing ponds and fishery infrastructure which will boost up rural economy.

### **Fisheries dept in West Bengal, India, set to utilise rain water to augment fish production**

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### **West Bengal: How Howrah's once rich wetlands are disappearing**

<http://www.nyoooz.com/news/kolkata/781480/how-howrahs-once-rich-wetlands-are-disappearing>

"Now, this stretch of land is unrecognisable, as the wetlands are slowly disappearing to make way for urban construction. Four canals - Hurhura, Sheb, Suti and Shaorapota - flowed into the wetlands and played a key role in the creation of the vital Howrah-Hooghly drainage system. The wetlands also provided rich croplands. He went to land revenue office, District Magistrate's office and Panchayet office to register his appeal to protect this land. The fallout of this is that all four canals are now lost and the wetlands have all but vanished. TMC leader Tapan Dutta tried to save this 950 acre wetland. KOLKATA: A little over a decade ago, a large expanse of wetlands lay alongside the Bali-Chamrail Road west of Jaypur crossing in Howrah district. A little over a decade ago, a large expanse of wetlands lay alongside the Bali-Chamrail Road west of Jaypur crossing in Howrah district. Now, this stretch of land is unrecognisable, as the wetlands are slowly disappearing to make way for urban construction. Four canals - Hurhura, Sheb, Suti and Shaorapota - flowed into the wetlands and played a key role in the creation of the vital Howrah-Hooghly drainage system. The wetlands also provided rich croplands.

Local shopkeeper Subal Mistry said, ""The land was 12 feet under the National Highway. So the water was there almost throughout the year. Farmers got the crop twice in a year. ""But over the years, corporate construction companies bought all the lands from farmers. There are numerous construction and development projects going on. The fallout of this is that all four canals are now lost and the wetlands have all but vanished. TMC leader Tapan Dutta tried to save this 950 acre wetland. He went to land revenue office, District Magistrate's office and Panchayet office to register his appeal to protect this land. But all his efforts went in vain. In 2011, Dutta was murdered. The accused were acquitted by the lower court.L...

### **West Bengal: The cat that stole their fish**

<http://www.livemint.com/Leisure/XQmex7SuivTCwrYO9P0UtM/The-cat-that-stole-their-fish.html>

"Despite suffering losses in livestock attacks by Fishing cats, villagers have joined forces with conservationists to save West Bengal's endangered state animal. Strains of a folk theatre tune float through the darkness as we drive into Kamargaria village in Howrah district's Amta Block II in West Bengal. It is late in the night but members of the local village club are there to welcome us. I am accompanying a group of wildlife conservationists working on the endangered Fishing cat. The elusive, nocturnal creature that was notified as West Bengal's state animal in 2012 is known locally by different names baghrul, gobagha, adhabagha and machbagha. There are few pictures of it in the wild and studies on its ecology, distribution, population estimates and conservation status within or outside protected areas, including national parks and sanctuaries, are few and far between.

"It resembles the panther, and is the size of the average street dog, with black patches on its body and long whiskers. It growls like a tiger; its eyes shine like torchlight and it's not afraid of humans, says Anil Maity, a member of the Kamargaria local club. "It's not afraid when we try to chase it away. Instead, it growls and charges at us, says Maity, adding, "The cat comes to steal fish from our ponds, especially Catla fish. We have to take turns to keep vigil. An endangered species under Schedule I of the Wildlife (Protection) Act, 1972, the Fishing cat has long been poached for its skin and meat. The oldest record of its presence in and around Kolkata dates back to 1891. There is no population estimate of the species, which makes it difficult to gauge how many of them survive in the wild. Now conservationists are roping in villagers into protection committees, trying to increase awareness and infuse a sense of pride that the state animal lives in their midst. "The Fishing cat is one of the 15 felid species that is found in India and, like other smaller cat species, is poorly understood, says wildlife biologist Tiasa Adhya, member of the Fishing Cat Working Group and the Cat Specialist Group of the International Union for Conservation of Nature (IUCN).

Adhya has been conducting research on the Fishing cat since 2010 and now leads a survey with local villagers to estimate the population of this species in the Howrah and Hooghly districts of West Bengal and in Chilika Lake in Odisha. There has been no concerted effort so far to assess the Fishing cat's current distribution or the threats to it. Its preferred habitats are the reed bedskhori bonthat surround ponds in villages like Kamargaria. The tall reed here is khori (*Saccharum narenga*) but the Fishing cat also lives among other types of reeds found in these parts of rural Bengalhogla (*Typha elephantina* and *Typha domingensis*), nol (*Phragmites vallatoria*) and khagra (*Saccharum spontaneum*). "The Fishing cat is a marshland species and is only found where there is sufficient reed cover around water bodies. According to our observation, the Fishing cat usually does not exist where the land is devoid of nol, hogla, khori or khagra even if the place has a large pond, says Adhya. Incidentally, Howrah gets its name from haor, which means marshy wetland. The term haor is still used in neighbouring Bangladesh (Haor basin) to denote a wetland ecosystem. Howrah district is sandwiched between the Rupnarayan and Damodar rivers.

The villages here, surrounded by ponds and bamboo, coconut and banana groves, go back 500 years. The khori, which grows in abundance in private waterlogged lands that are unsuitable for crops, is the mainstay of the local economy. The tall grass is harvested, dried and used in betel-leaf (paan) cultivation. The dried reed is also used to construct rectangular shaded structures known as paan boraj, a type of greenhouse where betel vines are grown in rows. Even though fishing is a source of livelihood, the villagers have coexisted with wildlife for centuries, despite attacks on both fish stock and livestock. Apart from the Fishing cat, the khori is also home to otters, jungle cats, the small Indian civet, palm civet, golden jackal and monitor lizard. As we visited other villages in Amta Block II, we heard more stories about the Fishing cat. Till a few years ago, reports of poaching and poisoning were frequent, with villagers and tribal hunters unaware of the animal's endangered status. "Last year, poachers were caught with dead Fishing cats from Munsirhat, after which a directive from the Howrah zilla parishad notified village panchayats to form individual Fishing cat protection committees. Also, sustained efforts were made to sensitize people through road shows, posters and door-to-door distribution of handbills for the conservation of the Fishing cat, says Adhya.

In Sarada village, part of the Kushberia gram panchayat, Joydeb Pradhan and Sudhin Adhikari have formed a Fishing cat protection committee under the Sarada Prasad Tirtha Janakalyan Samiti, a non-governmental organization (NGO). For six years, this NGO has been trying to ensure the Fishing cat is not harmed; it has recently started a compensation scheme for villagers who have lost livestock. Earlier this year, Pradhan was chosen by the Sanctuary Nature Foundation, Mumbai, as one of 12 grass-roots conservation leaders for their inaugural Mud on Boots projecta programme to empower and support grass-roots conservationists in India. Pradhan and his team received a grant of Rs3 lakh, to be used over two years (2017 and 2018) for on-ground conservation work. Adhya and her team say persistent campaigning and conservation work have resulted in the formation of four Fishing cat protection committees at the gram panchayat level and nearly 15 committees at the mouza (administrative block) level. The Ghosh Bari in Kalbansh village (also in Amta Block II) has seen better days. A part of the old mansion overlooking a large pond lies in ruins. Ashim Ghosh, the owner, greets us in an adjacent building, a lovely old house with a courtyard and wells. It's in the vicinity of Ghosh Bari, where Fishing cats can often be spotted at night.

The team has been tracking Fishing cats by placing camera traps at various locations in and around his estate. Ghosh narrates how Fishing cats stole around 50 grass carps from his neighbour's pond over two months, leading to considerable losses. Despite such losses, however, Amta Block II's residents have a soft corner for the cat. "We suffer losses but where else will the poor animal go to look for food? says pisciculturist Lakhi Kanto Bhattacharya (a.k.a. Daku Babu) of Narit village. It seems the campaign to save Fishing cats has managed to infuse a sense of pride in villagers. In March, they appealed to the West Bengal Biodiversity Board to consider declaring 15 mouzas under the Kushberia, Jhamtia, Tajpur and Gajipur gram panchayats, an area

of around 30 sq. km, as a biodiversity heritage site under the Indian Biodiversity Act, 2002. But while there is now support for conservation in Amta Block II, the story is very different in other wetland areas. In nearby Hooghly district, vast stretches of marshland, spanning hundreds of hectares, along the Durgapur expressway are being lost rapidly to industrial use.

Popularly known as the Dankuni wetlands, they are home to many endangered birds and mammals, including the Fishing cat. Since 2013, a Kolkata-based environmental NGO, People United for Better Living in Calcutta (PUBLIC), has been fighting in the Calcutta high court and the National Green Tribunal to get this area notified under guidelines issued by the National Wetland Conservation Programme and the Wetlands (Conservation and Management) Rules, 2010, of the Union environment ministry. According to PUBLIC's legal representative, illegal dumping is still going on despite court orders. Conservationists rue that ecologically unbalanced land policies and land uses, attacks on species due to economic losses and ritual hunts by indigenous tribes are pushing the Fishing cat and other marshland-dependent species to extinction. Can they turn the tide?

### **West Bengal: Maach (fish) and chaash (agriculture) brought us to Sundarbans**

<https://ruralindiaonline.org/articles/maach-and-chaash-brought-us-to-sundarbans/>

"The year was 1949. Jiban Krishna Poddar, 14 years old, fled from his home in Barisal district to West Bengal, along with his parents and grandmother. The Noakhali riots of 1946 had sparked off waves of migration which would continue for many years. Two years after their flight, the family made their way to the Sundarbans. Now over 80 and seated in the verandah of his home on a rainy evening, he reminisces about the journey that brought him to Krishnadaspur village in Patharpratima block, the place he calls home: "There was violence, so we had to leave. My mother, Usha Rani Poddar, packed all our belongings into 14 bags. We reached Khulna city [then in East Bengal] by ship. A train took us to Benapole. We hid our money and ornaments in clothes and belongings. Jiban recalls that the family was taken to a refugee camp in Nadia district of West Bengal, where they lived for 11 months with more than 20,000 others.

The refugees were asked to settle in Dandakaranya (the forested Bastar region of central India), the Andaman islands or the Sundarbans in West Bengal. "My father, Sarat Chandra Poddar, chose the Sundarbans," Jiban says. "He wanted to own and farm land. Maach and chaash (Bengali for fish and agriculture) were the two main attractions. He felt that the Dandakaranya and Andamans were uninhabited jungles where it would have been difficult to live. Jiban's

family was among the 150 families that left from Howrah for the Sundarbans by ship. They came to Mathurapur block where the Indian government asked them to clear the jungles for agriculture. “When we began farming, it was difficult. The area was 60 per cent water and 40 per cent jungle. The drinking water was not clean and many people died of cholera. The doctor would come once in 15 days.

There was a famine and we had to suffer great hunger. Jiban's father got a job in a government office where his task was to operate a hand fan for other employees. His mother kept buffaloes and sold milk and eggs. The family was eventually allotted 10 bighas of land (one bigha is around one-third of an acre in West Bengal) in Krishnadaspur village, where they began cultivating rice. After saving some money, they bought more land and built a house in the village, which now has a population of 2,653 (2011 Census). Jiban lives with his wife and 11 children, and retired as postmaster of the village post office around 2010. Priyaranjan Das, 64, who retired from the village post office as a peon, also traces his origins to East Bengal. He arrived from Noakhali with his parents in the early 1950s, when he was two years old. “We would boil stems and eat them since there was no food. There would be severe outbreaks of cholera, causing many people to leave. But we stayed on, he remembers. Many other families came to the Sundarbans from different parts of West Bengal, the Chota Nagpur Plateau and Odisha after 1765, when the East India Company acquired the civil administration in Bengal. Amites Mukhopadhyay (*Living with Disasters: Communities and Development in the Indian Sundarbans*) and Annu Jalais (*People and Tigers: An Anthropological Study of the Sundarbans of West Bengal, India*) write that the colonial rulers, interested in increasing their revenues, hired labourers from different parts of the subcontinent to reclaim and cultivate land. Robi Mondal of the Tagore Society for Rural Development, a non-governmental organisation that works in the Sundarbans, says: “The floods and famine in Medinipur, the 1947 Partition of Bengal and the 1971 Bangladesh war of independence caused a further exodus of people, and many of them landed up in Sundarbans. Another round of migration took place around 1905, when Scottish businessman Daniel Hamilton was working towards rural reconstruction through a cooperative movement in the islands of Gosaba block. He leased out land to labourers for cultivation.

Many of the descendants of the migrants still live in Gosaba, and remember his contribution to the development of the Sundarbans. Eighty-year-old Revati Singh, who lives in Jotirampur village, is originally from Ranchi. His grandfather, Anandmai Singh, came to Gosaba in 1907, during Hamilton's cooperative movement. “He arrived in Canning block by tram. They would probably have walked from there to Gosaba, which is currently more than 12 hours on foot. Later, Hamilton built small boat launches to transport them. Revati has heard that the population at the time was small, and there were recurring attacks by tigers and crocodiles, and no clean drinking water. Has the situation changed? “Fewer tigers attack now, he says.

“There were no jobs then, and even now getting work is a problem. I used to cultivate rice but stopped because the river would overflow into the fields. Revati's three sons have informal jobs.

Lakhan Sardar, whose grandfather Bhagal Sardar also migrated from Ranchi to be a part of the cooperative movement, remembers that on Hamilton's invitation, renowned poet and writer Rabindranath Tagore visited Gosaba in 1932. A large section of the population of the Sundarbans is from the Medinipur area of West Bengal. Frequent flood and famine in Medinipur drove inhabitants to the Sundarbans to work as labourers or cultivators of land. Jyotirmoy Mondal from Jotirampur village recalls that his grandparents walked from Medinipur to the Sundarbans before the onset of Hamilton's cooperative movement.

“Grandfather became a night watchman and eventually died of fever. My grandmother, Digambari Mondal, would guard people's buffaloes for a living, cultivate rice and sell ghee. Mohammed Molhor Sheikh cuts wood for a living in Arampur village in Gosaba. His great grandfather came with two brothers from Medinipur to the Sundarbans, 150 years ago. “We heard stories of how they would chase tigers with iron rods flaming with fire. We also heard how they would frequently suffer flood and famine and the destruction of their rice fields. Another wave of migration from Medinipur occurred during the severe 1943 famine in West Bengal. Seventy-one-year-old Haripriya Kar's husband's family migrated to Gosaba during this period. The village Jotirampur, where she lives, is named after Jotiram Kar, her father-in-law. “Jotiram and Khetrāmohan were brothers who came from Medinipur to Gosaba, bringing 27 families with them. These families cleared the surrounding forests and settled down, she says.

Haripriya's house is cast in darkness as she speaks. The electricity was cut a few hours ago. Livelihood options here are few, it is difficult to get medical help, and connectivity with roads and transport is a huge hurdle. Still, the descendants of the original settlers of the Sundarbans do not have it as hard as their ancestors did. The struggle for a better life continues, even as they recollect the hardships and deprivations of the past.

### **West Bengal: Truckers strike prompts Bengal government to monitor fish prices**

<http://timesofindia.indiatimes.com/city/kolkata/truckers-strike-prompts-bengal-government-to-monitor-fish-prices/articleshow/58009124.cms>

"With the truckers strike going on, the state fisheries department has started keeping constant tab on prices of fish. Fisheries minister Chandranath Sinha held a meeting with fisheries department officials to discuss on the matter. ""We are constantly monitoring and keeping tab at the markets and taking steps to check fish prices,"" said the minister. Fisheries department officials said that though there are no official report of fish prices increasing, the government is taking up initiative to check prices. ""More fish will be sold from the refrigerated fish vending vans run by the State Fisheries Development Corporation. Fisheries department officials are keeping check on the whole sale and retail fish price in the markets,"" an official said. ""The State Fisheries Development Corporation (SFDC) and the fish cooperatives will directly intervene in the market to control prices. We will be increasing sell in the eight corporation markets,"" said SFDC managing director Soumyajit Das, adding that more fish vending vehicles

will be introduced to bring in and sell more fish through government initiative with the objective is to check prices and ensure normal supply.

**West Bengal: Dakshinbanga Matsyajibi Forum (DMF) letter to Honourable Minister for Environment, Forest and Climate Change, India**

"The coastal fishing communities along with concerned citizens are shocked and alarmed to see the news carried by Indian Express on 22nd March 2017 that reads "Govt plans to ease coastal rules, allow land reclamation for commercial use. The news states that the Government is going to replace the Coastal Regulation Zone (CRZ) Notification of 2011 by a new Notification named Marine and Coastal Regulation Zone (MCRZ) which is going to effect the following relaxations of restrictions on constructions and activities in the coastal regulation zone –

- \* Remove the ban on reclamation of land in coastal areas for commercial or entertainment purposes;
- \* Allow tourism activities even in ecologically sensitive areas along the shores;
- \* Allow setting up of fish-processing units;
- \* Make allowance for facilities meant for patrolling and vigilance activities of coastal or marine police; and
- \* Remove the necessity of obtaining environmental clearances for constructing housing units, and related infrastructure, for local fishermen community.

Sir, suffice it to mention that the above relaxations, if effected, will further destroy our coast and its natural resources including the marine fish resources. CRZ Notification has already earned the distinction of being one of the most violated, if not the most violated, statute of our country due to the lack of political will of the government to enforce it and book its violators. Large scale reckless constructions and activities have already lacerated our coastline with huge encroachments, uncontrollable erosions and rampant pollution.

It is most unfortunate that when the Government, as custodian of the natural resources of our country, should have taken stringent and effective measures to protect our coast, we hear that relaxations are being contemplated to enhance its further destruction. The small-scale coastal fishing communities are by far the largest primary stakeholders and natural custodians of our coastal and marine natural resources. Any statutory initiative, which may impact the life and livelihood of these communities, should be discussed with these communities and concerned citizens before it is proposed and should be adopted only after taking the informed consent of the affected communities. We are yet to witness it.

We take this opportunity to remind you that in the year 2008 the government unilaterally tried to replace the CRZ 1991 Notification by CMZ Notification without consulting the coastal fishing communities. The CMZ Notification would further open up our coast to investment and plunder of natural resources. The fishing communities vehemently protested. Rashtriyo Macchimar Adhikar Yatra (National Campaign for the Rights of the Fish Workers) led by National Fishworkers' Forum (NFF) unleashed a deluge of protest all over the Indian coast from Gujarat to West Bengal. CMZ was withdrawn. The GoI initiated consultations with the fishing communities in each of the 10 maritime states of the country. NFF participated in the

consultation organized by MoEF to prepare an updated CRZ notification. Finally, on 6th January 2011, MoEF published the CRZ 2011 Notification.

The then Minister in charge of MoEF Shri Jairam Ramesh, in a press statement issued by him on the occasion, promised to take immediate measures to enact a comprehensive Coastal Regulation Zone Act instead of the CRZ notification which has been a weak instrument. But no progress was made in this regard. In view of the above we would request you to – Stop any effort to replace and / or amend the CRZ 2011 Notification without consulting the coastal fishing communities; Take immediate and effective measures to identify all violations of the CRZ Notification and book the violators; Strengthen CRZ Notification with more comprehensive and stringent provisions to protect coastal and marine natural resources and the livelihood of the small scale fishing communities dependent on those resources in consultation with the fishing communities and concerned citizens; Take immediate measures to enact a comprehensive Coastal Zone Regulation Act on the basis of the consultations with the fishing communities and concerned citizens.

#### **West Bengal: CMFRI's new centre at Digha to focus on Hilsa**

<http://timesofindia.indiatimes.com/home/environment/flora-fauna/cmfris-new-centre-at-digha-to-focus-on-hilsa/articleshow/57917608.cms>

"Indian grey hornbills, the birds that nest in cervices of trees have shown a remarkable change in their nesting behavior in the city. This year the birds have built their nests a much earlier. According to a bird expert Ajay Gadikar, who has been studying on hornbills for last many years, it is the first time in last few years that the birds have started nesting so early. The birds usually make nests with the beginning of summers. ""I have observed six nests of hornbills. Of them, five were occupied in second week of March. The reason behind this change in their nesting behaviour is still not clear, it might have occurred due to change in environmental condition,"" Gadikar said.

#### **West Bengal: Use of banned net killing fish resources**

<http://www.thedailystar.net/backpage/use-banned-net-killing-fish-resources-1382863>

"To stroll along the Pankhali Ferry Ghat riverbank via Chalna Bazar in Khulna's Dacope upazila is to watch fishers busy, dawn to dusk, as they haul fine-mesh triangular nets in the hope of collecting juvenile shrimp. A livelihood for hundreds, the illegal activity continues unabated, threatening the biodiversity and ecological balance of Sundarbans waterways including the Shibsha River. "Large numbers of juvenile crustaceans and fish fry of various species are destroyed every day, says environmentalist Anawarul Kadir. "Such fishing activities impede

healthy fish reproduction and spoil the ecosystem. While it continues, one can only be anxious about our environmental future. The use of fine-mesh current nets is banned in order to protect fish stocks. But such government regulation is routinely ignored. According to Chandon Shil, a fisheries and marine technology student from Khulna University, current net fishing occurs throughout the protected mangrove forest, where unscrupulous forest department officials turn a blind eye; while some police personnel allow such catch to be sold in public markets.

This time of year is the breeding season for many fish and crustacean species, with the rivers of the Sundarbans attracting large schools of fish for mating. But the natural fish nursery is disturbed, not only by the harvesting of juvenile shrimp but when fishers discard the other species that fall foul of their nets. Dr Dilip Kumar Datta, an environmental science professor from Khulna University estimates that to collect a single juvenile shrimp involves destroying on average around 200 fish fry and over 1,000 other, often microscopic, life forms upon which fish rely for food. “Whole species are at risk of entirely disappearing from the local environment through unplanned fishing, he says. According to one police officer of Chalna police station who did not wish to be identified, the tidal zones of canals, channels and shoals across the Shela, Pashur and Balasher Rivers of the eastern Sundarbans as well as the Shibsha River to the west are regularly littered with hundreds of thousands of nets as people of all ages engage in illegal fishing for juvenile shrimp. Local NGO Rupantar reports about six lakh people, mostly women and children, partake in the activity. The zonal commander of the Coast Guard's west zone, Mehadi Masud, meanwhile, says fishers and fish traders hide their motor boats in narrow channels and inlets, making them difficult to find. But, he says, around 80 crore taka worth of current nets have been seized in the course of the coast guard's daily drive against illegal fishing. “There are so many people involved in this activity, says Khulna district's fisheries officer, Profullah Kumar Sarker, “It's tough to stop them. But we are working towards increasing community awareness of the problem.

### **West Bengal: Bengal set to export fish to Dubai, China**

<http://indianexpress.com/article/cities/kolkata/bengal-set-to-export-fish-to-dubai-china-4588494/>

"The state government is set to start exporting fish abroad, beginning with Dubai, Japan and China, in the next few weeks. Officials said the fisheries department has received an order worth around Rs 900 crore to export fish to these countries. “This is for the first time that the fisheries department has taken up such a unique initiative. It will not only create a market for Bengal's fish in foreign countries but also help improve the financial condition of the state's fishermen, said an official. Officials said they have begun setting up processing units with modern facilities at Nalban and Henry Island to meet the demand. The fish to be exported will be processed and packed in these units. “The State Fisheries Development Corporation has increased fish

production by a record margin. Pisciculture is being carried out in most ponds and water bodies, said an official.

### **West Bengal: 5 fishermen abducted from Sundarbans**

<http://businessnews24bd.com/5-fishermen-abducted-from-sundarbans/>

"Fishermen were again abducted by forest robbers from the Sundarbans. At least five fishermen were abducted by a forest robber gang named Robiul Bahini from the river Mathabhanga, goalkhali area in Shyamnagar upazila of Satkhira district adjacent to the Sundarbans at around 6pm on Wednesday. Three person's identification was learnt and the three others acquaintance could not be ascertained still. The three abducted fishermen are-Abdus Salam Sardar,35, son of late Abdul Sardar, Ramjan Ali, 40, son of late Azimuddin, resident of village Parshekhali in Shyamnagar upazila and Niranjan Mondol of village Keoratala in the same upazila. One of the fishermen who managed to escape from the spot told this correspondent that the fishermen went to Goalkhali area with a view to fishing on Wednesday morning. All on a sudden, a forest gang named "Robiul Bahini attacked on them and abducted at least five fishermen. Mostafizur Rahman, officer-in-charge (OC) of Shyamnagar police station said, we have heard the news of abduction of fishermen, but we have not received any complain from the guardians of the abducted persons.

### **West Bengal: Prepare Sunderbans CRZ map in three months: NGT**

<http://timesofindia.indiatimes.com/city/kolkata/prepare-sunderbans-crz-map-in-three-mnths-ngt/articleshow/57781941.cms>

"The national green tribunal's (NGT) eastern zone bench on Wednesday directed the West Bengal State coastal zone management authority (WBSCZMA) to prepare the coastal regulation zone map for the Sunderbans within three months. While the Sunderbans came under the CRZ in 1999, no map has been prepared for its management as yet. For years now, the state government and Centre have been blaming each other for the delay. Recently, the Ministry of Environment, Forest and Climate Change handed over all details to the WBSCZMA and the bench of Justice S P Wangdi and professor P C Mishra granted it three months to prepare the map. The green bench, that took up the Sunderbans issue suo motu after TOI's report on degradation of the mangroves, also expressed displeasure at the manner in which large and medium-sized tourist vessels are plying in the eco-sensitive zone without any checks. Environment activist Subhas Datta, who is amicus curiae in the matter, pointed out that some tourist vessels ply on the Sunderbans without bothering about emissions or disposal of solid waste. In April, 2016, the West Bengal pollution control board (WBPCB) had reported M V Paramahansa dumps untreated waste in the waters. The NGT directed the inland waterways department to find out whether such vessels cause any noise, air or water pollution. Steps for

solid waste management are also to be chalked out. The bench also asked the WBPCB why these vessels should not be asked to operate only after seeking consent from the pollution watchdog.

### **West Bengal: Government to curb baby hilsa fishing through awareness campaigns**

<http://www.millenniumpost.in/kolkata/government-to-curb-baby-hilsa-fishing-through-awareness-campaigns-220512>

"Hilsa is probably one such fish that every citizen of Bengal is fond of and thus, the conservation of the same has to be taken care of. Following this sentiment, the Bengal government will campaign against catching baby hilsa which is commonly known as khoka ilish. The state Fisheries department recently decided to initiate a campaign among fishermen, buyers and sellers to refrain them from catching baby hilsa, weighing less than 500 gram. But earlier, the government had some other plan. The department had decided to take strong steps against offenders including buyers who would get baby hilsa from the markets. The things turned around when state headquarters – Nabanna instructed the department to soften the approach. It was decided that only harsh legal steps alone cannot render the ultimate solution. Moreover, this might increase the problem by leaps and bounds. The Fisheries department, which was planning to start a process that would introduce strong legal provisions under CrPC and the IPC against catchers, sellers and buyers of hilsa weighing less than 500 gram, thus, retreated from its position. "At this time, we are not thinking about such strong legal steps. It can be done via vigorous campaigning against catching of baby hilsa. We'll create consensus among the fishermen communities that this thing will harm their trade," said Chandranath Sinha, state Fisheries minister.

"We are planning to organise workshops with fishermen, spread knowledge among the communities about the harmful effects of catching baby hilsas. And we believe that we will be able to express our thoughts and convey the message to them. This is the only way to bring out the ultimate solution of this problem," the minister added while talking to the Millennium Post. However, it may be mentioned, that the Fisheries department earlier had decided to approach the state Home department to start the process of bringing provisions under the CrPC and the IPC in this regard. At present, there is a regulation by which, police along with the state Fisheries department, can seize nets, rods and other fishing instruments from offending fishermen. The fish that the accused catches can also be seized. But the police or the department do not have the power to arrest any fishermen for this offence.

Meanwhile, fishermen cannot catch hilsas of any size during pre and post monsoon seasons. The experts say, in this particular time, the fish migrates from the Bay of Bengal to the river Hooghly. Hilsas lay eggs in this period of time. The experts and the fishermen define baby hilsa as less than 9 inches in length or weighing less than 500 gram. A full grown fish may weigh up to 2.5 kg. A fish normally gets its full size in two years and lives upto four years. However, traders feel that a strong law is necessary to restrict the catching of baby hilsa. "Only a strong

law can combat this problem. I am not hopeful about the outcome of a strong campaign against catching baby hilsas," said Atul Chandra Das, President, Hilsa Importers' Association. As this is the pre-monsoon season, hilsas of the river Hooghly is not available in the markets of Kolkata and the city fish traders are importing the fish from Myanmar. The pre-monsoon season in Myanmar will start from April. Till then, the citizens of Kolkata will have to taste the quintessential fish made of the Myanmar species of hilsa.

### **West Bengal: Review map of East Kolkata Wetlands, says Ramsar report**

<http://www.india.com/news/agencies/review-map-of-east-kolkata-wetlands-says-ramsar-report-1932015/>

"The wise-use plan recommended by a Ramsar official to manage the ecologically fragile East Kolkata Wetlands (EKW) calls for a review of the map of the 12,500 hectare site and the land-use changes since 2002, the year when it was included in the Ramsar list. Following the visit of an official of the Ramsar secretariat, the West Bengal government has decided to come up with a "wise use plan on how to best manage the wetlands in the future. An international treaty for the conservation and sustainable use of wetlands is called the Ramsar Convention or the Convention on Wetlands. The treaty draws its name from the city of Ramsar in Iran, where the convention was signed in 1971. The recommendations for the wise-use plan were compiled following a two-day workshop earlier this month.

Through presentations, discussions and break-out sessions, the participants agreed there was a need to take a holistic approach to managing the site with the participation of all the relevant stakeholders. This would involve clearly marking the boundary and developing a wise-use plan for the site. According to the report uploaded on the Ramsar site by Lew Young, Ramsar Senior Advisor for Asia & Oceania, the plan would include "a review of the map of the site when it was designated in 2002 to estimate the actual area of wetlands at that time and to estimate the land-use changes since. The other recommendations include: "A census of the people within the site, an updated account of the present ecology and socio-economic condition of the East Kolkata Wetlands Ramsar Site, a description of the threats and challenges being faced by the site and the people living within it.

The report also stresses on "a clear set of actions on how to address the threats and challenges with a timetable of when the action would be taken and the budget required and where the funds would come from. The Ramsar secretariat carries out the day-to-day coordination of the Ramsar Convention, which is an international treaty for the conservation and sustainable use of wetlands. It is named after the city of Ramsar in Iran, where the Convention was signed in 1971. The next step will be the formation of a broad-based group stakeholder group who would develop the wise-use plan and to oversee its implementation, said Young. The workshop was organised in association with Kolkata Commons Centre for Interdisciplinary Research and Analytics (CIRA). The Ramsar Convention defines wise-use of wetlands as "the maintenance of their ecological

character, achieved through the implementation of ecosystem approaches, within the context of sustainable development. Wise-use can be seen as the conservation and sustainable use of wetlands and all the services they provide, for the benefit of people and nature.

The EKW located on the eastern fringes of Kolkata forms one of the largest assemblages of sewage-fed fish ponds. It nurtures the world's largest wastewater-fed aqua culture system. Each day, the wetland receives some 1,000 million litres of sewage which is passed through a series of canals, fish-pond and agricultural (mainly paddy) fields that make up the East Kolkata Wetlands, before discharging it into the Bay of Bengal after some 3-4 weeks. On August 19, 2002, the EKW was included in the Ramsar list of 'Wetlands of International Importance'. The wetlands encompass nearly 254 sewage-fed fisheries distributed across the districts of South and North 24-Parganas. This natural waste water treatment system developed by the local community with their traditional wisdom saves the city the cost of having to build and maintain a conventional treatment plant. In addition, the wetland also provides livelihood for around 25,000 families of fishermen, produces over 10,000 tonnes of fish per year along with rice and vegetables for the people of Kolkata.

#### **West Bengal: Film: Trawlers push small fisherfolk out of business**

<http://www.downtoearth.org.in/video/traulers-push-small-fisherfolk-out-of-business-57364>

"Bottom trawling has spelt doom for small-scale fishermen in Bengal's East Midnapore district. Faced with a bleak future due to reduced fish catch, traditional fisherfolk is experimenting with alternate livelihood options.

#### **West Bengal: For Bengal, live fish & livelier bargain**

<http://timesofindia.indiatimes.com/city/kolkata/for-bengal-live-fish-livelier-bargain/articleshow/57352525.cms>

"This is sure to come as good news for the quintessential 'maachhe-bhaate' Bengali household. A bigger supply of live fish, which would be easier on the wallet too, is set to hit city markets and its adjoining areas soon. In almost all markets, the price of live fish is more than double than that of frozen fish. While live climbing perch (koi) sells for around Rs 300 to Rs 350kg, the iced up version of the same delicacy comes for Rs 150-170 per kg. Similarly, the prices of bigger live fish like rohu, katla and others are almost Rs 60 to Rs 70 more than the 'cold' variety. The State Fisheries Development Corporation (SFDC) is on way to procure a total of 10 special containers that will be able to carry live fish for almost two days. Officials said once the markets get more supply of live fish, prices will automatically come down and be almost on a par with frozen fish. SFDC officials said they have received the funds nod for nearly Rs 1crore under the Centre's Rashtriya Krishi Vikas Yojana to procure 10 special one-tonne containers that can carry about 600 kg of live fish for about 30 to 40 hours.

This would be the first-of-its-kind initiative in the country to carry live fish. At present, fish from the coastal areas of Digha, Fra serganj and Henry Island is imported in refrigerated containers. "The price of live fish is always higher (about Rs 60 to Rs 80 more) than refrigerated fish. The demand for live fish among Bengalis is always higher. These special fish containers will be able to carry about 500-600 kg of live fish for a stretch of 30 to 40 hours, depending on the amount and size of fish being carried," an official of State Fisheries Development Corporation (SFDC) said. SFDC had earlier sent a proposal to Rashtriya Krishi Vikas Yojana, which is under the ministry of agriculture.

"They have approved the scheme and would give funding to buy the fish containers. Each container would cost around Rs 11 lakh. Five containers would be procured in the first phase. Tenders would be floated for the same," said another official. Officials said the fish containers, looking very similar to oil tankers, will have one tonne (1,000 kg) water-storing capacity. An oxygen cylinder will be fixed inside the container to supply oxygen for a stretch of around 30 hours. There would be a lid on top of the container and it would be like a moving aquarium. The oxygen supply technique would be similar like the aerator filling up oxygen inside an aquarium and the water temperature would also be regulated. "Different fish varieties have different oxygen-consuming levels. It would be planned out as to what sizes of fish and how much quantity of fish could be best suitable to be carried in such containers," an official said.

#### **West Bengal: West Bengal government to install emergency alert system in fishing trawlers**

[http://economictimes.indiatimes.com/articleshow/57167653.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst](http://economictimes.indiatimes.com/articleshow/57167653.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst)

"To protect the lives of fishermen while sailing in the sea during some natural calamity, West Bengal fisheries department has decided to install an emergency alert system in all the fishing trawlers. Though the distress alarm technology has been used in some of the trawlers, the government now plans to set up the device in all the fishing trawlers in the state. Through the emergency alert system the fishermen can draw the attention of the Coast Guard if there is any danger in the sea or in case of a natural calamity. The fishermen have to press a distress alarm and the message will be automatically delivered to the Coast Guard officials and they would be able to take prompt action to help the fishermen.

The government has already kicked off the work for installation of alarm system in fishing trawlers and boats. The department is also conducting awareness drive among the fishermen to check the misuse of distress alarm. If the distress alarms are misused, it would be difficult for the rescue team to track down the fishing boat which is actually in distress. The department is also contemplating on imposing a fine on the owners of the trawlers if they are found misusing the distress alarm. A fine may be imposed on the owners of the fishing trawlers in case of misuse. The state government may also cancel the license of the fishing trawlers if there are repeated incidents of misuse of the distress alarm by a particular trawler in addition to the cash penalty. In

few occasions, it has been noticed that fishermen press the distress alarm without a valid reason.

### **West Bengal: Protecting Sundarbans from increasing salinity**

<http://www.thefinancialexpress-bd.com/2017/02/11/61588/Protecting-Sundarbans-from-increasing-salinity>

"The rising salinity in the Sundarbans, the largest mangrove forest in the world, could prove more devastating in the coming years than what is feared until now by most experts. The factors responsible for increase in salinity in the Sundarbans are entirely man-made. Unless conscious efforts are there to reverse the process, the forest would continue to lose its characteristics due to the rising salinity. Already, enough damage has been caused. The number of sweet water-based fish and plant species that once thrived in the Sundarbans has already dwindled. And those are being replaced by the saline water-based kinds. The factors that have been identified so far for the decline of the Sundarbans include upstream diversion of water from the common rivers by India and saline water-fed shrimp culture in coastal districts where the forest is located.

The effect of climate change has only aggravated the problem. Environmentalists and relevant others from Bangladesh, India and leading international organizations discussed the issue of rising salinity in the Sundarbans at a workshop, held in the Indian city of Kolkata last week. The workshop was told that sweet water now covered only 41 per cent of the coastal areas and it might come further down to 17 per cent by 2050, causing untold damage to flora and fauna in the areas concerned. There is no denying that the rise in the sea-level due to global warming has been causing saline water to intrude deep into coastal areas of the country. What is happening is a part of the global phenomenon. Though there are international efforts to stop, if not reverse, the process, it could be a long-drawn procedure.

A number of developed countries that are largely responsible for global pollution are not willing to take their fair share of tasks necessary to remedy the environmental problems. But, at least, Bangladesh and India can do a lot to stave off the aggression of saline water in the Sundarbans. Since a part of the Sundarbans covers a part of Paschimbongo, India has genuine reasons to be concerned about the increased salinity problem. The two countries should make efforts to augment downstream flow of the common rivers to help keep saline waters at bay. The other problem - saline water-based shrimp culture -- should be addressed by the government keeping in view its importance in the export trade. An unregulated saline-water shrimp culture has caused damage not only to a large area of arable land but also to other flora and fauna in the coastal districts. Many fish farmers have already realized their mistake and are now trying to bring their land back to old shape. The government should introduce a regulatory regime for saline water-based shrimp culture to stop widespread damage to the Sundarbans' environment.

Lately, the government is also being blamed for taking a few decisions that are allegedly detrimental to the health of the forest, a UNESCO-declared global heritage site. Allowing ships to use Sundarbans waters for transshipments and establishment of a coal-based power plant are two controversial decisions. All concerned, the policymakers in particular, have little scope to view the issues concerning the Sundarbans through narrow lens. Its importance in Bangladesh's economy, climate and well-being is immense. So, it deserves special attention and priority in national policy-making.

### **West Bengal: Jadavpur University scientists developing a model to predict Hilsa catch**

<http://www.hindustantimes.com/kolkata/jadavpur-university-scientists-developing-a-model-to-predict-hilsa-catch/story-qIPqg5SG2vapfTQQiD8mxJ.html>

"Marine scientists from Jadavpur University in Kolkata are developing a model to predict how much Hilsa would reach the Bengali platter every year. "The model will not only tell us how much Hilsa would be available in the rivers and estuaries, but also the sustainable fishing limit. The quantity could vary from year to year depending on various factors such as availability of food (plankton), turbidity, fresh water flow, wind direction, lunar phase and sea surface temperature among others, said Sugata Hazra, director of School of Oceanographic Studies at Jadavpur University, who is leading the project. Hilsa is often reckoned as the queen of fishes by Bengalis, most of whom are fanatic about its aroma and taste. The declining availability of hilsa is of great concern to almost all Bengalis in the country that peaks every year during the monsoons. The obsession is such that chief minister Mamata Banerjee was flooded with requests to persuade Bangladesh Prime Minister Sheikh Hasina to lift the ban on hilsa exports to India that Dhaka imposed in July 2012.

Work on the model is progressing and the JU team hopes to come up with the predictive model sometime later this year. "We are studying several models including 'Ecopath with Ecosim' – a path-breaking model developed by US agency National Oceanic and Atmospheric Administration – which helps scientists to accurately understand complex marine ecosystems. We are trying to come up with a single model which would allow us to predict month-wise and if possible daily availability of hilsa population in the fishing zone, he added. Both the catch of hilsa and the size of the fishes had been dwindling over the years. Experts have pointed out various reasons behind this ranging from siltation of rivers, unbridled fishing of juvenile hilsa, pollution, loss of habitat among others. Incidentally before the Farakka barrage was built on the Ganged, hilsa was found in Hardwar too.

According to the government estimates the hilsa catch has come down from 33,102 tonnes in 2000-01 to 9,269 tonnes in 2014-15, a decline of close to 72% percent. Hyderabad-based Indian National Center for Ocean Information Services (INCOIS) under the ministry of earth sciences

sends out advisories to governments and fishermen about availability and congregation of fish shoals in the sea. The JU-model would help scientists to send similar advisories for hilsa to INCOIS and the state government. Once the model is prepared scientists would feed it with data such as availability of algae, freshwater discharge rate, rainfall, wind direction, lunar period, turbidity, depth of rivers and temperature among other information. This, in turn, would throw up data on fish availability and how much could be netted sustainably. "If can go for sustainable fishing with bans and restrictions during some months during the year and in the spawning areas, the hilsa population would recover within the next few years, said Hazra. The Bangladesh government has already put in place stringent legislation to conserve the Hilsa population. Dozens of fishermen are arrested for fishing baby hisla (below 500 gms) every year. West Bengal is also planning to bring in similar legislation which would help authorities to arrest anyone buying or selling baby hilsa.

### **West Bengal: India sees dwindling hilsha catch after Farraka**

<http://en.prothom-alo.com/environment/news/138775/India-sees-dwindling-hilsha-catch-after-Farraka>

"Concerned at the decline in availability of hilsha, the queen of fishes in Banladesh and India's West Bengal, scientists from Jadavpur University in Kolkata are developing a model to predict how much hilsa would reach the Bengali platter every year, reports The Hindustan Times. It said the obsession with Hilsha is such that chief minister Mamata Banerjee was flooded with requests to persuade Bangladesh prime minister Sheikh Hasina to lift the ban on hilsa exports to India that Dhaka imposed in July 2012. Work on the model is progressing and the JU team hopes to come up with the predictive model sometime later this year, according to the report. "The model will not only tell us how much Hilsa would be available in the rivers and estuaries, but also the sustainable fishing limit, Sugata Hazra, director of School of Oceanographic Studies at JU, who leads the project, was quoted to have said.

""The quantity could vary from year to year depending on various factors such as availability of food (plankton), turbidity, fresh water flow, wind direction, lunar phase and sea surface temperature among others."" In the West Benghal, the declining availability of hilsa is of great concern. According to the government estimates the hilsa catch has come down from 33,102 tonnes in 2000-01 to 9,269 tonnes in 2014-15, a decline of close to 72 per cent. Also, the report said, the size of the fishes has been dwindling over the years. Experts have reportedly pointed out various reasons behind this ranging from siltation of rivers, unbridled fishing of juvenile hilsa, pollution, loss of habitat among others. Incidentally, the newspaper said, before the Farakka barrage was built on the Ganges, hilsa was found in Hardwar too. "We're trying to come up with a single model which would allow us to predict month-wise and if possible daily availability of hilsa population in the fishing zone, the researcher was quoted to have said. The

JU-model would help scientists to send similar advisories about availability and congregation of fish shoals in the sea to the state government.

“If can go for sustainable fishing with bans and restrictions during some months during the year and in the spawning areas, the hilsa population would recover within the next few years, The Hindustan Times quoted Hazra as saying. It mentioned that the Bangladesh government has already put in place stringent legislation to conserve the Hilsa population. West Bengal is also planning to bring in similar legislation which would help authorities to arrest anyone buying or selling baby hilsa, the report added.

### **West Bengal: Grim days ahead for Sundarbans**

<http://www.thedailystar.net/backpage/grim-days-ahead-sundarbans-1356718>

"Availability of river water in the country's coastal area, now at 41 percent, could drop to 17 percent by 2050 due to climate change and human activities, researchers have said. This is a great threat to the Sundarbans, said speakers at a programme titled “Vulnerability of Sundarbans in a changing climate. The programme was organised at Ramkrishna Mission Auditorium in Kolkata for understanding the physical and economic effects of climate change on the Sundarbans. Rising salinity in soil and water would change not only the vegetation pattern of the Sundarbans but also reduce the availability of economically important fish. It would be a threat to the livelihoods of people living around the mangrove forest. At least 17 research papers were presented at the programme on Friday and Saturday. Environmental economist Susmita Dasgupta in her presentation said that the river water area could get as low as 17.1 percent by 2050. World Fish, Bangladesh, conducted a study on five commercially important fish, including Parshey, Dateyna, Vetki, Tengra and Poa, and found that if 47,000 to 89,000 fish were available in low-saline water, the number dropped to 15,000 to 29,000 in high-saline water. This suggested that the number of fish would reduce if salinity increased, said Golam Mustafa of World Fish, presenting the research.

Researchers there said the availability of slightly saline river water for irrigation would decrease to 11 percent by 2050, which is now around 30 percent. River water in Barguna, Bhola, Jhalakathi, Khulna, and Patuakhali would not be useable for irrigation. And the Bhola irrigation project would be abandoned as the water of the Tentulia would cross the salinity threshold, according to the presentation on salinity in the costal zone. Almost 98 percent river water in Khulna and 97 percent river water in Bhola would exceed the salinity level. Barisal, Pirojpur, and Bagerhat would face the worst crisis of freshwater. Freshwater zone would reduce by 85, 81, and 71 percent respectively in these three districts, the experts said. Prabhat Kumar Mishra, secretary of the Department of Fisheries of West Bengal, and Debal Ray, chief conservator of forest, Department of Forests, West Bengal, and Lia Carol Sieghart, environment programme leader, World Bank, also spoke in the inauguration programme while Prof Emeritus Ainun

Nishat summed up the discussion. Experts said the Sundarbans is of international importance and its conservation is mandated by international conventions and treaties. They said climate change, in addition to other natural and human factors, would have significant implications for the present and future management of the Sundarbans.

**West Bengal: In Sunderbans, no one cares about villagers who go missing in animal attacks**

<http://www.hindustantimes.com/india-news/in-sunderbans-no-one-cares-about-villagers-who-go-missing-in-animal-attacks/story-qBfi3zcR9OnU0EZXNgGNyJ.html>

"It was with bleary eyes that Lakshmi Dolui, 38, recalled how her 16-year-old son, Ratan, had to abandon his studies and take up a wage labourer's job to keep the home fires burning. Her husband Putibar – the sole breadwinner of the family – was killed by a tiger on December 3, 2016, when the 50-year-old man entered the Sunderban forests to catch fish. "My husband didn't have the forest department's permission. We didn't lodge a complaint with the police or inform the forest department for fear of harassment. We never received any compensation, said Lakshmi, wiping her tears as she stood on the edge of the river embankment of Kumirmari Island – one of the remotest villages in the delta. Consequently, the government remains unaware of his death.

The other members of his fishing team failed to even recover Putibar's body because the beast had dragged it deep into the mangrove. Dozens of villagers disappear in similar circumstances every year in the Sunderbans, without their deaths being brought to the notice of the authorities. They remain alive on paper. The Sunderbans is the world's largest delta, formed by three great rivers – the Ganga, Brahmaputra and Meghna – and spread over India and Bangladesh. The Indian portion of the Sunderbans encompasses an area of 9,600 sq km, comprising 102 islands. Of these, 54 islands – including Kumirmari, which derives its name from the word Kumir (Bengali term for crocodile) – have human settlements. The rest are thick mangrove forests – home to the Royal Bengal Tiger and some of the world's deadliest snakes. They accommodate a national park, a tiger reserve and three wildlife sanctuaries. The rivers and creeks that crisscross the delta are infested with crocodiles and sharks.

"Thousands of villagers from these islands enter the forest to fish, catch crabs and collect honey every year. However, a majority do not have permits issued by the forest department. When these illegal entrants are killed by tigers and crocodiles, the families rarely inform the authorities out of fear, said a senior official of the Sunderbans Tiger Reserve. In the winter session, the Lok Sabha was told that only six people were killed by tigers in the Sunderbans through 2013-14. In 2014-15, the death toll was quoted as 10. An estimate provided by the forest department claims that 410 people were attacked by tigers between 1985 and 2010, leaving just 95 survivors. Shark and crocodile attacks are also common. Around 12 people were killed by crocodiles between 1999 and 2009. These attacks usually occur when women and children from villages in the

region wade through waist and chest-deep water along the banks of the rivers to catch tiger shrimp seeds.

“However, this is just a fraction of the actual death toll. Of the 70,000-80,000 people who enter the forest to fish, only around 13,000-15,000 hold valid permits and documents. Most of the illegal fishermen do not report tiger attacks, even when somebody is killed. This gives an idea on how many deaths go unreported, said Pradip Chatterjee, president of the Dakshin Banga Matsyajibi Samity (South Bengal Fisherfolk's Forum). Around 7,500 sq km of the Sunderbans falling in Indian territory is open for fishing, leaving just 2,100 sq km of the core area unavailable. However, villagers do not restrict themselves to permitted zones. “Unbridled fishing over the decades has dwindled the fish, crab and shrimp population in the buffer zones. Villagers often enter the core zone illegally in search of a good catch, getting killed in the process.

As these casualties are not reported, the government remains in the dark, said Nirranjan Modol, head of the Kumirmari panchayat. Besides this, there are honey collectors – locally known as Moulis – who enter the forest both legally and illegally between March and June every year, when the mangroves flower and attract bees. Woodcutters also enter the forest in violation of the rules. “It is mostly fishermen (75%) who get killed by tigers, followed by honey collectors (17%), woodcutters (6%) and forest staffers (2%). Honey collectors are very vulnerable because they follow the bees deep into tiger territory, without any inkling of what lies ahead, said PK Vyas, chief wildlife warden of West Bengal. The villagers' woes, however, do not end here. There have been several instances of locals getting killed or mauled by tigers even if they remain within the permitted zones. Complications occur when the bodies are not found. “My husband was killed by a tiger a few years ago. This was despite him having a valid permit, and being well within the buffer area – where fishing is allowed.

I informed the police and the forest department, but didn't receive any compensation because the body could not be recovered. The tiger had dragged the body deep into the forest. The authorities told me that I would have to wait for a few years more, said a disconsolate Astami Mondol, who now has to raise her school-going son all by herself. Man-animal conflicts are an age-old problem in the Sunderbans, and one finds a widow in nearly every family that resides in the villages dotting the fringes of the forest. “This has given root to the concept of bidhoba grams (widow villages) in the Sunderbans. These villages are located on the fringes of the Sunderban Tiger Reserve, from where people used to enter the forest regularly in the years gone by. Some families in these villages have more than one widow, said Jayanta Naskar, MLA of Goasaba constituency. There have also been instances of tigers and crocodiles entering the villages here, though they are not known to attack them. The beasts are not killed either. However, crocodile attacks are common in rivers near the villages, where they often come to lay eggs.

## **West Bengal: Realty chokes Kolkata wetlands**

<http://indiaclimatedialogue.net/2017/02/01/realty-chokes-kolkata-wetlands/>

"On the eve of World Wetlands Day, here's a look at the state of the east Kolkata wetlands, a unique ecosystem that serves as the mega city's waste disposal and sewage treatment network, but is being rapidly filled up due to an insatiable demand for real estate. The wetlands on the eastern fringe of Kolkata may soon be history if more and more buildings keep coming up there, a recent study has reiterated. This will destroy the world's only ecosystem that provides climate-friendly sewage treatment and waste disposal to a metropolis. It is ironic that there is little concern about this destruction on the eve of observing World Wetlands Day on February 2. When the east Kolkata wetlands was declared a Ramsar site of international importance in 2002, as much as 88% of the land in Bhagabanpur mouza (a rural administrative area) was partly or completely under water for most of the year, supporting a thriving fishing community. By 2016, when a detailed land survey was conducted, only 14% remained.

This rapid shrinkage is different only in degree in the other 21 villages that comprise the 125-square km east Kolkata wetlands. The authors of the yet unpublished study – called Not a Single Sign Post: The Shifting Priority in Land Use within the Protected Wetlands to the East of Kolkata – carried out a comprehensive survey of land in Bhagabanpur and compared it with data collected in 2002, when the wetlands were declared a Ramsar site, and in 2006, when a law to protect it came into force and a management authority was set up. Alarming situation The findings are alarming. The conversion of lowlands and ponds has been accompanied by an exponential rise in population in Bhagabanpur, from 3,126 according to the 2001 Census to 11,777 in the 2011 Census. Interviews conducted among residents during the study showed that most are recent migrants who provide cheap labour to the city, unlike the traditional fishing and farming communities.

The rapid conversion of land use has hobbled the fisheries and vegetable farms in the area and led to a crash in the local economy, resulting in distress among people who have been living here for long. "The fisheries flourished when I was younger. I brought up a large family based only on fishing. It's no longer possible today, says 62-year-old Robin Mandal, a resident of Kharki village, just across the road from Bhagabanpur. "The bheries are vanishing. Bheries, a unique feature of the Kolkata wetlands, are shallow fishponds fed by naturally treated wastewater rich in algae, which allows for low-cost fish cultivation. These wetlands have the world's largest network of wastewater channels powered by gravity that use domestic sewage from Kolkata as a nutrient source to grow fish, vegetables and rice. Besides supplying as much as 25% of the city's fish and vegetables, this part-human, part-natural ecosystem treats the sewage in a scientific and eco-friendly manner.

“It is tragic that such a system that so perfectly dovetails with the survival and sustenance of the city of Kolkata is abused rather than preserved, Dhruva Dasgupta, co-author of the study, told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “It seems that the wetlands are seen as just any other real estate in waiting. The study was conducted by Society for Creative Opportunities and Participatory Ecosystems (SCOPE), a non-profit that works with rural communities in the area. Toothless authority Although the East Kolkata Wetlands Management Authority (EKWMA), set up in 2006, forbids any change in land use, it does not have the teeth to enforce compliance.

The conversion is hastened because land records maintained by multiple government agencies are often at odds with one another, making it easier for land sharks to find loopholes. “The Bhagabanpur study is an eye-opener to everybody about how much support the real estate lobby draws silently out of the powers that be, Dhruvajyoti Ghosh, a UN Global 500 laureate and crusader for the Kolkata wetlands, told [indiaclimatedialogue.net](http://indiaclimatedialogue.net). “And this is in spite of the wetlands being a protected area as directed by a High Court order, a state legislation and a national commitment to an international agreement (Ramsar Convention). The wetlands stretch over 12,500 hectares and are spread over 32 revenue villages in the districts of North and South 24 Parganas in West Bengal, which includes two municipal bodies and seven panchayats (rural governance bodies).

The study says that the population dependent on these wetlands numbers roughly 118,000, according to conservative estimates. The 2017 SCOPE study points out that these wetlands save municipal authorities huge costs in terms of a sewage treatment plant that would have been otherwise necessary for an ever-increasing population that currently stands at 4.6 million in the core city of Kolkata and more than 12 million in the extended metropolitan area. “This wetland ecosystem is maintained and operated by the traditional knowledge of a community of fishermen who sustain their livelihood through them, the study says. “The wetlands thus contribute to a stable urban fringe and the people of Kolkata are the most important beneficiaries of this phenomenon. There is very little awareness of the usefulness of the wetlands and the hunger for land often outvotes the sensible approach of preserving it.

“For an expanding metropolis like Kolkata, land is always at a premium, an official of the Kolkata Municipal Corporation said on condition of anonymity. “Saving the wetlands requires strong political will, which seems to be missing. Emailed queries to EKWMA remained unanswered. Ecological subsidy Ghosh, who calls this symbiosis of Kolkata and its eastern wetlands an “ecological subsidy, is of the opinion that society at large has to look beyond economic rationale alone to intelligently manage this unique resource. “No economic analysis can save the Maidan or Brigade Parade Ground (a large open space in the middle of Kolkata known as the city's lungs) if the option is to go for real estate conversion, he says. “Preserving natural resources and ecosystem services can never be a function of economic valuation. The way a mother saves her child, Kolkata residents should save the east Kolkata wetlands.

## **West Bengal: Kolkata: the city that eats fish reared on sewage**

"It all started as an accident, if you believe the story that the fishermen of the east Kolkata wetlands tell. Around a century ago, a cultivator named Bidu Sarkar accidentally allowed untreated wastewater from Kolkata's sewage pipes into his fish pond. Realising what had happened, Sarkar expected disaster. Instead of killing his fish, however, the water doubled his yields. When fishermen from the surrounding area came to find out more, they discovered that the combination of sewage in the water and sunshine broke down the effluent and allowed plankton, which fish feed on, to grow exponentially. Soon thousands of fish farmers had set up bheris, or fishponds, across 12,500 hectares on the eastern fringes of the city.

Today, according to Dr Partha Prathim Chakrabarti, principal scientist at the Central Institute of Freshwater Aquaculture, the east Kolkata wetlands provide a living for some 50,000 cultivators and fish traders, most of them small-time private entrepreneurs who earn an income rearing 10,000 tonnes of wastewater-fed fish a year. Despite occasional media scares about eating sewage-fed fish, Kolkata continues to depend on the practice for its food. "Sewage which is of domestic origin is usually free from hazardous chemicals harmful to human health, says Dr Chakrabarti. "However, microbial populations contained in sewage need to be checked regularly. Kolkata's municipality, according to government data (pdf), has the capacity to treat only 24% of the city's 706m litres of wastewater produced each day. The rest comes here, where – unregulated – the city's fishermen recycle it in their ponds. "They just dump the water and we just use it, says Sasi Dalal Ghosh, the owner of Nida Nagar Agro & Fisheries, one of the biggest companies producing fish in the area.

"Thanks to private companies, the Kolkata municipal corporation has not had to spend anything to get its water treated, plus the people of Kolkata get to eat cheap fish, much cheaper than in Delhi or Mumbai, as using wastewater reduces our production costs. If the mere idea of the city's fish swimming around in the city's excrement doesn't put you off your dinner, the smell at the wetlands will. Some workers cover their faces with cloths, others can be seen scrubbing themselves with sweet-smelling soaps after they finish a day's shift. But, though they may inspire disgust, these ponds have fed at least three generations of Kolkata's citizens and the government has publicly stated that it expects such initiatives to help meet the country's fish demand for years to come.

Threats to urban aquaculture India is the world's second largest farmed fish producing country in the world, after China, with an annual output of more than 10m metric tonnes of fish. Since the 1950s, thanks to a variety of government-backed schemes, the sector has increased 11-fold, and now contributes to 85% of India's total fish production. The Kolkata model of rearing sewage-fed fish is used in a number of Indian cities, including Nagpur, Chennai and Bhopal. In fact, Kolkata's urban fish farming has become so famous as a potential solution for sustainable food production that some farmers, like Ghosh, now even work as consultants for PwC as foreign

governments seek advice on how to set up similar aquaculture plants. “They use this technique now in Bangladesh, Pakistan, Myanmar, Thailand and even Germany and France, says Ghosh, delightedly. Some of the fishermen who work at the east Kolkata wetlands are now third- or fourth-generation fish farmers, having inherited bheris from their grandfathers and fathers.

Additional migrant workers from the impoverished nearby states of Uttar Pradesh and Bihar have been pulled in to meet the growing city's burgeoning demand for fish, a staple in Bengali cuisine. But competition for wastewater for the aquaculture and agriculture sectors, among others, is putting pressure on the industry. Ghosh explains that, with less water to share between the fish farmers, each bheri is getting shallower: “For good [fish] production, you need depth of around 5ft. Now the water is barely 2ft. Another key challenge for the fish farmers is land availability. Industrialists trying to capitalise on cheap real estate just a few kilometres from the city have started encroaching on the wetlands, forcing fish farmers out. Despite the Ramsar convention, an intergovernmental treaty to conserve and promote the sustainable use of wetlands, a number of illegal constructions have appeared across the area. With an entire city's fish supply and sewage system, as well as thousands of jobs at stake, Kolkata's municipal corporation is under increasing pressure to start regulating. In the meantime, Ghosh and his fellow fish farmers will continue with the day's tasks. “If we stop working, how will Kolkata get fish? he asks.

### **West Bengal: Increasing Salinity in a Changing Climate Likely to Alter Sundarban's Ecosystem**

<http://www.worldbank.org/en/news/feature/2017/01/22/increasing-salinity-in-a-changing-climate-likely-to-alter-sundarbans-ecosystem>

"? The salinity of river water and soil in Bangladesh's low-lying southwest coastal region is increasing over time, and will aggravate further with sea-level rise in a changing climate. ? The increase in salinity will reduce the Sunderban's key species Sundri, the forest's highest-value timber species, and increase saline-tolerant species Gewa, Baen and Goran. The progressive water salinization will change the availability of many freshwater fish species, thereby depriving the poor of their main source of protein, and adversely impacting the incomes of families. The poor populations that will lose freshwater fish species are about six times greater in number than those who will be gaining brackish fish species. Increased salinity in a changing climate will hit coastal Bangladesh hard Southwest coastal region of Bangladesh is already facing increasing salinization, especially between October and May.

Laboratory analyses of water and soil samples show an increase of salinity over time in the region. Climate change induced sea-level rise will further intensify the problem of river and soil salinization. Recent World Bank studies predict the progressive salinization of water and soil in a changing climate will significantly impact the UNESCO World Heritage Site Sundarban's fragile ecosystem and affect the surrounding poor population. Increased water salinity will alter the aquatic ecosystem and the mangrove forest, along with significant shortages of water for

drinking and irrigation in the southwest coastal area, while soil salinization is likely to lead to a significant decline in the output of high-yielding-variety rice. Quantifying the impacts of increasing salinity from climate change on Sundarbans Climate change, in addition to natural factors and human activity induced consequences, will have significant implications for the present and future management of the Sundarban as well as the forest-dependent livelihoods of the surrounding poor inhabitants.

To assess impacts of salinization on mangrove species and the fish habitats, recent World Bank studies used state-of-the-art salinity profiles of the region, high-resolution vegetation maps and information on availability of fish. Changing pattern of vegetation in Sunderban: The study predicts significant losses for Sundri and Passur-Kankra, along with gains for Gewa, Baen and Goran. The stock of Sundri, the most valuable timber species in Sundarban, has been declining over time due to natural causes such as ‘top-dying-disease’ which has killed millions of trees since 1970. Climate change is likely to worsen this depletion of Sundri stock through increased salinity. The analysis compared the different salinity tolerance ranges for 14 varying dominant mangrove species detected in 2013 satellite images of Sundarban with the expected salinity for alternative scenarios of climate change by 2050. Changing Pattern of availability of aquatic species: Increasing salinity is likely to adversely affect the reproductive cycle and capacity, extent of suitable spawning area, and the feeding/ breeding/ longitudinal migration of freshwater fish species.

This will lead to striking loss of habitat of freshwater fish in the western part of the Sunderban, along with modest gains in expansion of brackish water (saltier than freshwater but not as salty as sea water). The analysis looked into the salinity tolerance range of 83 fish species typically found in the region with expected location-specific water salinity resulting from climate change by 2050. What it means for the inhabitants of the Sundarbans The 2010 poverty map of Bangladesh identifies a high incidence of poverty in the region near Sundarbans, where 9.9 million poor lives, including 5.9 million living in extreme poverty. As these people largely rely on forest and fishery-based livelihoods, and fish supply a significant portion of their dietary protein, climate change induced salinity will impact the poor, in a number of ways: Loss of freshwater fish species will adversely impact the income and purchasing power of poor households dependent on fishing.

Given that low-value wild fish is the main source of animal protein in the diet, loss of fish species may significantly impact the nutrition of the rural poor. The population of the poor which will experience loss of fish species is six times greater than that population which will experience a gain in fish species. As felling of trees and collection of firewood are prohibited in the Sundarban Reserve Forest, depletion of Sundri will only affect the value of standing timber stocks, and will not impact livelihood of the poor. Change in mangrove species in favor of Baen, Gewa and Goran will increase the potential for honey production from Sundarban; this production will also increase the risk of human-wildlife conflicts.

**West Bengal and Odisha: Coastal security awareness on agenda – Bike rally to connect with fishermen**

<http://indiatoday.intoday.in/story/coastal-security-awareness-bike-rally-connect-fishermen/1/862899.html>

"With a special bike rally on safety awareness among fishermen, Coast Guard has began a unique connecting proposition with those living on the coastal areas of West Bengal and Odisha. The Coast Guard Regional Headquarters of North East in collaboration with Hero MotoCorp flagged off a team of 20 bikers who will be covering around 1200 km. In the next six days they will be passing by the fishermen colonies at Contai, Digha, Dhamra, Paradip, Chandipur and Haldia. The rally started from Kolkata and will cover all the coastal districts of West Bengal and Odisha. Air Chief Marshal (retired) Arup Raha graced the event saying the Coast Guard's efforts to save lives at sea is worthy of praise . FISHERMEN ARE EYES AND EARS OF COAST GUARD With the participation of state fisheries department and medical officers from Navy, the rally is being conducted for the fishermen who have been the eyes and ears for the coastal guards. It is an initiative taken by the Coastal Guard to aware the fishermen regarding the threats and safety that they need to keep in mind.

"We will go and meet all the fishermen and will be providing them with medical facilities, as in the long run fishermen are the eyes and ears for providing information to us. So we teach them how to take care of themselves and the possibilities of different types of threats," said Commander of the Coast Guard North East Region Inspector General KR Nautiyal. MEDICAL CAMP FOR FISHERMEN During this period a medical camp will be set up for the fishermen and community interaction programme will also take place. "Where ever we will be stopping, we are going to do community interaction programme with the fishermen and will be providing medical camp, after six days we will come back to Kolkata," he said.

**West Bengal: Its numbers dwindling, Hilsa may get legal protection**

<http://indianexpress.com/article/cities/kolkata/west-bengal-its-numbers-dwindling-hilsa-may-get-legal-protection-4479250/>

"After decades of migration barriers, over-fishing and pollution that have pushed the Hilsa fish to the brink of extinction, the state is planning to include provisions under penal codes that will allow the arrest of anyone buying and selling the variety weighing less than 500gms (also called juveniles). State fisheries minister Chandranath Sinha said, "The proposal was floated at a meeting of the fisheries department and we are speaking to the home department regarding the same to bring about provisions in CrpC and IPC. Moreover, we are taking all possible steps to ensure that the population of Hilsa is protected. With each monsoon, schools of the migratory Hilsa or Indian Shad (*Tenulosa ilisha*) swim in from the Bay of Bengal to the network of rivers for breeding. This migration has traditionally sustained the Hilsa fishery.

With the introduction of the provisions, Hilsa will become the first fish variety in the country to get legal protection. Government officials pointed out that presently, the department of fisheries has no punitive powers and the sale of small Hilsa, colloquially referred to as 'khoka ilish' needed to be stopped. It wasn't until 2013 that a specific notification was brought in by the West Bengal government to control overfishing and conserve the hilsa population. The notification lay prohibitions on catching of the fish using a gill net having mesh below 90mm, prohibited catching, transport or sale of small hilsa. It also declared five hilsa sanctuaries on the Hooghly river from Farakka to Sagar, covering a stretch of 250 km, where fishing has been banned between June-August and October-December. "But even though these legislations exist, at present the fisheries department is quite toothless. With these provisions and the power to put customers in jails, we can actually control the sale of juvenile hilsa – which has to be stopped immediately, said an official. Officials in the fisheries department explained that the need for tough legislation was now more urgent than ever. One official spoke about the river, before 1972 – that saw the commissioning of the Farakka Barrage – where hilsa provided a lucrative livelihood for fishermen in mid-stretch of the river, generating employment for thousands of fishermen from not just Bengal, but also Bihar and UP.

All this has changed. The fragmentation of the river has blocked the migration of the mature fisher, from sea to river for breeding and also the downstream migration of their progeny into the sea. Consequently, hilsa fishery upstream has collapsed. Assessment of the production trends of hilsa from 1961 to 2013 in the middle stretch of the Ganga by Central Inland Fisheries Research Institute (CIFRI) revealed a significant decline in the annual average production from 36 tonnes to 0.9 tonnes. Findings by CIFRI reveal that during the period 1998-2012, the average catch of juvenile hilsa (2 to 20grams) from the system was a staggering 85 tonnes per year. Experts predict that saving even 1 per cent of these juveniles could enhance the hilsa production by 4000 tonnes per year.

### **West Bengal: Buying baby Hilsa fish could land you in jail**

<http://www.hindustantimes.com/kolkata/west-bengal-buying-baby-hilsa-fish-could-land-you-in-jail/story-lusHwePLYMGLOGwj5FjZVK.html>

"Very soon, you could be put in jail and even slapped with a fine for buying a Hilsa that weighs less than 500 grams. Known across the world as the 'king of fish' because of its unique taste, the Hilsa takes at least two years to attain that weight. With an average live expectancy of around four years, the fish may weigh up to 2.5 kilo. But these days you rarely see a Hilsa that big. And that's why, law is stepping in. The West Bengal Fisheries Department is planning to initiate a process that will introduce stiff penal provisions under CrPC and IPC and allow the police to arrest anyone for catching, selling and buying Hilsa weighing less than 500 grams. "The proposal was floated at a recent meeting at the fisheries department. We will soon approach the state home department to start the process of bringing provisions under CrPc and IPC in this regard, said state fisheries minister Chandranath Sinha. If things go as planned, the Hilsa could become the first Indian fish to get legal protection, experts pointed out. At present, the fisheries department doesn't have the power to arrest or fine anyone for selling, catching and buying small Hilsa, commonly called "khoka ilish in Bengal. But there are regulations. The government can confiscate a catch of fish and fishing net from a trader or fisherman. There is also a ban on catching Hilsa during pre-monsoon and post-monsoon season when the fish migrates to the Hooghly river from the sea for laying eggs. "Tough legislation is necessary to conserve the hilsa population in the Hooghly River. The dwindling population has also pushed the price of a Hilsa weighing above a kilo to around `1,500. A big Hilsa is beyond the reach of the middle-class, said Utpal Bhowmik an expert on Hilsa and a former scientist at the Central Inland Fisheries Research Institute.

### **West Bengal: Blue revolution: West Bengal eyes fishery as sunrise sector**

<http://www.financialexpress.com/market/blue-revolution-west-bengal-eyes-fishery-as-sunrise-sector/502774/>

"West Bengal has categorized fisheries sector as a sunrise sector providing investment opportunities in areas of fish production, fish exports, fish processing and fish tourism. While the state wants to give a major boost in fish production to unleash the target of the National Fisheries Development Board of increasing productivity by 8% annually to touch 15 million tones of production by 2020, it wants to tap a considerable portion of the Rs 3,000 crore umbrella scheme, which seeks to bring about blue revolution and integrated development and management of fisheries. Soumyajit Das, director, West Bengal State Fisheries Board, said the state has send a Rs 250 crore first phase proposal, which comprise Rs 100 crore de-siltation, Rs 50 crore seed culture and Rs 100 crore processing. But as a part of integrated development and management of fisheries, the state along with development of pisciculture have taken steps in creation of infrastructural facilities like construction of rural roads, housing, rural electrification, tube wells community halls and auditorium in both inland and marine fishing villages. The state has carved out 810 large water bodies for fisheries, for which Rs 23 crore have been spent on providing fish food. The government will create an integrated fisheries zone, develop fishery estates, develop Sunderbans and Digha as special fishery zones, promote farming of large fish and provide land

and associated legal documents to homeless fishermen as a part of integrated development and management of fisheries.

According to Chandranath Sinha, state's minister for fisheries, the government has framed West Bengal Fisheries Investment Policy -2015 for micro, small, medium & large enterprises in fisheries sector, which focuses on extending fiscal incentives for setting up of new micro, small, medium and large enterprises. "This will propel the growth of the sector as a whole and encourage the development of these enterprises even in the least developed areas of the state, Sinha said. He said since West Bengal accounted for 20% of the country's total fish production at 16.71 lakh metric tonne in 2016 and total exports of marine products was \$ 530.91 million implying 11.33% of the total marine products exports worth \$ 4687.94 million from India in 2016, we can consider enhancing both production, processing and exports to fetch more revenue for the state.

"We are working closely with the National Fisheries Board to this end, Sinha said adding that the state has tied up with the Indian Chamber of Commerce (ICC) to attract investment in fisheries sector and promote it as a sunrise sector. Both ICC and the state government have joined hands in organizing Bengal Fish Fest, an initiative to attract investment in the state fishery sector. However, such fest should go beyond the boundaries of Bengal and even beyond the boundaries of India for promoting it as a sunrise sector, felt a fishery department official. ICC president Aditya Agarwal said if investments were to be attracted there could be certain initiatives from the government's part including defined timelines with regard to all clearances and labour dispute resolution mechanism that would create a more conducive business environment.

The government could lease out water bodies on a private- public –partnership mode to encourage joint ventures with the private sector in the entire value chain of the fisheries industry in areas of infrastructure, research and international marketing. Moreover skill development programmes on a large scale could be established that would enhance the quality of human resources in the sector and bolster investment. Das said West Bengal was poised to produce more than 18 lakh metric tonne fish in FY 17 of which 75% was fresh water and 25% brackish water. Although crab, shrimp and fresh water prawn exports were on the rise, Vietnam was emerging as a close competitor to India especially in the area of tiger prawn. Although India was a major importer of Hilsa from Bangladesh, Bangladesh was emerging as a new export market for India besides the conventional markets of Japan, Cambodia, Thailand, UAE and parts of Europe. The state will have to work on market intervention scheme for identifying new markets. Fish tourism could be promulgated on a large scale to invite private companies for investment, Agarwal said.

**West Bengal: Demonetisation impact: Vendors & customers wait for more money and machh in Kolkata's fish markets**

<http://economictimes.indiatimes.com/news/politics-and-nation/demonetisation-vendors-and-customers-wait-for-more-money-and-machh-in-kolkatas-fish-markets/articleshow/56394695.cms>

"What's a Bengali lunch without rohu flaunting itself in the redness of a kalia or crescents of prawns gilded in the pale-gold of a malai curry, or the bhetki peeping from the folds of a banana leaf? And yet many Bengalis have to confine these to feverish pescatarian fantasies at noontime. Tapas Mukherjee, a businessman from South Kolkata, frequents the fish market on Bondel Road near his home in Ballygunge at least twice a week. He would pick up different varieties of fish from rohu or rui, a Bengali staple, that is around Rs200 a kilo to tiger prawns that cost around Rs500 a kilo but "the fish markets in Kolkata are now downbeat, he says. "Prices and supplies have fallen. Demonetisation has led to a strange situation where both buyers and sellers are hit, he says. The fish markets of Kolkata have not been the same since the Centre announced demonetisation on November 8.

It is the season of festivals and festivities, but the fish markets where vendors sit on raised platforms, surrounded by scales and heaps of fish and prawns have lost the usual thrum of crowds and the rising crescendo of haggling. Ramkrishna Das, who sells freshwater fish and seafood, has a permanent slot at the Lake Gardens Supermarket in South Kolkata. His day usually begins at 4 am, when he takes a train to the wholesale market at Howrah, to procure fish from large distributors. He hurries back to his market before 7 am by when buyers would start trickling in fish is a big part of the average Bengali household's daily meals. But in November sales were down by around 40%. Things are now slowly picking up, with more Rs500 notes in circulation. "The note ban has hit small sellers like us hard, says Das. "We are in the market during banking hours and so cannot access our accounts. The wholesalers will accept only cash payment and our customers have been giving us high denomination notes of Rs2,000. Das and a few fish sellers are trying to get around the problem when someone buys small quantities of fish from a few of them, they ask the customer to settle the bill together so that each of them doesn't have to fumble for balance.

They are also selling fish on credit to regulars. Even the big fish are worried. At the wholesale market in Howrah, Adil Irfan of MI Fish Company is counting the cartons and there aren't many to count. From five to seven cartons a day each containing around 60 kg of seafood sales are down to one or two cartons. "Our products are perishable and have a very short shelf life. We have to wrap up our deals on a daily basis. It is very difficult for me to send my staff to the bank to stand in long queues to withdraw cash, so I would get my payments in cash rather than in cheques, he says. Netai Das, who has a fish stall at a market in Jadavpur, says his daily sales, which were around Rs20,000-25,000, are down by almost 80%. But he is hoping that as the liquidity crisis slowly eases, things will improve.

“I source fish from multiple suppliers who don't accept anything other than cash payment, he says. Small sellers are, not surprisingly, the worst hit. Hiru Halder sells fish on a pavement near Baghajatin market in south Kolkata. On good days and weekends, his sales used to touch Rs2,000; now it is less than Rs500. Halder, who has to support his wife, mother and son, has no other job and has been buying fish on credit. He now desperately hopes that the cash situation will ease off. Fins are Down Things are not any better elsewhere in the country. At the fish market in Delhi's Chittaranjan Park, none of the vendors has switched to mobile wallets or any other mode of electronic transaction. Says Dev Bijoli, who runs a fish shop at CR Park's busy Market 2: “In Delhi, people easily switch to vegetarian alternatives.

Many people are staying away from the market because of the shortage of notes. We have to source our supplies from Ghazipur mandi early in the morning and hence don't have time to take out money from the bank. Even in the seafood haven of Goa, the spirits are low. SL Rathore, who sells fish in Porvorim and other places in north Goa for the last 15 years, is worried. “My daily sales have dropped from Rs 7,000 to less than Rs2,500. People have stopped eating fish! Many customers are buying on credit, promising to pay later when they have cash, says Rathore, who sources fish from a wholesale market at Margao and delivers at homes. Siddhartha Chatterjee, founder of popular Bengali restaurant chain Bhojohori Manna, didn't really think that his new venture Machhli Baba, an upscale retail outlet for fish in Kolkata, would receive so much traction within a few months of its launch.

“We started this venture as a backward integration project for our restaurants which serve a lot of fish delicacies. Now, demonetisation and the currency crisis have provided a big fillip for our store in south Kolkata where people can buy different varieties of fish and pay with plastic, says Chatterjee. A second store has now been opened in the Salt Lake area for young professionals who need their fix of fish without having to go through messy markets. Those who have facilities for e-transactions are having a field day. Says Shan Kadavil, founder of Bengaluru-based ecommerce startup Freshtohome, which delivers fresh fish and meat to consumers in Bengaluru, Kochi, Thiruvananthapuram and Delhi: “Our customers have not been affected by demonetisation. We have seen a 30% uptick in sales. But fishermen in Kerala from whom we source fish have been badly hit because of the cash crunch since they can't procure diesel for their fishing vessels. The company, which was launched in August 2015, sells over 6 tonnes of fresh produce daily and plans to launch operations in Mumbai soon. Meanwhile, fish vendors are waiting for more cash and much machh (fish).

### **West Bengal: The workers on mechanized fishing craft claim their rights: A Significant beginning**

"A grave situation prevails in the mechanized marine fishing sector in India - that of utter lawlessness, deprivation and tyranny. On mechanized fishing boats fishing is done by fish workers, but they lack organisation of their own, so they are unable to represent the mechanized

fishing sector. The owners of mechanized fishing boats do not fish, but they have their associations, so they alone represent the mechanized fishing sector. This results in usurpation of all subsidies, loans and other governmental benefits by the owners of the mechanized fishing boats and complete deprivation of the fish workers working on the mechanized fishing boats. For the workers there is no written contract; no general and binding terms of payment; no standardised working hour/overtime; no standardised food, resting place or medical treatment on board; no adequate insurance cover; no medical treatment facilities on land.

Government of India, a signatory to the 'ILO Convention 188 on Work in Fishing', that recognises the rights of fish workers, has been turning a deaf ear to the demands raised by concerned fishing communities and activists to: \*Ratify the 'ILO Convention 188 on Work in Fishing'; \*Enact an appropriate law for implementation of the Convention; \*Extend the benefits and securities proposed in the 'ILO Convention 188 on Work in Fishing' to all fish workers as applicable. The mechanized fishing boat owners' association has doggedly opposed the norms, securities and benefits for fish workers proposed in the 'ILO Convention 188 on Work in Fishing'. The crew on the mechanized fishing boats have raised the banner of opposition to this injustice.

They have decided to form their own union and take on the owners to put an end to their age old deprivation. Dakshinbanga Matsyajibi Forum (DMF) has been instrumental in helping them to get organised. In the coming days the owners of mechanized boats are going to lose their monopoly in representing the mechanized fishing sector. The voice of the fish workers is going to be heard on the coasts of West Bengal and reverberate all over the sea shores of India. About 350 crew members of the mechanized fishing boats have resolved to come together and form a trade union of their own. Their first meeting took place at Sagar Island on 4th January, 2017. The united effort of these crew members of mechanized boats, if sustained, will end the rabid exploitation by the boat owners and change the face of the mechanized fishing sector in the country.

### **West Bengal: Bengal aims 20% of Rs 3,000 crore Blue Revolution fund**

[http://www.business-standard.com/article/pti-stories/bengal-aims-20-of-rs-3-000-cr-blue-revolution-fund-117010800309\\_1.html](http://www.business-standard.com/article/pti-stories/bengal-aims-20-of-rs-3-000-cr-blue-revolution-fund-117010800309_1.html)

"West Bengal is eyeing a sizeable share of at least 20 per cent from the total national corpus of Rs 3,000 crore meant for 'Blue Revolution'. ""We are definitely eyeing at more than 20 per cent of the Rs 3,000 crore national fund meant for development of marine sector for Blue Revolution,"" West Bengal State Fisheries Development Corporation managing director Soumyajit Das told PTI. The state, he said, has already sent proposal worth Rs 250 crore for FY 2016-17 of which proposals totalling about Rs 100 crore is toward processing, Rs 100 crore for de-siltation and rest Rs 50 crore for culture is sent to the Centre for approval. National Fisheries

Development Board is aiming at eight per cent productivity growth touching 15 million tonne production by 2020 through its Rs 3,000 crore umbrella Blue Revolution. West Bengal fish production is 1.7 million tonne or 20 per cent of national production but the majority of it is consumed. Exports account for 11 per cent of the country's fish produce. West Bengal government has decided to create special fishery zones and had undertaken several projects toward development of fisheries. Some 1.38 lakh fishery farmers have been provided with biometric cards.

### **West Bengal: Exclusionary conservation in the Sundarbans**

<http://www.epw.in/journal/2016/53/insight/exclusionary-conservation-sundarbans.html>

"In March 2015, two weeks before I left the village of Emilybari in Satjelia gram panchayat of Gosaba block, South 24 Parganas, West Bengal, Amal Mandal, a man in his early 30s, was mauled by a tiger while collecting crabs in the forest creeks near the island of Pirkhali, a core area within the Sundarban Tiger Reserve. Two other fishermen accompanied Mandal. He is survived by his 26-year-old wife, a daughter studying in the fourth standard, and a differently-abled son. His family has been left penniless and without food. A week before this incident, an 18-year-old boy was attacked by a wild cat near Buridabri. He has left behind a 16-year-old wife and a one-year-old child. The media generally reports one or two deaths every year within the Tiger Reserve, but these two deaths in two weeks in a single village point to the extent of the vulnerability of the local populations. The Sundarbans, the largest stretch of mangrove forests in the world, form the southernmost part of the Gangetic delta, between the River Hooghly in the west of West Bengal and the River Meghna in the east, now in Bangladesh. The delta spreads over 25,500 km<sup>2</sup>, of which two-thirds (15,870 km<sup>2</sup>) lies in Bangladesh and one-third (9,630 km<sup>2</sup>) in India. In India, the Sundarbans comprise 102 islands, 54 of them inhabited and the rest within forest cover.

The Indian part of the Sundarbans falls in the state of West Bengal and the inhabited area is divided into 19 blocks, commonly known as community development blocks, over the North and South 24 Parganas districts. These 19 blocks include Basanti, Gosaba, Joynagar I, Joynagar II, Canning I, Canning II, Patharpratima, Mathurapur I, Mathurapur II, Sagar, Kakdwip, Kultali and Namkhana, within the South 24 Parganas district, and Harowa, Minakhan, Sandeshkhali I, Sandeshkhali II, Hasnabad and Hingalganj in the North 24 Parganas. The Sundarban delta in West Bengal is bounded by the River Bidyadhari to the west and the Rivers Raimangal and Ichamati to the east. The colonial administration notified this forest as a "Reserved Forest in 1878, with agricultural and fishing rights permitted only with the consent of the forest department. The Sundarban Tiger Reserve, which was notified in 1973, has an area of 2,584.89 km<sup>2</sup>, of which 1,699.62 km<sup>2</sup> is designated a core area and 885.27 km<sup>2</sup> a buffer area.

The Sundarbans National Park, declared a World Heritage Site by UNESCO (United Nations Educational, Scientific and Cultural Organization) in 1987, falls within the core area of the Tiger

Reserve, divided into the Sundarbans National Park East and Sunderbans National Park West. It covers an area of 1,330.12 km<sup>2</sup>. The Sajnekhali Wildlife Sanctuary lies within the buffer area of the Tiger Reserve, occupying 362.42 km<sup>2</sup>. Apart from this, the Halliday Island Wildlife Sanctuary covers 5.8 km<sup>2</sup> and the Lothian Wildlife Sanctuary 38.9 km<sup>2</sup>. Both fall within the reserved forest area outside the Tiger Reserve. The Sundarbans National Park is an inviolate zone where no human activity is permitted under West Bengal state government policy. The buffer area, excluding the wildlife sanctuary, is the only area where subsistence activities such as fishing, crab collection, shell collection and prawn seed collection are allowed, with prior permission from the West Bengal forest department.

The people living in the inhabited islands of the Sundarban delta are amongst the most backward and poorest in West Bengal, with a literacy rate below 35% and per capita income less than half the state average. Emilybari, the small village where I carried out my research, is on Satjelia Island of Gosaba block, in the extreme south, farthest from the city of Kolkata and closest to the forest. This island is a part of the active delta,<sup>1</sup> where fresh breaches appear within the river embankments almost every day, causing the erosion of large chunks of land and leaving hundreds of people homeless. In this article, I demonstrate the contradictions of vulnerability and forest conservation emerging from my three-month fieldwork in the region. The vulnerability of the local population is not induced by poverty alone, but also by exclusionary conservation practices which grossly undermine the participation of local people in forest management. 1?Poverty or Vulnerability? The Dimensions of Distress Satjelia is one of the very few islands where, in addition to agriculturists and wage labourers, the population of forest-dependent islanders is highest.

The region marks the highest quantum of poverty as well as vulnerability in the Sundarbans. Satjelia gram panchayat is divided into three mouzas, Satjelia, Dayapur and Sudhanspur, with a total population of 18,081. Of the 4,352 households within Satjelia gram panchayat, 1,231 are below poverty line (BPL) households of fisherfolk and landless labourers, who inhabit makeshift structures on the erosion-prone lands adjoining the river. Emilybari falls within Satjelia mouza and has a population of 2,300 in 356 households. Many of the landless and impoverished households of Emilybari have no BPL cards and cannot access any government entitlements. It is the better-off households that have managed to procure BPL cards and are thus entitled to the schemes for the underprivileged.

There are around 30 primary schools and five higher secondary schools on the island of Satjelia. There is no electricity on the island, though generators are used to supply electricity in the market areas. The hutments of the landless families are at constant risk of erosion and wildlife intrusion. The river that flows between the village and the forest is not very broad, and especially during ebb tides, tigers can swim across. More than the poverty, however, what strikes you immediately is the growing vulnerability of the region. While the poverty and illiteracy in the region also need close attention, I argue that four additional vulnerability factors have caused

widespread destruction of lives and livelihoods in the island. These are environmental hazards (including climate change), a difficult terrain, health hazards, and incessant tiger attacks. Global warming has raised surface water temperatures in the Sundarbans at the rate of 0.5°C per decade since 1980, compared to 0.06°C globally (Kanjilal et al 2010). As much as 82 km<sup>2</sup> of the Sundarbans have already been submerged. This includes the whole of the island of Lohachara and 59% of the island of Ghoramara (Kanjilal et al 2010).

According to estimates, 70,000 people will be rendered homeless in the Sundarbans by 2020. In addition, Cyclone Aila in 2009 took several lives and left 4 lakh people homeless. Government and private aid was insufficient, and cholera, malaria and other diseases spread rapidly through the area, affecting thousands.<sup>2</sup> The effects of climate change have forced the indigenous populations to shift their habitat, especially in villages like Emilybari that are adjacent to the river embankments. Flooding and salinisation of land and agricultural fields threaten the existing habitations. The island terrain is extremely difficult. In Emilybari, the earthen embankments bordering the river, which act as a shield between the River Gomor and the small fishing village called Jelepara in an area called Emilybari Paschimpara, are fragile and have been undercut several times by tidal surges, causing permanent seepage inside the hutments and cracks on the floor. Fifteen to 20 metre of land has already been inundated by high tide and monsoon surges following Aila. Water levels during high tides rise as much as 8 to 10 metre.

Residents of the fishing village say the river could engulf their village at any time and claim their lives. This precarious existence is worsened by the fact that there are no paved roads within the village except for a 1-km stretch from Satjelia main market towards Sukumari in the south. No transport other than van rickshaws (the only locomotive on Satjelia island) can ply on these dilapidated road surfaces. With embankments and floors and courtyards of houses made of mud, rainfall makes the surroundings extremely slushy and difficult to access. Environment-induced health hazards, including death and debility from natural disasters, animal bites and arsenic poisoning affect 60% of the population (Kanjilal et al 2010). Hospitals are too far away, and in emergencies, pregnant women have delivered on the way to the hospital. The geo-climatic location has made the Satjelia region extremely vulnerable to saline floods and storms, which have health effects, including respiratory, gastrointestinal and musculoskeletal problems, as well as general weakness.

The crude death rate in the Sundarbans is 7.6 against 6.3 for West Bengal as a whole (Kanjilal et al 2010). The only health centre near Satjelia, managed by the Tagore Society for Rural Development, is roughly an hour away, and in the absence of a direct roadway, is accessible only by boat across the River Gomor. Tiger attacks in the Sundarbans, which claim the lives of several people every year, need elaboration. The people who venture into the forests are primarily fisherfolk and honey collectors. Fishing includes crab collection, prawn seed collection and fish collection. Each of these involves different fishing techniques, and each is equally vulnerable to tiger attacks during the process of collection. The most precarious, however, is the

collection of honey, which requires a group of six to seven people (known as mauley in the local language) venturing into the forest in search of a beehive. In spite of praying to Bon Bibi, the goddess of the forest, the honey collectors are dogged by the fear that some of them may not return. Thus, according to them, “searching for honey and searching for a tiger are the same. Crab collection also carries a significant risk of tiger attack.

The forests above the narrow creeks house tiger dens. The creeks are sometimes so narrow and dry during ebb tide that a boat can hardly enter. Often, the fisherfolk slash through the bushes as they move along the creek. They drop trout (locally known as don) tied to a thread along the creek when the water level is low. The person at the back of the boat pushes the craft forward and the person in front drops the trout. After the entire distance is covered, they wait at the end of the creek for 15 to 20 minutes for the crabs to be caught. Then they come back to the mouth of the creek, lifting the thread, with the catch, along the way. Since the creeks are so narrow, the uplands on both sides make it easier for a tiger to jump onto a boat. The bush of a Hentali or Garan tree is dense and camouflages the tiger. The forest fishers of Emilybari say that tiger attacks in the core areas are kept under wraps, because patrolling forest guards are liable to come down heavily on the other members of the team, regardless of whether the victim has survived or not. No compensation can be claimed for the victims since deaths that occur in the core areas are denied by the forest department.

A fisherwoman from Emilybari stated that when her husband was carried away by a tiger in the Gopalkhali forest, which is in the buffer area, the local police refused to lodge a missing person complaint. Fishing and prawn seed collection are equally risky, for a tiger can pounce on someone spreading a net on the water. Women are mainly involved in prawn seed collection, and every year many women also fall prey to crocodiles while they are pulling nets through waist-deep water. 2?Conserving the Sundarbans Fishing and honey collection are contentious activities in a region designated as a Tiger Reserve in 1973 and a National Park in 1984, where all human intervention is banned under Section 38V(4) and Section 35 (1) of the Wildlife Protection Act of 1972 (Gopal and Chauhan 2006; Danda 2010). Livelihood opportunities for the Sundarban islanders are limited by the harsh topography, saline water, poor communications infrastructure, frequent natural disasters and inhospitable climate.

As a result, the islanders at the forest fringes like Emilybari are forced to depend on the forests for their livelihood fishing, collecting honey and other forest resources. They have forged a relationship with the forest over hundreds of years. They respect the forest, holding the trees and honey sacred. Their practices on conservation and sustainable forest management are integral to the forests and demand serious attention.

However, conservation policy in our country grossly undermines the participation of local people in forest management. The establishment of a national park or wildlife sanctuary in a given area assumes the political capacity to enforce regulations that will either curtail long-standing rights

of access to these areas or effectively eliminate such rights (Saberwal and Rangarajan 2003). There has been ample literature stating the imperatives of conservation in India. The marginalisation and political disempowerment of the Sahariya tribes residing within the Kuno Wildlife Sanctuary in Madhya Pradesh has prompted them to mobilise and oppose the forest department over unequal rights to Protected Area (PA) resources.

The Lion Reintroduction Project has displaced more than 5,000 people to the outskirts of the Kuno sanctuary (Sharma and Kabra 2007). There are several other cases of displacement and relocation from PAs where the officially stated reasons for displacement are “human pressures and “human wildlife conflict. The Nagarjun Sagar Srisaigram Sanctuary and Tiger Reserve in Andhra Pradesh notes the displacement of 16 families, but no detailed information on the process of relocation was available. The Terai Arc Landscape (TAL), spread across Uttarakhand, Uttar Pradesh, Bihar and the low-lying hills of Nepal and one of the global priority tiger conservation landscapes, houses more than 500 people per square kilometre. The Rajaji National Park, located north-east of TAL, houses several Gujjar pastoralists within its boundaries. There have been several attempts to resettle these Gujjars since 1984, but it was only in 2003 that 193 Gujjar families were resettled in the Chidiyapur range near Haridwar, at an average cost of \$360 per household (Harihar et al 2009).

However, one of the striking differences between the Sundarbans and the other wildlife sanctuaries and national parks cited above is that there is no human settlement within the Sundarban forests. People venture into the forests only for livelihoods. Their livelihood needs, however, are severely constrained by the forest department. The boat licence certificate (BLC) is a case in point. There are 942 BLCs in the Sundarban Tiger Reserve, of which only 708 are presently functional. These licences are quite old and owned by rich landowners and traders who presently have no connections with the forest and fishing. The fisherfolk who actually need the BLCs do not have the licence and are required to pay ₹30,000–₹45,000 to rent the BLCs from the landlords for nine months to a year. No fresh BLCs have been issued by the forest department of late, virtually banning indigenous practices like fishing within the forests. As a result, most of the fisherfolk have to go fishing without a licence.

The charge for renewing the licence per fishing season is ₹500 while the rent of a BLC is around ₹45,000 a year. Thus if a boat, which usually has a crew of three, brings in an income of ₹1,00,000 per year, the profit after payment of rent is ₹55,000, which has to be divided three ways to sustain three families for a year. The owner of the boat obviously receives an amount higher than the other two. Villagers in Lahiripur and Satjelia say that after the declaration of about 1,669.62 km<sup>2</sup> of the Sundarban Tiger Reserve as the core area, a large chunk of the forests has been closed off to them. Areas where fishing is permitted, within the buffer zones, are congested with a number of boats, resulting in over-extraction of fish and crab in these regions. The fisherfolk are forced to enter the core areas secretly and if caught by a patrolling boat of the forest department, are fined ₹500 for the first offence, ₹1,000 for the second offence and ₹1,100

for the third, along with confiscation of the licence. A fourth offence may see the fine increase to ₹2,500 or ₹3,000.

The catch of fish is also confiscated. Bribing the forest guards is routine, and further impoverishes the fisher community and honey collectors. Villagers complain about dacoits who cut the flowering trees within forests and hamper their reproduction. The National Fishworkers Forum (NFF) recently announced that more than 20 acres of mangrove plantations have been cleared by timber mafias. The Nypa palm (commonly known as Golpata), which is used to make roofs and buildings, is dwindling. The villagers know how to cut the trees in ways that will allow them to grow and regenerate. The forest-dependent communities of the Sundarbans have traditional knowledge of conservation and sustainability, which is an integral part of their relationship with the forests.

According to Baburam Mondol, who was a member of the Satjelia gram panchayat from 1993 to 1998, the forest department, West Bengal, strictly prohibited entry into the core areas of the Tiger Reserve for fishing and wood collection after 23 December 1973, following the notification of the Sundarbans Tiger Reserve. Joint forest management (JFM) has been introduced in the Sundarbans Reserve Forest since 1991 (through a Forest Protection Committee) and in the Sundarbans Tiger Reserve since 1996 (with an Eco-Development Committee). The government has tried to introduce new income-generating activities through CAG (Comptroller and Auditor General) Committees<sup>3</sup> by providing domestic livestock, including goats to households, granting irrigation pumpsets, providing van rickshaws and building brick roads. However, there was a stark inconsistency here since the benefits did not accrue to all the forest-dependent people, but only to a handful, creating local disagreements and disgruntlement. Measures like the Mahatma Gandhi National Rural Employment Guarantee Act failed as a result of delays of more than eight months in fund disbursement, the physically demanding nature of tasks like mud-cutting, especially for women, and gross underpayment.

The standard payment in Emilybari village was ₹165 in 2015 for clearing 100 cubic feet (ft<sup>3</sup>) of mud for embankment-building. There were discrepancies in payments since some people received ₹1 for clearing 1 ft<sup>3</sup> of mud while others received ₹1 for clearing 0.88 ft<sup>3</sup>. Women received ₹1 for clearing 0.66 ft<sup>3</sup> of mud.<sup>4</sup> Repeated attempts have been made to close off the forest from the local people. The people, who claim to have significant indigenous knowledge about the forests, are not even involved in forest management plans. Recalling the 1979 eviction and massacre of Bangladeshi refugees from Morichjhapi island in the Sundarbans, Annu Jalais writes, The incident marks for the people the beginning of a politics of betrayal by what they saw as a government run by the political elite. How the government has put all its importance on the protection of wildlife and its subsequent use of force against these poor refugees which resulted in hundreds of them dying was seen as a betrayal not only of the poor and marginalised in general but also of Bengali Nimmabarno identity. (Jalais 2007: 4)

Even today, more than three decades after the massacre, the situation remains the same. Verbal abuse of the fisherfolk by forest guards for entering the forest, confiscation of their fishing equipment, seizure of their catch and boats, the imposition of steep fines and the extortion of bribes have made conditions even worse. Mismanagement, corruption and over-exploitation threaten both the forest and its dependent communities. According to some conservationists, local people are adversaries of biodiversity since their presence results in forest degradation and wildlife depletion. Forging a middle path calls for a gradual shift to an inclusive conservation strategy that privileges both wildlife and people's livelihoods, thus building up a public constituency for conservation (Kothari and Pathak 1998). The study suggests that, in a place like the Sundarban, which has been declared a World Heritage Site, the moral imperative of conservation is shrinking. Unless we recognise the traditional roots of biodiversity conservation, we cannot address the vulnerable livelihoods and threatened identities in the region. We cannot continue to maintain a watertight compartmentalisation between the natural world and the human world.

### **West Bengal: Even the Bengalis have stopped buying fish**

<http://www.newindianexpress.com/business/demonetisation/2016/dec/30/even-the-bengalis-have-stopped-buying-fish-1554314.html>

"By the telling of the fishmongers in Guwahati, India has become stingy all of a sudden. With a few days to go for the end to the demon days, I went to the teeming Kachari fish market in Guwahati to sniff the mood. The traders I met said their takeaway from the last 50 days is that the shock treatment has left consumers wince if they have to reach for their wallets. "True, people initially struggled for cash initially. But the situation has improved substantially but people still are afraid of spending money. They are eating less! complained Moinul Khan, a trader. It's indeed a bit much if you can't get a Bengali to spend on fish." "We all know how much Bengalis love fish but I haven't seen my regular customers for weeks. Earlier, they would visit almost every day, Khan added.

The Kachari fish market is located at Rehabari, the posher quarter of Guwahati. Apart from several government buildings, the head office and residential enclaves of the Assam Police are located here. A lot of Bengalis live here. In the pre-demonetisation era, the market would buzz until 2 pm. A 'big' trader, Nurul Hussain told me his daily sales have plummeted from Rs.5 lakh to Rs 1.5 lakh. The market has 22 traders. Three of them – Khursed Ali, Moinul Haque and Abul Hussain – have closed shop and moved back to Barpeta in western Assam to work as labourers.

Half a dozen other traders are not doing any business every day. Nurul Hussain has been rendered a bitter man.

“Demonetisation has snatched our livelihood. Winter is when our sales usually go up but the situation is worsening every passing day, he said. The traders' pique is that there is cash available aplenty in the ATMs of Guwahati. It's just that consumers are still in shock. Another listless fishmonger I spoke to, Zuber Ali, said he had alternative vocation lined up. “I'm not earning even Rs.300 a day. I've seen some autorickshaw drivers, hit hard by the arrival of Uber and Ola, trying their luck in gambling. If things don't improve, I too will take to gambling.

### **West Bengal: E-wallets stay empty as notes fill pockets**

<http://timesofindia.indiatimes.com/city/kolkata/E-wallets-stay-empty-as-notes-fill-pockets/articleshow/56226464.cms>

"Fifty days since PM Narendra Modi wiped out 84% of cash in circulation by scrapping Rs 1,000 and Rs 500 notes and advised citizens to transform their smartphones into virtual wallets, its use remains limited to payments in departmental stores, restaurants and app cabs. Though small retailers and vendors embraced e-wallets, such as Paytm, in droves around November-end that was the time the cash crisis peaked there have been very few takers. Even that paltry number seems to have petered out since the liquidity eased a bit around mid-December. TOI on Wednesday visited markets in north and south Kolkata to carry out a reality check on e-wallet as a mode of cashless transaction. What emerged was a clear north-south divide with several retailers and hawkers at Gariahat in south offering payment option through e-wallets, while those at Hatibagan in the north continue to shy away from it, terming it an additional burden. But what remains uniform is low transaction as customers continued to prefer paying in cash. Rahul Chatterjee, among the few hawkers at Hatibagan who has opted for e-wallet, said his decision was influenced by the high-decibel campaign by Paytm.

The youth, who sells hair clips and other accessories, said no one in three weeks had paid by Paytm. ""I thought with smartphones in their hands, most customers would find it easy to pay through e-wallet and my sales would improve. The sales have indeed gone up in the last 10 days, but that is because cash is now available in banks and ATMs. Customers don't seem interested in using Paytm,"" he said. Apparently taking a lesson from Chatterjee's Paytm offer, his fellow hawkers have turned away other e-wallet providers, mPesa and Airtel Money. ""This won't work in north Kolkata where people still subscribe to the old ways,"" said Pradip Pandey, owner of an electrical store, where only five of 1,000-plus customers paid by Paytm in December. But a couple of kilometres away at Manicktala Market, 'Paytm Accepted Here' signs can be seen at grocery and provision stores. Again, customer acceptance is low. Ashok Shaw, who has a grocery store, said e-wallet did not account for 10% of his daily income of Rs 15,000-20,000. A couple of fish traders in the market had also jumped on the Paytm bandwagon, expecting better

sales but they have had few takers. On the contrary, the likes of fish vendor Gaffar Ali, continued to accept demonetised notes till December 25.

"They are comfortable with cash, so are we," he said. At Gariahat market, the number of hawkers offering e-wallet facility is higher than their counterparts in the north, but even then, they did not seem lucky. Partha Das, who sells clothes near Basanti Devi College, said people used Paytm in November but not any more. "I installed Paytm three weeks ago, but by then, the scene had improved and people began paying by cash," he said. Gariahat Market Kalyan Samity secretary S K Dey, also a major fish retailer, said trust deficit surrounded e-wallets. "There is always a fear if the account could be hacked into," he said. At Lake Market, a Paytm sign hangs over the incandescent bulb at Gola Bag's fish stall, but he tries to dodge the issue. After coaxing, the reason for his reluctance becomes apparent: he mistook the correspondent for a customer and he did not know how it worked.

"Someone from the firm demonstrated how it functioned a month ago. But with no client, we have forgotten its use," he said. E-wallet companies said usage pattern had stabilised with the easing of cash crunch. "People, who were depending solely on e-wallets even at local markets, are moving back to cash. But we have not seen any big drop in transactions from small-time traders, like fish sellers. The primary account-holders will have to upgrade their accounts to continue with their next level of e-business," said Paytm vice-president Sudhanshu Gupta. Bipin Preet Singh, founder & CEO of Mobikwik, is convinced e-wallets use would increase, though the ground reality seems far removed from the cashless-society vision.

### **West Bengal: Gap between wholesale and retail prices**

[widenshttp://timesofindia.indiatimes.com/city/kolkata/Gap-between-wholesale-and-retail-prices-widens/articleshow/55765946.cms](http://timesofindia.indiatimes.com/city/kolkata/Gap-between-wholesale-and-retail-prices-widens/articleshow/55765946.cms)

"The wholesale fish market continues to remain sluggish, but yawning price gap with the retail market is pushing up the microeconomic indicators for food in the city. The wholesale traders feel that keeping the retail market high is actually bringing down cumulative consumption and affecting the wholesale market eventually. They feel even though prices remain low at wholesale markets, the consumers are not getting the price benefit. "Gap between retail and wholesale prices is increasing, especially with the marriage season around. It is difficult to understand the logic behind such astronomical prices at some of the retail markets," said Debashis Jana, secretary of Patipukur Fish Merchants' Association.

For a retailer at Manicktala, who procures fish from Sealdah wholesale market, the transportation cost is Rs 3-3.5 per kg. Add to that Rs 7-10 more towards ice for preservation, rent towards electricity and staff cost. It rounds up to Rs 14 per kilo on wholesale price. Retailers also need to keep wastage in mind while calculating the cost. Usually , retailers add Rs 20-25 more as profit on that. "But at some retail markets, retailers add Rs 50 or more on the cost. This pushes up the

price further," said Bablu Das, assistant secretary of the Manicktala Market Byabsayee Samiti. Ranjit Mandal, a retailer at Gariahat, said at times prices also vary, depending on where the retailer is procuring the fish from. "If a retailer is buying from Howrah wholesale market, the transportation cost will be lower than that incurred when the fish is procured from Canning. Buyers also understand the difference in quality and are ready to pay a premium," Mandal said. Syed Anwar Maqsood, secretary of the Howrah Wholesale Fish Market, felt the difference had been there always as the retailer had to factor in other costs towards transportation and preservation of the fish.

"Though the difference is large, that does not mean that a retailer is getting the entire amount as profit," he said. "The gap between wholesale and retail price can only be reduced if government intervenes. The state can introduce more fish vending mobile vans. That way they can impact prices at local markets," Das said.

### **West Bengal: Fisherman, family fight off tiger**

<http://timesofindia.indiatimes.com/city/kolkata/Fisherman-family-fight-off-tiger/articleshow/55842583.cms>

"A fisherman, along with his family was out to catch crabs off the Thakuran river creek in the Sunderbans on Tuesday morning when a tiger pounced on him. But Gurupada Bhuyiyan fought off the animal even as it took a swipe at him in the forests of Batakati. The fisherman from Kultali's Kishorimohanpur tried to throttle the tiger with bare hands. As the latter fought back, Bhuyiyan suffered injuries on his elbows and hands. Bhuyiyan was rescued from the tiger's grip by his wife Protima, who attacked the tiger with a sickle (da), even as his son, Tapan, dragged him away. The father and son duo then joined Protima in fighting the tiger off with sticks, finally forcing the big cat to beat a hasty retreat. "The tiger suddenly pounced on me as I sat down to attend nature's call. I caught hold of the tiger's neck and tried to strangle it. The animal struck me hard but I didn't leave its neck till my wife attacked the animal with a weapon," Bhuyiyan said. He is now undergoing treatment at Jamtala hospital in Kultali. The additional divisional forest officer (South 24-Parganas), Dibyendu Bera, said, "The forest staff helped bring the Bhuyiyan family to Kultali from the Batakati forest on a speed boat." The incident comes a few months after another fisherman had fought off a tigress inside the Sundarbans wildlife sanctuary on August 22. Fisherman Nitai Bor fought off the big cat for over five minutes till four others, including his two brothers, came to his rescue. The tussle lasted for another 15 minutes. The tigress eventually walked away in defeat but not before mauling Bor's right arm. Bor is still undergoing treatment at SSKM Hospital.

## **West Bengal: Kolkata receives best cities award for tackling climate change**

<http://timesofindia.indiatimes.com/city/kolkata/Kolkata-receives-best-cities-award-for-tackling-climate-change/articleshow/55744078.cms>

"Kolkata, along with 10 other cities from across the globe, has been honoured with the best cities of 2016 award in recognition of its inspiring and innovative programme with regard to solid waste management. "Kolkata Solid Waste Management Improvement Project has achieved 60-80 per cent (depending on site) segregation of waste at its source, with further waste segregation occurring at transfer stations," a media release said on the occasion of international summit of Mayors of millions plus cities of which Kolkata, Mumbai, Chennai and New Delhi are its members from India. "Forward looking, the project aims to eradicate open dumping and burning of waste and to limit the concentration of methane gas generated in landfill sites," it said. Kolkata is the only Indian city to receive the prestigious award. It received the award during the C40 Mayors Summit held in Mexico City. "In our country, only Kolkata metropolitan has got this award," Dilip Yadav, chairman of the Uttarpara Municipality, told PTI over phone from Mexico City after receiving the prestigious award from C40 Chair and Rio de Janeiro Mayor Eduardo Paes. "This motivates us for more performance for the sustainability of this project," he said. "Our motto is participation of the common people. Being chairman, I have visited 50,000 house and have made our people aware about the benefits of solid waste management," he said.

"The project involved 100 per cent door to door collection of solid waste, segregation and recycling by way of composting which is sold in the market," Onkar Singh-Meena, Secretary Municipal Affairs and CEO of Kolkata Municipal Development Authority said. "One significant aspect of this project is that ragpickers are part of it," said Meena, who is head of the Kolkata delegation to the Mayors Summit. Other cities that won the award are Addis Adaba, Copenhagen, Curitiba, Sydney and Melbourne, Paris, Portland, Seoul Shenzhen, and Yokohama. "On behalf of C40, I want to congratulate all the winning cities for their commitment to their citizens and their dedication to tackling climate change," said outgoing C40 Chair and Rio de Janeiro Mayor Eduardo Paes. "Throughout my tenure as C40 Chair, I have been increasingly impressed by the calibre of the C40 Cities Award winners, and I look forward to seeing other mayors around the world adapting and implementing these models in their own cities," he said. "The C40 Cities Awards recognise the best and boldest work being done by mayors to fight climate change and protect people from risks," said C40 President of the Board and UN Secretary General's Special Envoy for Cities and Climate Change Michael R Bloomberg. "The winning projects show that great progress is being made on every continent, and they serve as an inspiration to other cities. They also show how cities can help the world meet the ambitious goals set a year ago in Paris," he said.

## **West Bengal: Navy increases surveillance in Sundarbans: Tells fishermen to install tracking devices in boats**

<http://www.firstpost.com/india/navy-increases-surveillance-in-sundarbans-tells-fishermen-to-install-tracking-devices-in-boats-3136946.html>

"The Navy is increasing surveillance over the remote islands in the Sundarbans and has asked all fishermen to install AIS tracking device in their vessels without which they will be treated as suspicious. "All boats, trawlers and ships have been instructed to install the Automatic Identification System (AIS) through which we can establish their identity at the click of a button on our software," said Commodore Suprobho K De, Naval Officer-in-charge (West Bengal). The tracking device transmits data related to the ship or boat back to the Navy. "Through satellites, images from aircraft and other vessels, we track the movement of ships. Whenever we are unable to trace them through the AIS, it becomes suspicious for us but that doesn't mean we seize it. We just go there and investigate if everything is fine or not," De told reporters. Fishing crew are also supposed to be carrying their identity cards and biometric cards whenever they are in the sea. De said with the help of two softwares - Trigun and Avgaaah, the Navy are able to screen ships virtually by knowing crucial data like its latitude, longitude position, nationality of the crew, last and next port of call. The Navy has also prepared a digital mapping of coastal villages on a GIS (Geographic Information System) platform. "Besides national security issues, the data will also help us in case of any calamity where we have to do search and rescue operations," the naval officer said. West Bengal has a 260-km-long coastline. In the Sundarbans delta, there are 102 islands, out of which 42 are uninhabited. "There are challenges related to trafficking, smuggling of drugs and cattle and unregulated fishing," De said. Although Navy is increasing its aerial surveillance in coastal areas, there are no plans of having UAVs (Unmanned Aerial Vehicles) in Kolkata, he said. "We are trying to activate the Behala airport but not immediately," De added.

## **West Bengal: No more business on credit, fish vendors switch to e-wallets**

<http://timesofindia.indiatimes.com/city/kolkata/No-more-business-on-credit-fish-vendors-switch-to-e-wallets/articleshow/55521211.cms>

"After a cash-starved week, it seems the Kolkata fish markets are finally settling down - by going the digital way. With hundreds of fish sellers opting for e-wallets like Paytm, the currency crisis can be less damaging to the business. More than 700 fish sellers from the markets in Howrah, Manicktala, Lake Gardens, Dum Dum and Salt Lake have started using e-wallets. Fed up of doing business on credit, Lake Market-based fish seller Raju Bar has recently decided to open a Paytm account. He had already sold fish worth Rs 3,500 on credit. "I can't continue doing business like that as I have to pay the wholesalers. In this scenario, e-wallet seems to be one of the best options to do business," he said. Though a new concept, the e-wallet is proving to be effective in the city bazaars. With 15 to 20 per cent of income coming into their e-wallets,

the mer However, most shopkee chants are fairly hopeful about it. Ashoke Mondal, a fish seller at Jadubabu's bazaar, who is accepting digital payments since Thursday , said. ""Initially, hardly anybody was ready to pay digitally. But the numbers are increasing"". Prafulla Das, another fish merchant, said on a weekday , his daily turnover is around Rs 5,000, and at present, 20% of that is coming into his e-wallet. Similar is the case with Shital Maity , who sells fish at Dum Dum.

""On a normal day, I make anything between Rs 4,000 and Rs 5, 500. Now, nearly 12 to 15 per cent of that is coming into my ewallet,"" he said. The end customers, paying by e-wallet, seemed to be equal ly happy about the development. Poulomi Mukherjee, an animation artist, was spotted buying fish using digital money at Lake Market. ""I have paid my mobile bills and bought pizza using Paytm. But buying fish from fish market with it seems unreal,"" she said, adding, this would ease the suffering of common people to some extent. pers are facing two problems -technology and unavailability of hard cash. There are many vendors who are hesitant about the shift because of these two factors. ""I am accepting digital money from the customers, but the wholesalers will not accept anything but cash from me. I have to stand in the bank queue,"" said Maity, adding he is still a bit confused about how the e-wallet app works. The local fish markets were badly hit post demonetisation. Due to the unavailability of currency notes, the whole supply chain was disrupted. As the end buyers could not afford to spend the cash in hand, the market virtually ran on credit. Paytm GM Nishit Sinha said, ""Due to the cash crunch faced across the country , people are opting this quick and easy mobile payment system."" He added, Kolkata has noted over 80 per cent growth in number of offline transactions while the rate of merchant on-boarding has grown by over 340 per cent.

### **West Bengal: The National Green Tribunal (NGT) orders ban on noise, solid waste pollution in Sundarbans**

<http://timesofindia.indiatimes.com/home/environment/pollution/NGT-orders-ban-on-noise-solid-waste-pollution-in-Sundarbans/articleshow/55616060.cms>

"The National Green Tribunal has ordered a ban on noise and solid waste pollution in the Sundarbans area in a bid to protect the wildlife during the coming tourist season. The Kolkata bench of NGT, comprising Justice (retd) S P Wangdi and Dr PC Mishra, taking up the matter suo motu, prohibited the use of mikes or loudspeakers blaring music, fancy decorative lights, release of solid waste and other material in river water. The bench, in an order passed this week, directed the principal secretaries of four departments, Tourism, Environment, Home and Panchayat to ensure compliance of the order to maintain the ecology of the forests.

""Hundreds of motor launch, steamers and cruises take tourists to the Sundarbans during the winter for excursions and picnics leading to a lot of sound, air and solid waste pollution in the rivers and canals crisscrossing the largest mangrove forest in the world,"" environmentalist Subhas Dutta, who has been appointed amicus curiae in the matter by the NGT bench, told PTI

here. Home of the Royal Bengal Tiger, apart from a large number of other wildlife including alligators, dolphins, deer, wild boars, etc, the Sundarbans on the Ganga delta is already facing a threat to its ecological balance owing to deforestation and increasing human habitats and population. Air and sound pollution are also on the rise in the Sundarban National Park and Tiger Reserve and its fringe areas owing to modern facilities being extended to these areas, which are not so remote now as compared to a decade ago, with better road communication and other modern facilities being available.

""The NGT has also directed the Pollution Control Board (PCB) to visit all 174 hotels, resorts, lodges and homestays operating in the Sundarbans area and review their pollution control systems and whether these are conforming to rules and guidelines,"" Dutta said. The state PCB officials would check the year of establishment of these places, whether these have consent to establish and consent to operate by the PCB as also the Coastal Regulatory Zone (CRZ) permission, he said.

### **West Bengal: Going gets tougher for small traders**

<http://timesofindia.indiatimes.com/city/kolkata/Going-gets-tougher-for-small-traders/articleshow/55676649.cms>

"As if the impact of demonetization was enough, Monday's bandh call turned things worse for vendors and traders as fewer customers turned out at markets fearing political unrest. The CPM, which had called the stir to protest against the travails of the common man, was at the receiving end as small businessmen blamed the party for accentuating the crisis. ""If you can't help, why make us suffer even further?"" fumed Khokan Naskar, a fish vendor who hardly had any business on Monday . Prior to demonetization, Naskar was so busy attending to customers that he could have lunch only at 2pm. Nowadays, there is less business and his lunch has advanced by an hour. On Friday , he was so bored of waiting for customers that he decided to have his meal at 11am.

""If the currency crisis persists, I may have to wind up business and switch to some other trade,"" said the vendor who has been selling fish for three decades. Against Rs 20,000 per day till three days ago, his earnings have plunged to Rs 8,000-10,000. On Monday, he didn't hope to do beyond Rs 5,000.""With most customers offering Rs 2000 notes, I have to turn them down as I don't have the change,"" he said. Vegetable vendor Swapan Halder also slammed the Left for calling the strike. ""It was extremely immature to call a strike. I hardly got any customers in the morning. Since we deal in perishables, they can't be stocked either,"" he rued. Dwipannita Halder, an owner of a garment shop in Gariahat, decided to shut down after surveying the area in the afternoon. ""For over a week, my business has suffered to so much that it didn't make sense to open shop if sales dipped any further,"" said Halder. In north and central Kolkata, too, small traders, hawkers and pice hotels were the worst off as business dwindled on Monday.

## **West Bengal: World Fisheries Day Celebration at Sundarban**

<http://news.webindia123.com/news/Articles/India/20161121/2996229.html>

"World Fisheries day was today celebrated throughout the world by the fishing communities to highlight the importance of maintaining the world's fisheries. A recent United Nations study reported that more than two-thirds of the world's fisheries have been overfished or are fully harvested and more than one third are in a state of decline because of factors such as the loss of essential fish habitats, pollution and global warming. The World Fisheries Day was established to draw attention to these perils as it helps in highlighting the importance to human lives, of water and the lives it sustains, both in and out of water. A number of traditional societies and communities rally around the occupation of fishing. India is the third largest producer of fish in the world and second largest producer of fish. India with its vast and diverse aquatic systems in the form of rivers (29,000 km), estuaries (2, 00,000 ha) wetlands (3,50,000 ha) and ponds (22,00,000 ha), offering tremendous scope for increasing the production and productivity of fish.

During the year 2014-15, fish production in the country was around 10 million tonnes which is more than double the production level achieved 20 years back in 1994-95. By the year 2020, the total demand of fish is estimated to be 12 million tonnes. West Bengal is the highest producer of fish seed in the country. The ICAR-Central Inland Fisheries Research Institute (ICAR-CIFRI) is a premier research Institute of the country in inland fisheries sector. The institute, since its inception has generated very useful inland fishery technologies on induced breeding, fish production, composite fish culture, fish seed prospecting and spawn collection in rivers, reservoir and flood plain wetlands fisheries management and in situ fish seed production in pen and cage. More than two-thirds of world's fisheries have been overfished and in state of decline because of habitat degradation, pollution and global warming.

World Fisheries Day is celebrated every year on November 21 throughout the world by fishing communities to emphasise importance of water year and the lives it sustains, both in and out of water and its role in human live. This year, the Institute is celebrating World Fisheries Day today at Madanganj, Namkhana at Sunderban area. More than 250 farmer's from various blocks of Sunderban were present there.

## **West Bengal: Eyeing fresh catch, fish seller opens shop outside**

[bankshttp://timesofindia.indiatimes.com/city/kolkata/Eyeing-fresh-catch-fish-seller-shifts-biz-to-outside-banks/articleshow/55487809.cms](http://timesofindia.indiatimes.com/city/kolkata/Eyeing-fresh-catch-fish-seller-shifts-biz-to-outside-banks/articleshow/55487809.cms)

"A fishmonger who usually does the round of some south Kolkata neighbourhoods with a shallow drum of fish for doorstep supply before selling the rest at Lansdowne market has for the past few days perched herself strategically near three banks on Ritchie Road with an eye on long queues. Local youths were amused when she first settled down on Madab Lane on Saturday but

her strategy has paid off. While she managed to sell only three-fourth of her stock after knocking on 25-30 doors and walking 5km with the load, since Saturday she has sold the entire stock by noon without budging an inch.

"All my customers were going to the bank. So I thought why not set up shop where the customers are. I come around 7.30 am, just before people queue up at the banks. Several among those who head to the bank stop over to look at the fish and place an order if they like any. They then pick the fish up on the way back, paying me with the crisp, freshly collected notes," said Kanon Senapati, the fish vendor from Canning. "Fish sales had plunged since last Thursday. On Wednesday, sale was brisk with customers keen to spend Rs 500 or more. On Thursday, too, those fish vendors who accepted Rs 500 notes did decent business. It seemed people came to the market to dispose their Rs 500 and Rs 1,000 notes. But I was confident that fish lovers, particularly Bengalis, cannot stay away from fish." she reasoned. She was spot on. Since Sunday, people have been stopping by on way to the bank, picking the fish of their choice, asking her to set them aside and carrying them home on their way back. Not only did Senapati choose the right location, she also displayed acumen to change her basket; from big rohu, katla and hilsa that cost more, she has homed in on varieties that are lower than Rs 250 and hence, more pocket-friendly in these dire times.

### **West Bengal: Demonetisation: Hilsa beckons Bengal, but no cash to grab it**

<http://economictimes.indiatimes.com/news/politics-and-nation/demonetisation-hilsa-beckons-bengal-but-no-cash-to-grab-it/articleshow/55492912.cms>

"Hilsa, one of the dearest delicacies of gastronomic Bengal, has a different tale to tell when it comes to demonetisation. The crisis triggered by the currency ban has drained demand for the fish, pulling down its price to the 2010 levels, although cash-dry consumers can't make the best of the windfall. At Nagendra Market in South Bengal's Diamond Harbour, the largest wholesale fish market in the state, trade has plunged 70% in the past week, leading to a significant drop in the prices. A mid-sized hilsa costs Rs 125 a kg now at Diamond Harbour, compared with around Rs 300 it otherwise commands around this time of the year. Though prices have dropped, the fish isn't available in plenty in the city retail markets where it costs around Rs 400. A supply snag has kept the prices in the city high, according to traders. At Namkhana fishing harbour, close to the Sundarbans, arrival of the fish has dropped as trawler owners cannot buy fish from fishermen because of currency shortage. The episode has left the hilsa enthusiasts sad.

"The fish will disappear within a couple of days as supply has dried up. They are insisting us to give the exact price for fish to avoid giving change," said Milan Chakraborty, a regular at the Gariahat market. In the hilsa market, however, there is no palpable anguish. Most people ET spoke to -from fishermen to trawler operators and traders -has been affected at various degrees by the cash crunch but they supported the government move. "The central government has

said that the currency flow will increase from next week. And this should help us," said Lalmohan Das, a trawler operator. Mojammal Khan, president of the South Sunderbans Fishermen and Fisheries Union, too admitted that the cash crunch has hit badly the fish economy, but the demonetisation move is "good for the country as a whole". It's not hilsa alone. The supply of other fishes too is affected. Pomfret has become cheaper by half as there are no takers. Bombay duck (lote), which is sold in the wholesale market at Rs 20 a kg, is now available at Rs 5-7. Ice sellers, who thrive largely on the fish market, are too teetering on the brink. There are 14 ice mills in the Diamond Harbour area that provide ice blocks to fish traders. Utpal Pradhan, an employee of the Southern Central Fisheries Cooperative Society, said the price of ice block has dropped 25% in past week to Rs 120.

Fishing is the major occupation in Sunderbans, Namkhana and Diamond Harbour area and the economy of the region rests on it. Wholesalers from Siliguri, Berhampore, Krishnanagar, Basirhat, Sealdah and Howrah come to the Nagendra fish market to buy fish and supply to local markets. "Every day, at least 100-150 trucks each carrying 3 tonnes of fish from Namkhana offloads fish in the Diamond Harbour fish market. There are 72 commission agents working in the fish market and on average each of the commission agents handle business of Rs 35-50 lakh per day. More than 42,000 people are engaged in the trawler business, mostly in loading and unloading of fish," said Khan, the union president. Golok Manna, whose 18 trawlers ply between Bay of Bengal and Namkhana fish harbour, is hoping for the situation to improve quickly.

### **West Bengal: Fishonomics set to take a hit as merchants stop lifting stock**

<http://timesofindia.indiatimes.com/city/kolkata/Fishonomics-set-to-take-a-hit-as-merchants-stop-lifting-stock/articleshow/55422629.cms>

"The city is going to face acute shortage in supply of fish a daily staple for millions with liquidity crunch reaching its zenith. If the average Kolkatan is elated by the dip in fish price on Monday, it is short-lived. The supply system receives a body blow with currency flow drying up completely. At Digha, Kakdwip and Diamond Harbour, trawlers are stranded with tonnes of fish rotting in them. A few thousand trucks carrying fish are stranded in different parts of Andhra Pradesh and Odisha for not being able to pay mechanical tax in small denomination notes. More than 1,200 trawlers laden with fish are stranded at different parts in Diamond Harbour, Kakdwip, and Frazergunj as 'aratdars' (fish-wholesalers) of Nagendra Bazar, the biggest wholesale fish market in South 24-Parganas, have stopped buying fish from anglers because of liquidity crunch. Nagendra Arat Merchant's association general secretary Jagannath Sarkar said: "We don't have enough currency notes of lower denominations to buy the huge quantity of fish. Fishermen have stopped accepting other notes." "If off-taking does not happen fast, they will rot in the trawlers.

Each trawler has at least fish worth Rs 2.5 lakh. Not only will there will be a huge loss, there will be serious shortage of supply of fish in city markets, particularly those in Kolkata," said Satinath Patra, general secretary of Fish Trawlers' Owners Welfare Association. Patra anticipated a loss of livelihood and imminent crisis in the fish economics of the state, if there is no steady supply of new currency notes. As wholesalers cannot off-take fish with the banned currency notes, 'aratdars' themselves are not accepting these currency notes from the retailers. "There is fear psychosis that has ruined the atmosphere of trust and sanity. Even a day ago, people were trading on credit. Now, going gets tougher," said Bijon Maity, secretary of Kakdip Fishermen's association. The crisis has started hitting parts of the city from Monday itself. "We cannot buy fish from 'aratdar' as wholesalers are not accepting banned notes today. Till yesterday, they accepted notes. If aratdars don't accept notes, we cannot accept these notes. So, there was hardly any fish here. There will be serious crisis from Tuesday onwards," Lake Market fish retailer Amar Das said on Monday. To clear the stock lying with retailers, the price of fish has fallen drastically in the local fish markets. Fish-sellers rued there has been more than 70% slash in the number of customers they have been getting ever since Rs 500/Rs 1000 were withdrawn from the market.

The Janbazar fish market looked almost deserted in the evening with fishmongers saying they are not beengetting customers despite the drastic fall in fish price. Katla sold at Rs 250 though it had touched Rs 400 before demonetisation. The Janbazar market is popular for different varieties of prawns which sold at least Rs 100-Rs 150 cheaper than what it was earlier, said fish-seller Hira Shaw. Tangra, Bhetki and Aar sold between Rs 280 and Rs 300, at least Rs 80-100 cheaper than their normal price. "The supply has dried up at the Howrah Fish wholesale market because Rs 500/Rs 1000 notes are not being accepted at all since the weekend. Naturally, we are not being able to pick up our usual supply," said Hira Shaw, a fish-seller whose grandfather had started the business 50 years ago.

### **West Bengal: Demonetisation cripples fishing industry in Bengal**

[http://www.thehindu.com/news/cities/kolkata/demonetisation-cripples-fishing-industry-in-bengal/article9340809.ece?utm\\_source=RSS\\_Feed&utm\\_medium=RSS&utm\\_campaign=RSS\\_Syndication](http://www.thehindu.com/news/cities/kolkata/demonetisation-cripples-fishing-industry-in-bengal/article9340809.ece?utm_source=RSS_Feed&utm_medium=RSS&utm_campaign=RSS_Syndication)

"By about 4 a.m. all shops – about 170 – were open on both sides of an unkempt asphalt road. The shops that were selling fish at a wholesale rate were chock-a-block by 5 a.m.. But many of them were not engaging with the trading. They were small rural fish farmers and sellers, big purchasers from Kolkata. They assembled in Malancha, a gigantic wholesale fish market, about 100 kilometres south of Kolkata, in Sunderbans area, to buy or sell fish like any other day. But the market is 40% to 50% “dry, they said. “We assembled early morning, out of habit, said Gorachand Mondal, a small fish farmer from nearby Chaita village. Malancha is perhaps the

largest wholesale fish market in south Bengal, in North 24 Paraganas district, auctioning about 15 thousand kilogram of fish every day.

There are at least a dozen such wholesale markets in south Bengal. And, all are distressed over the demonetisation drive. Grim situation The owner of one of the biggest wholesale depot in Malancha – Sonali Fish Centre – belongs to Azibor Rahman. Mr Rahman is in the trade for nearly 50 years but has never witnessed such depression. “We generate business in lakhs but the banks told us to deposit less than Rs. 2.5 lakh. Moreover, the buyers are tendering Rs. 1,000 notes, which is difficult for us to accept. How are banks benefitting if we are not depositing? Mr Rahman said. With an withdrawal limit of Rs. 10,000 a day, Mr. Rahman refused to pay change to his son, Amjad Ali Molla, a trainee trader. He literally cried before his dad tendered few Rs. 100 notes. The situation is grim for small farmers. “I earn about Rs. 400 to Rs. 500 daily and spend about Rs. 200 to run the household expenses. We deal in Rs. 100 notes and not in Rs. 1000 notes which have disappeared, Gorachand Mondal said. In his village, the families are incapable of supporting each other. “All ran out of change...in next two days we will be on road, begging. He shared another alarming information.

“Many of the farmers here are illiterate and keep the cash at home. It's legal money but they are scared to go to bank traditionally. They are now short-changed by the local agents who are charging 20 per cent for providing ‘change,’” said Mr. Mondal. While Mr. Mondal is at the bottom rung of the trade, Mr. Rahman, a wholesaler, auctions the stock to buyers – traders from cities – charging sellers a tiny fee. They both have now started gasping for lower denomination notes as the big purchasers, like Abdul Rashid Molla, also a supplier to big cities, are staying off the market. Instead of entering the Malancha market, 60-year-old Molla is sitting in a tea stall; chewing tobacco and glancing through newspaper. “They are all like brothers and there is no point in fighting for Rs. 100 notes, he said. The absence of men like Mr. Molla, who supplies to Kolkata's retail outlets, is putting a strain on the market. The worst sufferers, however, are small farmers like Gorachand Mondal as they do not have cash savings in small denomination.

### **India and Bangladesh: Indian Coast Guard rescues 16 Bangladeshi fishermen from West Bengal coast**

<http://www.newkerala.com/news/2016/fullnews-142004.html>

"It is reported that the incident took place on November 3 when the fishing boat of the Bangladeshi fishermen had sunk. The Indian coast guard will now hand over these Bangladeshi fishermen to the Bangladesh coast guard on November 14th.

### **West Bengal: Fishermen bodies recovered from shipwreck in West Bengal**

<http://www.newsx.com/national/45550-fishermen-bodies-recovered-from-shipwreck-in-west-bengal>

"The bodies of two missing fishermen were recovered from a capsized trawler in the Bay of Bengal close off West Bengal's Bakkhali but two to three are still missing, police said. About 30 fishermen went missing after the trawler capsized on Friday. "Twenty-five of them have been rescued. Two bodies have been found. Two-three others are still missing," said a police official. Coast Guard divers are trying to find the missing fishermen. Personnel from Namkhana police station are also at the spot supervising the rescue operations. Fishermen have been advised not to venture into the sea due to the inclement weather triggered by a deep depression centred at west-central Bay of Bengal.

**West Bengal: Vietnam willing to export seafood to West Bengal**

<http://indianexpress.com/article/cities/kolkata/vietnam-business-giant-shows-interest-in-seafood-trade-with-bengal-3736168/>

"Vietnam is exploring possibilities to trade in seafood with West Bengal, which has a wide market for marine food. Seafood could turn out to be a viable trade option between West Bengal and Viet Nam, according to a delegation from Viet Nam currently touring the city of Kolkata. "We export a considerable amount of seafood to other countries. West Bengal has a good market for seafood, and it has great potential for trade. We already import seafood from Mumbai, Kerala and other states in the country and would be happy to do business with the state," said Nguyen Hoang Giang, part of the five-member delegation to the city. The delegation held an interactive session with the business community to explore trade opportunities in the state. The meeting was organised by the Bharat Chamber of Commerce, a national business forum. "We have come here on the occasion of a book release at the national library and also wanted to look into the business opportunities in the state," said Ho Hoia Ha, chief of the International Cooperation Division. Rajkumar Agarwal, chairman of the global trade standing committee of the Chamber, said that there are different industrial sectors in which the two countries are co-operating for mutual benefit and can work further to strengthen their relationship. The current trade between the two countries stands at \$1 million

**West Bengal: Rs.10 Lakh for each mandi for setting up waste management plants under e-Nam scheme**

[http://www.business-standard.com/article/government-press-release/rs-10-lakh-for-each-mandi-for-setting-up-waste-management-116110201136\\_1.html](http://www.business-standard.com/article/government-press-release/rs-10-lakh-for-each-mandi-for-setting-up-waste-management-116110201136_1.html)

"Union Agriculture & Farmers Welfare Minister, Shri Radha Mohan Singh here today brief the media about the outcome of Swachhta Pakhwada and initiatives taken by the Ministry. Shri Singh informed that as per the directions of Honble Prime Minister of India, the Swachhta

Pakhwada was observed this year from 16th to 31st October, 2016 in all the three Departments under the Ministry of Agriculture & Farmers Welfare, namely Department of Agriculture, Cooperation & Farmers Welfare, Department of Animal Husbandry Dairying & Fisheries and Department of Agricultural Research & Education. Going out from the confines of the office premises Swachhta drive was carried out in Agricultural Mandis, Fish Markets & villages near each Krishi Vigyan Kendras (KVKs). During the Pakhwada focus was laid to put certain measures that are dynamic and to be continued beyond Pakhwada period. Some of the activities carried out are as under: Cleaning drives were undertaken in 271 Agricultural Mandis. Further, Swachhta Action Plan has been prepared in which it was decided to make provision of Rs.10 lakh for each mandi for setting up waste management plants under e-Nam scheme.

It was also decided that under one flagship scheme, namely RKVY, managed by DAC&FW one percent funds will be spent on Solid and Waste Management. Besides this, various offices under the three Departments were cleaned involving, inter alia, installation of sensors in toilets, installation of motorized grinder and weeding out of unwanted records, removing encroachments and all junk lying in the offices. Honble Agriculture & Farmers Welfare Minister was involved in cleanliness & plantation drive at DAC&FW (Hq.) in Krishi Bhavan on 26.10.2016 and at Agricultural Mandi in Chandigarh on 18.10.2016. Centers of All India Soil & Land Use Survey of India (SLUSI), a subordinate office under DAC&FW, involved local MPs/ public representatives in the Swachhta Activities. Further, a Compost pit has been inaugurated in SLUSI, Kolkata. Compost Machines are being installed in the Mandis in coordination with States. The National Fisheries Development Board (NFDB),

Fishery Survey of India (FSI), Central Institute of Fisheries Nautical and Engineering Training, (CIFNET), National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT), Central Institute of Coastal Engineering for Fishery (CICEF), in coordination with State/UTs conducted the following major activities during the Swachhta Pakhwada: i. Cleaning of 50 wholesale & retail Fish markets in 15 states was done and also awareness about maintenance of cleanliness was spread during this drive. ii. Cleaning of Institute Buildings and premises by all the Subordinate institutes under Fishery Division. iii. Awareness camps including Padayatra (procession) on hygienic Fish handling, maintaining cleanliness in fish markets, cleanliness in processing, cleanliness in marketing etc. and distribution of Pamphlets. iv. Conducting of State level Workshops viz., (i) Recycling of waste through integrated fish farming for NE States at NFDB NE Center, Guwahati (ii) Waste Water Aquaculture, Nalban, Kolkata etc. Honble Members of Parliament, State Fisheries Minister from West Bengal, Mayors and Councilors from Kerala and Tamil Nadu, Senior officials from the State Fisheries Department, District Collectors etc. actively participated in the Swachhta Pakhwada activities. Minister of State for Agriculture & Farmers Welfare, Shri Parshottam Rupala also participated in cleanliness activities at Amreli (Gujarat).

Also, the Fish vendors, retailers, net makers, students, staff and trainees of the institutes, members of fisherman associations and general public were also involved in the various activities under taken during Swachhta Pakhwada across the State/UTs. The awareness camps/cleaning drives were taken up across the country with the help of State/UT Governments. Some of the notable activities were held in Bilaspur and Durg in Chhattisgarh, Guwahati, Silchar, Cachar in Assam, Bishnupur in Manipur, Nellore in Andhra Pradesh Cuddalore and Nagercoil in Tamil Nadu and also in Kolkatta Bangalore, Lucknow , Ranchi and Kochi. Department of Agricultural Research & Education/ Indian Council of Agricultural Research, celebrated Swachhta Pakhwada during Oct 16-31, 2016.

The ICAR Head Quarters in New Delhi, all the 102 Research Institutes and 648 KVKs took active part in the Pakhwada activities and conducted a wide range of activities which included, cleaning of campuses, residential areas, villages and localities in their vicinity in addition to conducting Seminars, awareness camps, rallies, street plays and expert talks. Through KVKs and institutes promotion of Swachhta activities was done in 3040 villages with the active participation of farmers and village youth. Efforts were made to promote clean farming technologies and package of practices and make best use of farm waste. Central and local leaders, Senior Officers from the Institutes and the ICAR Headquarters participated in the events organised at various places across the country during the pakhwada.

IARI, New Delhi has set up a team of sanitation inspectors in each block of their residential complex who organise the dry and wet waste generated from each household separately and recycle it appropriately through the participation of households. On 27th October, 2016 a special Seminar on the topic "Creating Wealth from Agricultural Wastes" was organised at KVK Shikohpur (Gurgaon) in which Minister of State of Agriculture and Farmers Welfare Shri Sudarshan Bhagat was the chief guest. Various technologies making best use of agricultural wastes like, preparation of bio compost, vermin-composting, whey utilization, straw enrichment, waste water recycling, cotton waste management, fisheries waste management and engineering technologies were showcased.

More than 350 farmers and Scientists participated in the event. Based on the daily and final reporting of the swachhta activities, the awards shall be given to the outstanding performers in the competitions announced for offices in ICAR Head Quarters, ICAR Research Institute and KVKs and these awards will be given on the foundation day of the ICAR. In order to sensitize state governments, a video conference was held on 27.10.2016 with representatives of States/ UTs and they have been briefed about the Swachhta Pakhwada Activities". They have also been requested to make adequate provisions in their existing Schemes to prepare Compost from farm wastes. Further, DD Kisan has been asked to make two films- one of Solid Waste Disposal Technology of NCOF and the second on Liquid Waste Disposal technology developed by ICAR. DD Kisan will show these films in their existing programmes. Rivers play an important role in Swachh Bharat Abhiyan. Ganga is a symbol of cleanliness as well as purity since time

immemorial in India. To make the Ganga clean again, it is imperative that organic farming should be promoted in the townships and villages along the banks of the Ganga to minimize the use of harmful pesticides, fertilizers and other chemicals in agriculture.

This Ministry has signed a Memorandum of Understanding on 16th September 2016 with Ministry of Water Resources, River Development and Ganga Rejuvenation (MoU). Under this MoU, the people living in 1657 clusters of 1657 Gram Panchayats from Uttarakhand to West Bengal will be motivated to carry out organic farming to reduce use of polluting chemical fertilizers and pesticides to ensure that the Ganga is restored to pristine purity. During the interaction with Media, Minister of State for Agriculture & Farmers Welfare, Shri Sudarshan Bhagat, Secretary DAC, Shri S.K. Pattanayak, Secretary, DADF, Shri Devendra Chaudhry and DG, ICAR and Secretary, DARE, Dr. Trilochan Mohapatra were also present.

### **Assam and West Bengal: Bengal traders throng Dhubri markets for 'hilsa'**

<http://www.assamtribune.com/scripts/detailsnew.asp?id=oct2816/state051>

"With the price of hilsa fish dropping drastically in the fish markets of Dhubri district, the traders from neighbouring West Bengal are thronging the markets in great numbers. The price of the 'King of Fish' has hit all-time low in the markets of the town as the hilsa that normally costs Rs 900 to 1,200 per kg has come down to Rs 300 to 350 per kg. In these rates, the hilsa is available especially in the fish markets of Dhubri, Gauripur, Golakganj and Bilasipara. Interestingly, traders from the neighbouring State and from other parts of Assam can be seen every year during this period in the Dhubri markets for bulk purchase. "We have almost made it a part of our routine to visit Dhubri during this time of the year to buy hilsa because of the price drop, said Pradip Sarkar, a trader from Coochbehar, who is in Dhubri for the purpose. "I am trying to buy hilsa as much as possible.

As this fish is always in demand in West Bengal market, he added. Meanwhile, Biman Goswami, another trader from Guwahati, said, "This fish has great demand even in Guwahati. We have been trading hilsa from Dhubri for years, but in recent years its availability has become very good. However, according to local fish traders, such availability of the fish has not helped them much. Due to availability of hilsa during this time they have to sell them at a loss. "Although, the trade has increased but the business for the local traders has not been substantial, said Kabil SK, a fish wholesaler of Dhubri town. "We cannot preserve hilsa for long. We have to sell it fast and the price is dropping daily in an alarming rate, because of which we need to sell the fish at a loss, he added. Explaining the reason behind such availability of hilsa in Dhubri, officials of the Fishery Department said that the Bangladesh govt prohibits fishing during this time of the year as this is the season for fish like hilsa to lay eggs. The hilsa fish always swims upstream to lay eggs and the parts of Brahmaputra river and its tributaries in Dhubri are in the upstream. So, the fish lay eggs here.

### **West Bengal: New Town pisciculture gets push from Hidco**

<http://timesofindia.indiatimes.com/city/kolkata/New-Town-pisciculture-gets-push-from-Hidco/articleshow/54888775.cms?null>

"Prodded by chief minister Mamata Banerjee, about 100 hectares water bodies situated in different locations of Rajarhat New Town were handed over to the state fisheries development corporation (SFDC) by Hidco officials for proper maintenance and fish farming. Sources in the state secretariat said the decision to hand over the waterbodies to the fisheries department is based on the CM's instruction in the last administrative review meeting at Town Hall. "In the meeting, CM had advised that for proper farming of fish, waterbodies under different civic bodies should be handed over to the fisheries department," said an Hidco official. Accordingly, Hidco officials identified waterbodies located adjacent to Upasanasthal, the water treatment plant in Action Area I, the Eco Urban Village, the SWM Area and Diler Bheri and handed them over to SFDC on a 50:50 profit sharing basis after a moratorium of one year. SFDC managing director Soumyajit Das said, "The waterbodies will be developed as aqua hubs where fish farming will be done. Besides, stalls selling various fish preparations will also be set up. We are primarily focusing on New Town as the demand for having such fish stalls are high."

### **West Bengal: Plastic unit pollutes canals, fish farms**

<http://timesofindia.indiatimes.com/city/kolkata/Plastic-unit-pollutes-canals-fish-farms/articleshow/54888801.cms>

"Toxic sludge being released by an illegal plastic factory into the canals that feed fish farms in East Kolkata Wetlands has triggered concern among ecologists. Not only is the toxic waste affecting fish workers, there are fears of chemicals entering our food chain through the fish and vegetables cultivated in the belt situated along the eastern fringes of Kolkata. The plastic factory has been set up illegally in the EKW, a Ramsar site that is supposed to be protected against such encroachment. Unlike other Ramsar sites, fish farms are integral to the EKW as it acts as Kolkata's natural sewage treatment plant. But with the water being contaminated by toxins released by the unit, ecologists are wary of the impact.

Kolkata's rainwater and sewage accumulations are pumped out through a dry weather flow (DSF) which operates during dry seasons and storm water flow (SWF) which functions during the rainy season. Kolkata has a pair at Topsia and one more at Dhapa lockgate. The plastic unit which is allegedly releasing unknown toxins is situated off an embankment on the canals that flow out from the Dhapa lockgate. "The factory started functioning a couple of months ago," said Rajat Mandal, who stays near Dakshin Gorumara Bheri. "We saw black smoke spiral from the building; it had a distinct smell of burnt polymer. "The alleged factory is only a minutes'

walk from Bantala lockgate. WBPCB chairman Kalyan Rudra said the Central Pollution Control Board had forwarded a complaint to the South 24-Parganas DM. We have relocated factories that operated in Kolkata or facilitated their switch to fuel that are less polluting. Since this unit is not registered, it has not come under our scanner. But we will definitely look into it," he said. Illegal institutions operating on the wetlands will have calamitous effects as they do not follow any emission restrictions or guidelines," said environment activist Bonani Kakkar.

### **West Bengal: Fish fanatic's day out**

<http://www.thedailystar.net/lifestyle/special-feature/fish-fanatics-day-out-1300063>

"Why fish? Other than the numerous health benefits, nothing provides as much variety as fish does. From catching the liveliest fish to finding the right spices, the Bengali cuisine is closely intertwined with the massive variety of these riverine delicacies. You can either deep-fry a koi or a rupchanda, or enjoy a magur curry with onions. And nothing beats a spicy shorshe-lish on a rainy day! Moreover, fish also allow for the sense of nostalgia for the good ol' days. You probably remember watching them make tiny ripples on the pond's surface, occasionally showing off their shiny or scaly skin, and how delightful they tasted when your mother or grandmother cooked them right after they were caught.

**How to detect bad fish** Before the search for the right fish starts, you need to learn to differentiate the good from the bad. What gives stale fish away is its strong unappealing stench. Their once shiny skin will be dry, and their clear eyes, cloudy and dull. Soon enough the scales flake off, and the fish itself becomes soft. **To start off the search** A real fish lover would go out of his way to find the perfect fish - fresh with bright red gills. Right outside the city are riverine areas like Bhairab and Arichaghat where fishermen actively spread their nets to catch only the best ones from the river giants - Meghna and Padma. From faisha to boal, only the freshest ones are selected, while the rest are put back into the river. Though mainly sold in wholesale auctions, you could probably still get some fishermen to give some to you at a good price. If you do not mind looking a bit further, the Chandpur fish markets are a real treat, where fish are directly caught from Meghna and sold on-spot.

**The city hotspots** One hotspot for fish lovers is the Sowarighat market. Being the hub of the city fish business, it supplies its delicacies to many stores inside the city too. Coming straight from Barisal, Khulna and Faridpur, freshwater fish in Sowarighat excel both in texture and in taste. You can find pabda at around Tk800 per kg or even a 10kg rui straight from Meghna at around Tk600 per kg. While Saydabad hosts the biggest roadside wholesale market of the city, Karwan Bazaar dominates with its massive collection of both freshwater and sea fishes. You can find a medium sized telapia with as low as Tk150 per kg, or opt for shorputi costing around Tk200 per kg and prawns from Tk500 to as high as Tk2000, depending on its size. In fact, sea fishes such as korals and rupchandas are also sold at rather high prices. Moreover, Mohammadpur Krishi Market, Town Hall Market, and New Market are also popular places for fish lovers, but be sure

to arrive at the earliest hour if you want the best bunch! BFIDC fish With showrooms in Karwan Bazaar, Motijheel and a few other places, Bangladesh Fisheries Development Corporation is reputed for selling top quality fish by maintaining the cold chain. This is a process of directly freezing the fish as soon as it is caught, thus allowing the fish to retain its original freshness. Directly transported from the Chittagong sea port, BFIDC offers an extensive range of sea fish to choose from, often travelling around the city in vans to make it easier for the busy city dwellers.

All the restaurants Even the booming restaurant business in Dhaka has understood the fish fascination, and restaurants such as Fish And Co. and Manhattan Fish Market are just one of the many restaurants offering a variety of fish dishes, both rich in colour and flavour. From the international salmon to the deshi snappers and shrimps, they serve poached, grilled, baked or even flamed fishes, with all sorts of exotic sides. Taking the fishy business up a notch, these adaptations have added an international touch to the favoured element of traditional cuisine. Where the fish at? And yet, our love for fish remains at risk. With rivers being clogged up with dirt, many of our fishermen are now left wondering where our wonder fish hilsa is, although this year there seems to be a boon in hilsa. Similarly, the markets no longer have the massive boal fish or the tiny kachkis as almost half of the top quality fishes, especially hilsa, are exported abroad. But the true fish-fanatics will find a way, and with cautious fishing, our rivers will once again be filled with the glorious ayr and chapila.

### **West Bengal and Odisha: Coasts guards go on high alert in West Bengal and Odisha**

<http://timesofindia.indiatimes.com/city/kolkata/Coasts-guards-go-on-high-alert-in-West-Bengal-and-Odisha/articleshow/54718445.cms>

"The Coast Guard has increased vigil along the West Bengal and Odisha coasts after intelligence inputs of possible sea-borne strikes by terrorists during the ongoing festive season. K R Nautiyal, inspector general, Coast Guard North East Region, directed all district commanders to remain alert and respond to any situation that may arise due to the crisis along India's western border. ""Commanders of the Coast Guard district headquarters at Haldia and Paradip and commanding officers of Coast Guard air squadrons at Gopalpur, Fraserganj, Bhubaneswar and Kolkata attended a two day works conference in Kolkata during which the situation was discussed,"" said Deputy Commandant Avinandan Mitra of the NE Region headquarters. The performance of the Coast Guard was also assessed during the conference and it emerged that the headquarters had maintained 1,256 ship days in the last year. This amounts to patrolling by at least three ships per day. The air squadrons at Kolkata and Bhubaneswar also clocked 3,243 flying hours for coastal surveillance that amounts to more than nine hours per day. ""More than 250 precious lives were saved at sea from stranded fishing boats in the first ever Indo-Bangla joint search and rescue mission in August 2016. Two coastal security exercises with the state establishments and other agencies were carried out to keep the coastal security system fully

operational. Apart from this, 65 community interaction programs were carried out in all fishing hamlets of West Bengal and Odisha to sensitize fishermen about safety at sea and various laws governing them," Mitra added.

### **West Bengal: Bengal Fisheries Department set to open 'All Fish' outlets to attract tourists**

<http://knindia.co.in/news/newsdetails/state/bengal-fisheries-dept-set-to-open-all-fish-outlets-to-attract-tourists>

"In order to boost the sector employing hundreds to micro entrepreneurs and attract tourists, the West Bengal Fisheries department will open its food stall "All fish before the Pujas. The West Bengal Housing and Infrastructure Development Department will hand over 100 hectare of water-bodies in New Town to the State Fisheries Department Corporation. In a release, AITC said a space in Eco Park's Heliconia garden will also be given to SFDC to set up its stall "All Fish. The decision to hand over the water bodies was based upon a directive of the Chief Minister Mamata Banerjee that different departments should hand over water bodies to the fisheries department for fish farming at a meeting presided over by her on June 3 in the Town Hall.

Accordingly, the water bodies at Upasanashthal (8.74 hectare), water treatment plant (30 hectare), Eco Urban village (15 hectare), SWM area (30 hectare), Diler bheri (17 hectare) were identified to be handed over to SFDC on a 50: 50 profit sharing basis after a moratorium of one year. The SFDC would try to open the "All fish stall in Eco Park by October 2. HIDCO would source its fish requirements for Café Ekante from SFDC as much as possible. SFDC already runs a stall in Nalban. The All Fish stall will be a star attraction at Prakriti Tirtha as the tourists from other states and countries would love to taste the various preparations of fish, staple to Bengali cuisine. As the "All fish stall will be opened before the Pujas it is likely to grab attention. A similar stall is also being opened opposite Nabanna, the State Secretariat, AITC added.

### **West Bengal: Indian fishermen in the Sundarbans risk tiger attacks in battle for survival**

<http://www.thenational.ae/arts-life/the-review/indian-fishermen-in-the-sundarbans-risk-tiger-attacks-in-battle-for-survival>

"I was to hear this statement several times during the four days I spent in the Sundarbans earlier this month. The first time, it was Monirul Tarafdar. I was staying in his small houseboat and he recalled how his father had managed to escape a tiger attack in the 1990s. Three of the co-fishermen were "taken by the tiger" on that occasion, said the boat man, recounting the incident in graphic, hair-raising detail. "There was a sudden jolt... My father turned around to see the other boatman had been pawed by the tiger, and was now being dragged into the forest," he told me.

""The mangrove roots that jut out of the ground pierced through his body... My father raised an alarm, gathering his co-fishermen. They followed the blood trail. In the fight that ensued, the tiger struck down two more fishermen... Father and his mates retreated. They went back to the area after gathering a large group of villagers. But by then, it was all over... There were mangled remnants of bodies, but it was impossible to identify who was who."" Tiger tales span generations in the Sundarbans, the largest block of mangrove forests in the world on the border of India and Bangladesh. They abound among people, in the islands, river channels and creeks. The area is home to about 260 bird species and is a reserve for threatened species such as the estuarine crocodile and the Indian python. But it is also one of the largest reserves for the Bengal tiger. Attacks are common and much discussed among people in the 52 inhabited islands on the Indian side, several of which I visited.

Most people here depend on fishing for a living, barring a few who cater to tourists. Figures have not been released yet but officials say deaths from tiger attacks in the Sundarbans have decreased. The forest department credits fencing off forest areas with polypropylene nets plus outreach activity in villages for this drop, while also taking pride in the latest increase in tiger numbers. But people in the area say many deaths are not reported. Worse, in the absence of alternative livelihoods, they hardly have a choice but to stare death in the face. ""Deaths due to tiger attacks fall in three categories,"" says Sundarban Tiger Reserve field director N Mallick. ""The first involves those who have a permit and are killed in the reserved forest area where fishing is permitted. The second involves those who have a permit but are killed in the core area. The rest are those who have no permit and are killed."" All those in the first category are officially recognised and recorded as tiger killings. Their deaths, in the area where they are allowed to fish, become official statistics.

Their families also receive compensation, although people say it takes almost a year for the money to come through. Several cases in the second category and almost all cases in the third however, are never registered as deaths from tigers, says Mallick. There have been six to seven reported cases since the start of this year, he says, but concedes the number may be higher. Atanu Raha, former principal chief conservator of the forests of West Bengal, says greed for larger catches tempts some people to sneak into the core forest, thus resulting in unregistered deaths. But people in the estuary think differently. ""Relatives of those mauled to death by the tiger in the core area or those without permits seldom want to deal with the hazard of a police case; forget coughing up a massive fine and having their boats detained for defying laws. They often end up not reporting the matter to authorities,"" says Ashok Mondal, a Sundarbans resident who works as a volunteer guide with the forest department. Several fishermen in the area told me why they dare to take the risk.

A quintal (100 kilograms) of crabs fetches 60,000 to 70,000 rupees (Dh3,291 to 3,840) at the Canning auction market. For three fishermen on a non-motorised boat, a quintal of crabs is an

easy catch over two good days. People say that in order to earn money to survive, they would wager their lives once in a while.

According to the government, almost 95 per cent of the 4 million people in the Sundarbans on the Indian side depend on agriculture, while about 50 per cent comprises landless labourers. During the agricultural off-season, people resort to fishing and risk their lives in the process. The tiger also does not abide by the boundaries of the national park and deaths do occur from tiger attacks in the reserved forest area where fishing is permitted. According to the 2013 tiger census undertaken using camera traps, the count has risen to 103 tigers in the Sunderbans. In other words, there was a tiger for every 20 square kilometres of the delta. Bidhan Bain, president of Jhorkhali division of the Trinamul Congress that is in power in West Bengal, says there is a case for relaxation of the prohibition on fishing in the core area.

""We don't damage the forests or attack the tiger and our lives are at risk anyway. So why not relax the laws?"" asks Bain. He repeats what several others had told me: that people in the Sundarbans have no other means of livelihood and successive governments have done little for the vulnerable fishing communities. Contrary to the long-standing demands of the fishermen's union, now defunct, there are hardly any landing points in the Sundarban islands, nor any cold storage facilities or auction centres. The forest department earns a healthy revenue from tourist permits each season, but very little of this money flows back to the people, for their benefit. ""Only NGOs pour in increasing amounts every year to protect the tiger,"" says Tarafdar, ruing how his people are destined to live life on the edge. Aritra Bhattacharya is principal correspondent with The Statesman and a PhD scholar at the Centre for Studies in Social Sciences, Calcutta.

### **West Bengal: Fish Landing Centre comes up at Guptapara**

<http://echoofindia.com/port-blair-fish-landing-centre-comes-guptapara-115765>

"At a simple function held at the Fish Landing Centre premises, the Lt Governor lighted the traditional oil lamp and unveiled the plaque marking the inauguration of the Centre. Soon after inauguration, the Lt Governor also inspected the Fish Landing Centre. Member of Parliament, Shri Bishnu Pada Ray, Chief Secretary, Shri Anindo Majumdar, Adhyaksha ZPSA, Smt. Minati Biswas, Up- Adhyaksh, Shri Subir Chander, PRI members, senior officers of the Administration and a good gathering of people of Guptapara area including fisher folk. Addressing the gathering on the occasion, the Lt Governor expressed his happiness over the inauguration of the FLC, which he said, has fulfilled the long pending demand of the people especially fisher folk of Guptapara and its adjoining area. With the new facility in place, the fishermen can now take their fishery related activities in more organized way, the Lt Governor added.

The Lt Governor further stated that as per the master plan of the Administration, 14 FLCs have been planned out of which, six FLCs have so far completed, work on another six FLCs is

underway while work on another two FLCs is yet to start. These FLCs are being constructed to further upgrade and improve fishery related activities in these islands, he added. Referring to the enormous potential for fisheries in these islands, the Lt Governor stated that there is need to exploit the vast potential of natural resources available in this sector. He said that directions has been issued to the Chief Secretary and concerned officials to undertake survey, research & development and to introduce latest technology so that maximum potential in this sector can be tapped. This sector has all the potential to solve the un-employment problem in these islands, he said and added plan are being made to invite fishermen from other countries for imparting training to our fishermen.

Outlining some of the development projects of Administration in sectors like power and telecommunication, he stated that by 2018, the entire A&N Islands will be converted into green energy efficient Islands by utilizing solar generated power and other eco friendly power generating sources. The Govt. of India is committed to establish renewable sources of energy, including solar, wind, tidal waves and hydraulic energy, to meet the power requirements of the Islands, he said. Further, the work for establishment of 100 MW Solar Power Plants under Solar Parks has already been initiated in these Islands. Experts will also be invited to explore the feasibility for establishing wind as well as tidal wave energy in the Islands, he informed. Giving the example of Raj Niwas where the entire power requirement is being met through solar energy, he wanted that every Govt. establishment and institution should install rooftop solar panels to meet the power requirements.

As a first step, 13 Govt. office buildings in Port Blair and 70 Panchayat buildings spread in different parts of the islands have been identified where roof top solar panels will be established. He further stated that about 200 public representatives drawn from PRIs and Municipal Council will be urged to install roof top solar panel in their respective houses to become role models for others to emulate. He also appealed to the general public as also PRI members to install the same in their respective houses so that the goal of converting these Islands into pollution free Islands can be achieved by December 2018. The Lt. Governor also urged the general public to make best use of Govt. schemes providing subsidy towards installation of solar panels in their respective houses. Referring to the connectivity problem being faced by the people of these islands, the Lt Governor stated that cabinet nod for the undersea cable project connecting Chennai-Port Blair-Car Nicobar is expected soon. He further informed that he will personally take up the matter with the concerned authorities in mainland during his visit shortly.

In his address on the occasion, the Member of Parliament, Shri Bishnu Pada Ray expressed his happiness over the inauguration of much awaited project fulfilling the long pending demand of the people of Guptapara and its adjoining areas. He also showered all praise to the Fisheries Department and the ALHW for their effort in timely completion of the project. He also informed the fisher folk about the different schemes for the fishermen such as house repairing, group insurance scheme, and dinghy repairing scheme in which the govt. of India will provide financial

assistance. He underlined the need for conducting a meeting of the farmers and fishermen to know more about their need and grievances.

He also informed the gathering that 200KM Road having a width of five and a half meter with bridges will be constructed. He further urged for expediting the work under Pradhan Mantra Grameen Sadak Yojana (PMGSY). Mentioning about the crocodile attacks in recent times, the MP urged the Forest Department to come out with literatures in different languages with do's and don't's so as to avoid crocodile attack. The MP further urged the fisheries Department to distribute local fish seeds to farmers/rural people so that they can rear it in their ponds which, according to MP, will fetch them good money.

The MP further urged for allowing Fisheries Federation to open Diesel Outlet at Guptapara similar to one at Junglighat Fish Landing Centre (FLC). In his address on the occasion, the Adhyaksha Zilla Parishad, Smt. Minati Biswas thanked the MP, Administration, ALHW and Secretary Fisheries for fulfilling the 40 year long pending demand of the residents of Guptapara area. She wanted that instead of allotting land to NTPC, the same may be provided to Panchayat so that public utility infrastructures viz. children park, gym can be created. She urged for opening a diesel outlet and ice- plant so that fishermen need not go to Port Blair to purchase diesel and ice piece. Smt. Minati Biswas urged the fisheries department for equipping the dinghies of the Fishermen with GPS to ensure their safety. Welcoming the chief guest and others present on the occasion, the Secretary Fisheries, Smt. R. Menaka said the inauguration of the FLC will help upgrade the existing environmental condition of the area and improve the quality of life of the local population particularly fisher folk. About the FLC, she said that the consultancy work for conducting various feasibility studies and preparation of Detailed Project Report(DPR) for 14 FLCs including Guptapara was carried out by M/s west Bengal Fisheries Corporation, Govt. of West Bengal Undertaking.

The work for the FLC at Guptapara was awarded to ALHW for Rs. 287.90 lakhs. The work commenced in the year 2014 and completed in July 2016, the Secretary added. The inauguration function concluded with the vote of thanks proposed by the Director Fisheries, Shri J. Chandrashekhar.

### **West Bengal: Stakeholders discuss security challenges along West Bengal coastline**

<http://timesofindia.indiatimes.com/city/kolkata/Stakeholders-discuss-security-challenges-along-West-Bengal-coastline/articleshow/54352643.cms>

"Increased electronic surveillance of the Sundarbans region, issue of biometric identity cards to fishermen and fitment of transponders on fishing boats less than 20 metres in length were among

the issue discussed at the Vth Apex Committee Review Meeting on Coastal security for West Bengal in Kolkata on Thursday. The meeting, held at INS Netaji Subhas was co-chaired by chief secretary Basudeb Banerjee and Vice Admiral HCS Bisht, flag officer commanding-in-chief, Eastern Naval Command. The others who attended included state home secretary Malay Kumar Dey, K C Nautiyal, commander, Coast Guard, Region North East, Harmanpreet Singh, additional DG and IG, Coastal Security and Commodore Subroho K De, naval officer-in-charge, West Bengal. "During the meeting, various initiatives taken by the state, Navy and Coast Guard towards augmentation of coastal security were reviewed and deliberated. The issues that emerged from the recently concluded coastal security exercise along West Bengal were also discussed," said De. Among the other measures discussed to tighten coastal security were enhancement of night operation capabilities of patrol boats, setting up of more marine police stations and e-registration of fishing boats. The induction of ex-servicemen in the coastal marine police was deliberated upon. Various agencies also discussed the issue of crossing over of the International Maritime Boundary Line (IMBL) by Indian fishing boats. "The Sundarbans continues to remain a matter of concern. Due to the terrain, it is difficult to physically monitor all activities in the area. Hence, the need for electronic surveillance was discussed. Both state and central agencies are very keen to plug all gaps in this region," a senior official said.

### **West Bengal: Pirates kidnap 11 fishermen from Sundarbans, valuables looted**

<http://www.thefinancialexpress-bd.com/2016/09/09/45228/11-fishermen-kidnapped-in-Sundarbans>

"Pirates kidnapped 11 fishermen and looted valuables from their trawlers at Dhanshiddhir Char in Mongla upazila in the Sundarbans early Friday. Wishing anonymity, some fishermen said 10-12 pirates of infamous gang 'Sagar Bahini' swooped on 11 fishing trawlers in the Sundarbans in the early hours of the day. At one stage, the robbers looted fish and nets worth Tk 0.5 million (five lakh) from the trawlers and picked up 11 fishermen. When resisted, the looters also beat up six fishermen, leaving them injured. They also demanded Tk 0.1 million (one lakh) as ransom for release of each of the abductees, with a threat to pay the money within next five days or to face consequences otherwise. The kidnapped fishermen hail from different parts of Rampal and Mongla upazilas. Staff officer of Coast Guard Mongla West Zone (Operation) Lieutenant Fariduzzaman Khan said on information, a Coast Guard team has already launched a drive to rescue the fishermen; according to a news agency.

### **West Bengal: Fish scales help develop biomass power generator in India**

<http://eandt.theiet.org/news/2016/sep/fish-scale-power.cfm>

"The world's first piezoelectric power generator made from fish scales has been developed by Indian researchers, promising to revolutionise the field of biodegradable, flexible and edible electronics. The device by a team from Jadavpur University in Kolkata can harvest

power from body movements, machine and sound vibrations or wind flow. Just touching the nanogenerator a few times with a finger produces enough power to turn on more than 50 blue LEDs, the researchers said. The technology has multiple advantages. Firstly, the input material - fish scales - is extremely cheap and virtually omnipresent in India, where large quantities of fish are consumed on a daily basis. Most of the time, the resulting biowaste produced at fish markets has no further use. The Jadavpur researchers realised that fish scales are made of collagen fibres, which are known to possess piezoelectric properties. In an article published in the latest issue of the journal *Applied Physics Letters*, the researchers described a one-step demineralisation process they used to turn the fish waste into a flexible transparent nanogenerator. "We discovered that the piezoelectricity of the fish scale collagen is quite large (~5 pC/N), which we were able to confirm via direct measurement," said Dipankar Mandal, assistant professor at the Department of Physics at Jadavpur University. "To date, despite several extraordinary efforts, no one else has been able to make a biodegradable energy harvester in a cost-effective, single-step process." The fish-scale nanogenerator is fully biodegradable and completely biocompatible, which means it is convenient for use in implantable electronics for medical purposes. "In the future, our goal is to implant a bio-piezoelectric nanogenerator into a heart for pacemaker devices, where it will continuously generate power from heartbeats for the device's operation," Mandal said. "Then it will degrade when no longer needed. Since heart tissue is also composed of collagen, our bio-piezoelectric nanogenerator is expected to be very compatible with the heart." The team is also planning to use the nanogenerator in future devices for targeted drug delivery or ingestible diagnostic devices.

### **West Bengal: Ecologist of the poor: Man who is fighting to conserve east Kolkata Wetlands**

<http://www.hindustantimes.com/india-news/ecologist-of-the-poor-man-who-is-fighting-to-conserve-east-kolkata-wetlands/story-admvS9TGik0MpW6V18UChN.html>

"The bustling megapolis of Kolkata produces almost 750 million litres of wastewater and sewage every day. Strangely, the core area of the city does not have a single sewage treatment plant. So where does so much sewage go? Almost 30 years ago, a sanitation engineer was asked to investigate this mystery. What he discovered would change his life forever and open a new chapter in urban ecology. He discovered a vast network of wetlands on the city's eastern fringe. Managed by farmers and fisher folk, it received the city's sewage, and with the help of sunshine and oxygen, broke it down to produce food for fish, which was then sold back to the city. This unique ecosystem, which the engineer later would go on to officially get recognised as the East Kolkata Wetlands (EKW), is the world's only fully functional organic sewage management system. Three decades later, Dhrubajyoti Ghosh is now a silver haired septuagenarian. This year, the International Union of Conservation for Nature (IUCN) conferred to him the prestigious Luc Hoffman Award.

This international award recognises the tireless and unpaid work of activists for nature conservation. Ghosh's international renown is not limited to this award alone. He is a UN Global 500 Laureate and shares accolades with international celebrities like former US President Jimmy Carter, actor Robert Redford and conservationist Jane Goodall. His achievements, however, are a blip on national media radar. This is hardly surprising. If India's record of recognising its scientific heroes is poor, then that of his home state of West Bengal's is pathetic. In 1981, the year Ghosh started exploring the East Kolkata Wetlands; Dr Subhash Mukhopadhyay committed suicide in his apartment. He was India's first physician, and second in the world, to have successfully performed in vitro fertilisation. Worried of his success, state Government machinery insulted and humiliated him to such an extent that he decided to take his own life. His tragic story later inspired the critically acclaimed Hindi film "Ek Doctor Ki Maut" directed by Tapan Sinha. A few years later, Dr Dipankar Chakraborti, from Jadavpur University, blew the whistle on widespread arsenic contamination of groundwater in West Bengal. He was promptly branded a CIA agent. It took him a decade of struggle to get the problem officially recognised as a public health issue. Ghosh spent fifteen years on his PhD in urban ecology, but the poor inhabitants of East Kolkata Wetlands surprised him with their knowledge.

"What I had discovered within the sewage and muck of Kolkata was a living laboratory of science, he says. Poor farmers and fisher folk had upended mainstream scientific consensus of wastewater being a pollutant by converting it into productive fisheries. However, such ingenious improvisation was hardly acknowledged by the state Government. Ghosh coined the term "cognitive apartheid" to describe the unwillingness of powerful elites to accept new knowledge coming from the poor. This, he said, would lead to "fatal exclusions, where by ignoring such knowledge, a city would head towards its own ecocide. Since the 1990s, the rapacious real estate market of Kolkata has been eyeing the wetlands. This had directly put Ghosh's efforts at conservation at odds with the very government he was serving as chief environment officer. Ghosh pulled off a major victory by getting the East Kolkata Wetlands recognised as a Ramsar Site in 2002, making it internationally important. This recognition de-suffocated the wetlands, but choked Ghosh's career. Unable to get land, vested interests hounded him to the point that he had to quit his job. But the struggle to conserve the East Kolkata Wetlands continues. It is reported that 25,000 illegal constructions within the East Kolkata Wetlands are to be legalised by the state Government. The Mayor of Kolkata, after having wrapped the city with cheap Chinese LED lights, now intends to concretize the eastern fringe.

According to his press statements, he considers 'civic service' to be more critical than conserving a wetland for the sake of "environmental nicety. What escapes him is that the wetland is performing a greater civic service by treating the city's sewage, preventing flooding and providing livelihoods to the poor and food security to the city. It will be interesting to know how he plans to treat, daily, almost 50% of the city's 750 million litres of sewage and wastewater once he has effaced the East Kolkata Wetlands from the map. Though from time to time there has

been some debate about the possible contamination of fish and food grown on wastewater, data from institutions like Jadavpur University, Kolkata and State Pollution Control Board (SPCB), West Bengal, have allayed such fears. A Jadavpur University study in 2006 stated that absence of contamination was visible through the health of the fish workers. Not a single case of skin disease was reported from fish workers who on an average spent four to five hours in chest high sewage water. The study had concluded that the ultraviolet rays of the sun cleared out pathogens from the upper layers. The SPCB water quality report of Kolkata sewage canal shows absence of harmful metal ions like chromium and lead. But of late, illegal plastic and leather processing units have proliferated in the area. This is a new development that can alter the fragile ecosystem. While nature purifies the wetlands, politics pollute it.

Untouched by the much celebrated land redistribution efforts of the earlier Left Government, most inhabitants of the wetlands are landless labourers. The sale of fish brought in profits that were prone to political capture. This converted the wetland into a theatre for armed conflict and political rivalry. Almost 10000 locally made weapons are reportedly stockpiled in this area. With political power changing hands after the state elections of 2011, conflicts peaked along with real estate value. The tranquil wetlands were frequently jolted by the deafening noise of bombs and gunfire. "Unless we find a solution to the land question, we cannot save this vast body of water, says Ghosh. He had barely commenced on this task when the Government pulled the plug on him. The wetlands are a hornet's nest of vicious political interest, and after all these years, it still buzzes around him.

For Ghosh, what shines through such insanitary politics is the profound ecological thinking of the urban poor, who sustainably manage the East Kolkata Wetlands. He poignantly says, "with their improvisations, these people showcase an enlightenment of the ordinary. His decades of research on the wetlands are rare at a time when researchers parachute into ecosystems and become overnight experts. Even today, Ghosh continues to approach the wetlands as he did three decades ago, with childlike curiosity. "I keep discovering new things, which keeps me excited, he smilingly says. Ghosh's knowledge of ecology, which he credits unhesitatingly to the urban poor, has unfortunately been relegated to the backbenches of wetland conservation. This pains him deeply. An ecologist of the poor, he firmly believes that if nature conservation has to work, then people must be at the centre. He can only hope that somewhere, people are listening.

### **West Bengal: No more beaches rides at Mandarmani**

<http://timesofindia.indiatimes.com/city/kolkata/No-more-beach-rides-at-Mandarmani/articleshow/53821726.cms>

"As day broke on the picturesque Mandarmani beach - the site of a horrifying crash the previous morning - it seemed nothing had changed. The death of three youngsters from Kolkata made no difference - all kinds of vehicles kept plying on the beach. Till noon, tourists kept speeding on the sands, vegetable and fish traders put-putted across on makeshift vanos, and the

joyrides on bikes continued. Police were nowhere to be seen for most of the day, not even at watchtowers and kiosks. Then, in early afternoon, there was a sudden influx of cops. Men in khaki swept across the beach, driving motorists away. They started building bamboo barricades at entry points to the beach. "It took us some time to finalise the mode of restriction. But from noon, the restrictions were put in place. We will meet the local officials and hotel representatives tomorrow to strengthen security on the beach and ensure that such accidents are not repeated," said SP Alok Rajoria. The Digha Sankarpur Development Authority is yet to come up with specific instructions on vehicular movement on Mandarmani, Tajpur and Sankarpur.

District magistrate Rashmi Kamal said no new circular has been issued so far but a meeting will be held very soon with the local administration on the issue. DSDA chairman, Trinamool MP Sisir Adhikari said that vehicle movement is already restricted on the beach. "There is a complete ban on construction and operation of motor vehicles on the beach. Police have been instructed to keep tabs," he said. The Ramnagar panchayat samity has put up some boards on the beach site, asking visitors not to drive on the sands. Vehicles belonging to fishermen will get passes. So will tourists headed for hotels that are not accessible through the main road. But these vehicles will drop them off and immediately turn back. "It's very difficult to monitor illegal driving on the beach at night," a hotelier said. Adhikari said the coastal regulation zone (CRZ) demarcation is over and the map will be released shortly.

### **West Bengal: West Bengal on alert over possible flooding**

<http://gulfnews.com/news/asia/india/west-bengal-on-alert-over-possible-flooding-1.1882739>

"West Bengal is on high alert over the possibility of floods as a deep depression near the coastal town of Digha, in the southern tip of West Bengal, has brought heavy rainfall in all southern districts of the state, including in the capital, Kolkata. "A deep depression near Digha will cause heavy rain in most south Bengal districts, including Kolkata, regional Meteorological Director G.C. Debnath said. "The deep depression will cause heavy to very heavy rain in the next two days in Odisha and Jharkhand as well, Debnath added. The depression, which has the possibility of turning into a cyclonic storm, travelled from the South China Sea and is now threatening to flood the districts and bring severe rainfall to Jharkhand and Odisha, giving rise to the possibility of floods in districts such as Burdwan and Bakura.

"The biggest risk of flooding is from the heavy rainfall that may occur in Jharkhand and as the water flows downward, it may flood several districts in its wake, said a senior officer of the state irrigation department. Chief Minister Mamata Banerjee has sounded off an alert, and officials are closely monitoring the situation even as the fear of embankments collapsing becomes very real. "Most of the rivers are flowing close to the danger mark and in districts like Sundarbans the embankments are being closely monitored. Even local people are working to prevent the embankments from collapsing along with state government agencies, the officer added. With the meteorological department sounding grave, the districts are on high-alert as state disaster

management teams are preparing for the eventuality of floods. “We are fully prepared with tents, boats and dry rations in case of flooding so that we can rescue people at the earliest, said an officer of the state relief disaster management team.

The government has already cancelled the leave of senior officials, as senior ministers have flown to various district headquarters to monitor the situation. “All the coastal districts are on alert and we are prepared for any eventuality, said state minister Subrata Mukherjee. Last year, the state witnessed severe floods during this time of the year, and Banerjee is unwilling to face the natural disaster unprepared. “Last time we were little unprepared. But this time we are all set to face the eventuality, said the district magistrate of South 24 Parganas, PB Salim. Fishermen living on the coastal belt have been warned not to venture into the sea. Even the search and rescue operation for fishermen that went missing on August 8 has been suspended for the time being. Until now bodies of eight missing fishermen have been recovered and three people have been rescued.

### **West Bengal: New species of eel found in Bay of Bengal**

<http://www.thehindu.com/sci-tech/science/new-species-of-eel-found-in-bay-of-bengal/article9012451.ece>

"Scientists have discovered a new species of eel, a snake-like fish, from the northern Bay of Bengal along the West Bengal coast. The species *Gymnothorax indicus* is slender-bodied, about one feet-long and edible. The eel was studied by the scientists at Sankarpur fishing harbour in West Bengal's Purba Medinipur district, after it was collected in a trawl net by fishermen in northern Bay of Bengal, about 70 km off the coast. “When fresh, the body is uniformly pale brown without spots or patterns and the eye rim is pale. We have proposed that the newly discovered species be called Indian unpatterned moray, Anil Mohapatra, scientist from Zoological Survey of India (ZSI) told The Hindu. The scientist said that the eel has 194 vertebrae. Its dorsal fin has a black margin. The paper by Mr. Mohapatra, Dipanjan Ray, David G. Smith and Subhendu Sekhar Mishra was published in an international journal, *Zootaxa*, earlier this week. Eaten in coastal areas Eels are found mostly at the bottom of rivers and seas. This species was found at a depth of 35 metres in the sea. Globally, about 1,000 species of eels have been identified and, in India, the number is around 125. Though considered a delicacy in many countries like Japan, the consumption of eels in India is limited to coastal areas. With over-exploitation of fishing resources both freshwater and marine, scientists believe that these newly discovered species may contribute to food security in the future. O

ver the past few years, West Bengal's Digha coastline and the adjoining areas of Bay of Bengal have yielded two new species of fish indicating the rich marine biodiversity of the coastal region. In 2015, a short brown unpatterned moray eel, named *Gymnothorax mishrai* (Bengal moray eel), was discovered here. Two years ago, scientists had discovered another new species of edible marine fish *Haplogenyis bengalensis* (Indian velvetchin) from the same area.

## **West Bengal: At least 8 fishermen dead, 7 missing after fishing boat capsizes in Bay of Bengal**

<http://indiatoday.intoday.in/story/bay-of-bengal-bangladesh-border-fishermen/1/742010.html>

"The bodies were recovered today afternoon from the fishing boat at Bangabandhu Island, which had sunk due to engine failure. The Bangladesh Coast Guard personnel recovered bodies of three Indian nationals from the fishing trawler 'FB Mahagouri' that sunk earlier in the Bay of Bengal. RESCUE OPERATIONS CONTINUE The bodies were recovered today afternoon from the fishing boat at Bangabandhu island, which had sunk due to engine failure. At least 8 fishermen dead, 7 missing after fishing boat capsizes in Bay of Bengal were their boat had sunk in Bay of Bengal due to engine failure. The Bangladesh Coast Guard personnel recovered bodies of three Indian nationals from the fishing trawler 'FB Mahagouri' that sunk earlier in the Bay of Bengal. RESCUE OPERATIONS CONTINUE The bodies were recovered today afternoon from the fishing boat at Bangabandhu Island, which had sunk due to engine failure. The deceased fishermen are yet to be identified. Mongla Coast Guard, West Zone Officer Captain Mehedi Masud told India Today, the recovered Indian fishing trawler along with the dead bodies of Indian fishermen had been handed over to local Dakop police station in the afternoon. Atleast eight dead bodies of Indian fishermen have been recovered since the day of the mishap and operations to recover seven more are undergoing. TWO FISHERMEN SAVED First leg of rescue operations had saved two fishermen and traced five dead bodies. An Indian fishing trawler FB Mahagouri sank in the Bangladeshi water border of the Bay of Bengal on August 8. After receiving the news of the fishing trawler capsized, Bangladesh Navy, Coast Guard and Indian Coast Protection Force started drives to mark the trace of the missing trawler and fishermen.

## **West Bengal: Fisherman rescued, five bodies found in deep sea**

<http://www.tribuneindia.com/news/nation/fisherman-rescued-five-bodies-found-in-deep-sea/280576.html>

"A fisherman was rescued while the bodies of five others were found floating in the Bay of Bengal in the early hours today. The fishermen were found in the high seas, about 130 km off Jambudwip in the Sundarbans in West Bengal, and are among the 30 who went missing after going out in four trawlers, West Bengal Fishermen Association chairman Joykrishna Halder and secretary Bijon Maiti said. The rescued fisherman was found floating in a life jacket, they said, adding the five bodies were brought to the hospital here by members of the Association, which had launched an independent search using ten trawlers. The district authorities have been informed and search is on for the other missing fishermen, they said. The fishermen had ventured out to catch Hilsa in the sea on August one and had gone missing since the heavy rains and rough seas on August eight. The search for the missing fishermen is being conducted by Coast Guard

as well. It has already rescued over 250 fishermen in 18 fishing trawlers in one of the biggest search and rescue operations in the Bay of Bengal. “We have been saying that four more trawlers with 30 fishermen are still missing. Had the search been conducted by us and Coast Guard together we could have provided timely help, Halder and Maiti said.

### **West Bengal: Poor navigation equipment, a grave concern for fishermen**

<http://www.thehindu.com/news/cities/kolkata/poor-navigation-equipment-a-grave-concern-for-fishermen/article8991495.ece>

"The death of five fishermen and the disappearance of more than 20 from West Bengal following a cyclonic storm in the high seas have once brought to the fore the poor quality of navigation safety equipment with the fishermen. “Twenty-three fishermen who ventured out on August 7 and August 8 are still missing. We are coordinating with the office of District Magistrate, South 24 Parganas and Indian Coast Guard, but there is no news, Joy Krishna Halder, secretary, West Bengal United Fisherman Association, told The Hindu on Monday. About 200 trawlers ventured into the sea on August 7 and August 8 of which two drifted to the Bangladesh side. The boats, which were caught in the cyclonic storm, capsized about 40 nautical miles north of Bangladesh's Hiron Point of the Sundarbans on Saturday. Four fishermen were rescued. Ships of the Indian Coast Guard and the Bangladeshi Navy are still carrying search operations along the international maritime boundary. No alert on weather “Every year precious lives are lost. We do not get any alert on the weather conditions. The wireless set that the fishermen carry has a range of only 15 to 20 km, Mr. Halder said. “We have told two State Ministers that the fishermen should be provided with better equipment so that they can return safely, he said. More rain likely Meanwhile, with low pressure developing over north Bay of Bengal, rain is likely in several districts of south Bengal over the next 48 hours. Sea is expected to be rough. The fishermen venturing into the sea again from the State are woefully under-equipped, Mr. Halder said.

### **West Bengal: Fishermen rescued from Bay of Bengal**

<http://indiatoday.intoday.in/story/fishermen-rescued-from-bay-of-bengal/1/737229.html>

"All seven fishing trawlers which had gone missing in the Bay of Bengal due to bad weather have been found to be safe. Coast Guard officials said since yesterday they were running a search and rescue operation after receiving reports from the Fisheries Department about seven fishing boats missing in the Bay of Bengal. Out of them, four had returned to harbour safely, while one boat which was stranded due to engine failure was located by Coast Guard ship Raziya Sultana. The boat along with all 10 crew on board was provided with necessary assistance and was being towed towards Sagar Island, the officials said. Two Coast Guard ship and a Dornier maritime reconnaissance aircraft were deployed in the sea for rescue mission. The remaining boats were also found later in the day. Rough sea condition due to a deep depression along the West Bengal coast had made the search and rescue operation difficult. Director General Indian

Coast Guard Rajendra Singh, who is on official visit to Haldia and Kolkata, had personally monitored the operation.

### **West Bengal: Over 20 fishermen missing in Bay of Bengal**

<http://www.newsx.com/national/37585-over-20-fishermen-missing-in-bay-of-bengal>

"At least three trawlers carrying over 20 fishermen went missing in the Bay of Bengal near Kakdwip in South 24 Parganas district of West Bengal on Tuesday, an official of the Fishermen Association said. "At least 21 fishermen are there in the three trawlers that have gone missing. Rescue operations have been launched but we have been hampered because of the inclement weather," West Bengal United Fishermen Association, Secretary Joykrishna Haldar said. However, state Fisheries Minister Chandranath Sinha claimed that only one trawler was missing. "So far we have got confirmed reports of only trawler named Jhor (storm) missing with only 3-4 fishermen on board. The Coast Guard has been requested to carry a search and rescue operation," said Sinha.

### **West Bengal: Hilsa to climb farakka ladders to jump onto Bengal plate!**

<http://www.dailypioneer.com/todays-newspaper/hilsa-to-climb-farakka-ladders-to-jump-onto-bengal-plate.html>

"The Hilsa crisis in West Bengal may not last forever as the Union Water Resources Ministry is planning to install "fish ladders in the river Ganga near the Farakka Barrage in the State to help the fish breed in freshwater. Following the construction of Farakka Barrage, the Hilsa population in the Ganga went down drastically as the fish found it difficult to cross the barrier and reach its freshwater breeding ground. Much like the Salmon of North America, the Hilsa enters the river from the sea to swim upstream for hundreds of kilometres and spawn in freshwater, following which it returns to its salty abode. A fish ladder is a series of pools built like steps to enable the fish to migrate upstream for breeding. The fish normally swim and leap up a series of these pools that have fairly high velocity of water to attract them to the ladder and push them upstream.

However, the force of the water cannot be so great either that it washes the fish back downstream or exhausts them to the extent that they are unable to continue their journey upstream. Water Resources Minister Uma Bharti told the Lok Sabha on Thursday that the proposed installation of fish ladders will ensure that Hilsa gets freshwater to breed in. If the project is successful, "the

delectable fish that is a delicacy in Bengal will be available even in the Chambal region of Madhya Pradesh and Uttar Pradesh, as was the case in the past, she said. She added the thriving of other aquatic life like goldfish and dolphins in the river would also be further indicators of the improving ecological health of the river and its tributaries. Hilsa fisheries experienced a severe setback after the commissioning of the Farakka Barrage in 1972, when as per experts, the average catch dropped from 159.5 kg/km to 9.4 kg/km of the stretch.

In West Bengal, the spawning grounds of Hilsa are located in the Hooghly River. The Hilsa breeds in the monsoon season and the migration of the fish starts from July and ends in October, during the first phase and from January until March in the second phase. Peak breeding of Hilsa happens during full moon in October. According to experts, overexploitation and siltation of riverbeds, construction of barrages, decrease in water flow upstream and fragmentation of rivers in the dry season have been majorly impacting the migration of the Hilsa. However, the proposed fish ladders are expected to boost its migration and encourage breeding in its native sites.

### **West Bengal: West Bengal invites private investment into fisheries**

[http://www.business-standard.com/article/pti-stories/west-bengal-invites-private-investment-into-fisheries-116080200899\\_1.html](http://www.business-standard.com/article/pti-stories/west-bengal-invites-private-investment-into-fisheries-116080200899_1.html)

"The West Bengal government is inviting private investment to develop fisheries in the state, a senior official said today. The state has identified bigger waterbodies for the purpose, the state fisheries department official said. The investment could be in the form of a joint venture or be solely private, Sumanta Chaudhuri, the Additional Chief Secretary of the Fisheries Department, said on the sidelines of an event here. Chaudhuri said that the state government had last year adopted a policy to encourage private investment in the fisheries sector. ""The policy will encourage those willing to invest in the fisheries sector. There will be separate incentive for them... Capital subsidy, subsidy on the VAT, electricity duty,"" Chaudhuri said. The official said that his department faced the same problem of inadequate cold storage and processing as like the agriculture and horticulture departments. ""So far there has been consumption-oriented production in West Bengal, but now we need to think in terms of the consumption, export, value-addition as well as the retail chain and that is very important,"" the official said. He said that Chief Minister Mamata Banerjee had taken a big initiative in linking fisheries to the market.

### **West Bengal: Wetland capture bid foiled by fishermen**

<http://timesofindia.indiatimes.com/city/kolkata/Wetland-capture-bid-foiled-by-fishermen/articleshow/53485227.cms>

"An audacious attempt by the land mafia operating along the eastern fringes of the city to grab two sprawling bheris was thwarted by resistance from local fishermen and prompt police action on Sunday morning. This is the second time in three weeks that the capture bid off Basanti Highway was foiled. The bheris or fish farms have been under constant threat of land sharks for the past several years as they attempt to drive out the cooperatives that manage the bheris to convert them into real estate. "Nearly two dozen men came with wooden poles to drive them into the ground and claim ownership of the 200-bigha bheri. They said the bheris had been sold to them and that they would not allow fish farming to continue. We stood our ground. Later, police came and uprooted the poles that they had planted," said cooperative member Ratan Mondal. He has been in the forefront of the resistance and says they will oppose the attempt to destroy their livelihood tooth and nail. Police had acted similarly just over a fortnight ago when men had assembled one morning and begun driving poles into the ground to stake claim on the bheris. The cooperative members have filed a complaint at East Kolkata Wetland Management Authority (EKWMA) that oversees the wetlands spread over 12,500 hectares.

"The mafia has managed to lure a section of cooperative members with money. They offered each member up to Rs 1 lakh in cash if they walk away, plus another Rs 5 lakh to follow and even the promise of a job. But if the workers refuse to relent, they have been told bluntly that goons will forcibly take over the waterbodies and adjoining lands and they will get nothing," said Niranjana Mondal. The workers are not giving in, though. The Dakshin Gorumara No. 1 cooperative manages two bheris, totaling 110 bigha, and three stocking ponds. The other cooperative manages a bheri of 60 bigha and two stocking ponds. These and the adjoining land under the two cooperatives make up nearly 220 bigha of contiguous land that has been in the eye of land sharks for a while now. While the bigger Dakshin Gorumara No. 1 has 44 cooperative members, Dakshin Gorumara No. 2 has 19. ' In addition, the fish-farms provide livelihood to temporary workers. Together, the two cooperatives produce around 275-300kg fish daily. The bheris were originally owned by Ganesh Biswas and his family, and many fish-farm workers' families have worked there for generations. The cooperatives were set up 30 years ago, but it all happened by word of mouth with little documentation. Now, the current elders of the Biswas family - Sashadhar Mondal and Deshbhandu Mondal - want to sell out and exit the business citing age and disinterest in the business among youngsters in the family.

### **West Bengal: 12 marooned fishermen rescued from sea after 2 days**

[http://www.business-standard.com/article/pti-stories/wb-12-marooned-fishermen-rescued-from-sea-after-2-days-116080101655\\_1.html](http://www.business-standard.com/article/pti-stories/wb-12-marooned-fishermen-rescued-from-sea-after-2-days-116080101655_1.html)

"Twelve fishermen, who were marooned for two days off Sagar Island in West Bengal, were rescued by a Coast Guard team, officials said today. During its routine sortie yesterday, Coast

Guard ship Anmol, which is based at Haldia, found a fishing boat at 50 nautical miles from Sagar lighthouse. The boat, based at Nandigram, had ventured into the sea on July 29 and had soon developed a snag. With no propulsion and power supply, the crew was stranded for two days in mid-sea, officials said. The Coast Guard sent a team of technical sailors to rectify the defect on board the stranded fishing boat, but the engine could not be started. After that they towed the fishing boat till Sagar anchorage and handed it over to the boat owner, officials said. With prevailing monsoons and rough sea conditions, there has been a rise in distress alerts from fishing boats at sea, officials said, adding they have increased patrolling to ensure every mariner is safe at sea.

### **West Bengal: Green tribunal raises red flag over Kolkata wetlands**

<http://indiaclimatedialogue.net/2016/07/27/green-tribunal-raises-red-flag-kolkata-wetlands/>

"The National Green Tribunal has asked for an accounting of the amount of wastewater released into the Kolkata wetlands, raising a glimmer of hope for the unique ecosystem struggling for survival in the backyard of India's eastern metropolis. How much difference could a foot of water possibly make? For thousands of fishermen and vegetable farmers in the East Kolkata Wetlands, it could mean the difference between a decent livelihood and chronic want. And now the National Green Tribunal is taking an interest, which might yet save the beleaguered Ramsar site. "The government must raise the level of wastewater in the channels going past the bheries (fishponds), Dinabandhu Mandal, a 46-year-old fisherman from Goyalbati village in the wetlands, told indiaclimatedialogue.net.

"If we have to pump the water into our bheries at additional cost, we will surely go out of business. The wetlands in the east of Kolkata are part of a unique ecosystem that thrives on wastewater from India's third-most populated metro city. It's the world's largest organic sewage treatment system that doubles up as a vegetable garden and fishery that supply more than a half of the city's daily requirement. The brackish, low-lying marshes beyond east Kolkata is a natural ecosystem shaped wisely by human intervention. It was brought into use more than a century ago by a clever arrangement of sewage, sunlight and gravity channels to rid a city of its organic waste. Despite their usefulness, the wetlands have been rapidly shrinking due to the hunger for real estate in a crowded city. After being declared a Ramsar site of international importance in 2002, steps have been taken to protect the ecosystem, but with limited success. Wastewater for survival The two unique services that the wetlands provide zero-cost treatment of the city's wastewater and community livelihood-based transformation of the waste to nutritional wealth are best served if they receive a sufficient supply of wastewater, according to Santanu Chacraverti, president of non-profit Disha (Direct Initiative for Social and Health Action). "Yet, it has not been getting this supply for a long time now, Chacraverti told indiaclimatedialogue.net. To tackle the crisis the fisheries are facing, Disha with a few other concerned organisations and individuals petitioned the National Green Tribunal to take action.

The eastern bench of the tribunal on July 20 asked for an accounting of the water. The West Bengal Irrigation Department has to “furnish status report of Bantala Lock Gate with specific reference to its height as compared to the wetland, justice S.P. Wangdi and expert member professor P. C. Mishra said in their written directive. They will hear the matter again on August 18. ”“The green tribunal taking notice of the matter is a positive development. This may set the ground for the government to enter into a discussion on diversion of wastewater into the fisheries, said Dhrubajyoti Ghosh, Special Advisor to the International Union for Conservation of Nature (IUCN) and the foremost authority on the Kolkata wetlands. “The tribunal's direction to produce a status report of the Bantala lock gate in terms of the sewage water level appears to be a promising turn of events, echoed Chacraverti. “This will get us back to the way fisheries used to work in the 1980s, which means sufficient supply of wastewater, said Ghosh. The increased supply will also ensure that fishponds that are more than 3.5 km from the Bantala lock gate are revived, boosting aquaculture and livelihoods. Well-intentioned mistake The problem of wastewater supply has been compounded by a well-intentioned directive by the Central Wetlands Regulatory Authority to stop the release of sewage into any of the country's notified wetlands.

As far as the Kolkata wetlands are concerned, Ghosh said the federal watchdog has made a mistake. “Nowhere in the world is there an example of such a natural ecosystem providing a vital municipal service to a city, he had said in an earlier interview. “We need to take steps to bolster and encourage the processes that strengthen the wetlands rather than raise roadblocks. Chacraverti agrees. “Any water that you release into the Kulti River without funnelling it through the wetlands becomes a pollutant that creates havoc on the downstream aquatic environment, he said. “The same water passed through the wetlands is not only cleaned but it also creates nutritive wealth. Increasing wastewater flow to the wetlands makes elementary ecological sense. The modern thinking on tackling waste is centred on two approaches: to avoid creating any that cannot be managed and to transform the manageable waste into useful items. The second way is often described as a cradle-to-cradle approach where the waste becomes the raw material in some other useful process. “The farmers and fishers of the Kolkata wetlands have developed a cradle-to-cradle approach on their own, silently and without any fanfare, simply by intelligent use of urban waste as nutrient for their fields and fish, said Chacraverti. “Thereby, they not only cleaned the waste water at no cost to the city but also created an abundance of cheap nutrition. At a time when climate action is receiving priority both in India and the world, it is all the more important to preserve and strengthen the Kolkata wetlands, Ghosh avers. “The East Kolkata Wetlands is a low carbon option, if not carbon negative, for such a big city as Kolkata.

**West Bengal: Prawn seed catching in Sundarbans damaging environment: Book**

[http://www.business-standard.com/article/pti-stories/prawn-seed-catching-in-sundarbans-damaging-environment-book-116072000411\\_1.html](http://www.business-standard.com/article/pti-stories/prawn-seed-catching-in-sundarbans-damaging-environment-book-116072000411_1.html)

"Rampant practice of prawn seed catching along the rivers of Sundarban archipelago is not only damaging the marine ecosystem but also endangering the stability of embankments, says a new book. "In an age marked by environmental consciousness and biodiversity conservation, prawn seed catching has become a matter of much concern among international agencies, policy makers and non-state organisations for its perceived contribution to environmental degradation of the coastal common and mangrove vegetation," writes professor Amites Mukhopadhyay in his book 'Living with Disasters'. Published by Cambridge University Press the book is an interdisciplinary research situated at the interface of history, anthropology and environment studies. "When they pull nets along the banks in search of seeds, their nets catch many other marine lives in an attempt to collect the seeds.

Many valuable marine lives which these women cannot identify as prawn seeds are killed in their larval stage," he says. Frantic search for prawn seeds has put the valuable flora and fauna of the Sundarbans at stake. It is in the light of the increasing global concern about conserving biodiversity or portraying biodiversity as a global public good that women prawn catchers' livelihood appears as destructive of the ecosystem, says the book. Prawn seed catching along the riverbanks appears problematic at another level also. The women prawn seed catchers are believed to have posed a serious threat to the sustenance of the Sundarbans embankments, says the Jadavpur University professor. "Women in search of prawn seeds keep going up and down the river banks, thereby disturbing the siltation process at the bottom of embankments," says the author adding that embankments are fragile mudwalls constantly eroded by river currents. At the same time, silts and mud carried by rivers tend to settle at the base of embankments which is critically important for its sustenance. "However, women prawn catchers' continuous movement along the shore is believed to unsettle the process of silt deposition, thereby weakening the embankment," he writes. A Unesco World Heritage site, Sundarbans is a group of islands in the Bay of Bengal delta which is home to about 40 lakh people.

### **West Bengal: Bengal to help women manage fish farming scientifically**

<http://www.thestatesman.com/news/bengal/bengal-to-help-women-manage-fish-farming-scientifically/155122.html>

"The West Bengal government is drafting a proposal to help women in the Sundarbans mangroves scientifically manage fish farming and become self-sufficient, a minister said on Tuesday. "We have noticed every house is closely associated with a water body and the women use the fresh water as a hatchery. The farming is not carried out in a proper way. If we can test the soil and water and inform them which fish species is suitable for growth in that particular pond, then it will benefit them," Fisheries Minister Chandra Nath Sinha said. The idea is to spread fish farming via the self help groups and empower women, he said. The state Departments of Biotechnology and Sundarban Affairs will collaborate with the Fisheries Department to frame a proposal in July to enable a co-ordinated effort. "If there is any

possibility of developing tourism along the hatcheries then we will also consider it," Sinha added.

### **West Bengal: West Bengal set to launch unique fish tourism in Sunderbans**

<http://economictimes.indiatimes.com/industry/services/travel/west-bengal-set-to-launch-unique-fish-tourism-in-sunderbans/articleshow/53263835.cms>

"West Bengal government is set to launch unique fish tourism in Sunderbans to attract domestic as well as international tourists. The plan is to provide a scope to the tourists to witness fish-farming there along with visiting the tiger reserve, biosphere reserve, forest bed and backwater and wide varieties of wild lives especially the Royal Bengal tiger. In a recent meeting at state secretariat, fisheries department minister Chandranath Sinha, Sundarbans development minister, Manturam Pakhira and Bio-technology minister Ashis Banerjee had prepared a draft plan of this project. "The money spent by the tourists will go for the development of fishermen communities here. This will be completely eco-friendly tourism programme. The Self-Help Groups of this delta will be benefited," said Sundarbans development minister. The state fisheries minister is hopeful about the economic upliftment of the poor fish farmers. "Many women are farming carps and shrimps. Their work would be showcased in front of the international tourists," said the minister. Sundarbans is the natural breeding ground of stinging catfish, snakehead murrel and some Indian carps as well. These fishes are generally farmed in the crop-cultivation land where knee-deep water is enough to produce and nurture those fishes. The state tourism department have recently decided to tie-up with a Kerala based private company to build seven houseboats for Sundarbans. Those houseboats will be playing alongside the creeks of Sundarbans, Tajpur and Mandarmani

### **West Bengal and Odisha: Hilsa count shrinking in Odisha, West Bengal**

<http://www.newindianexpress.com/states/odisha/Hilsa-count-shrinking-in-Odisha-Bengal/2016/07/18/article3534439.ece>

"Construction of dams and barrages over the rivers has created obstructions in migration of Hilsa resulting in sharp decline in the number of the delicious fish in Odisha, West Bengal and other States, said Dr Utpal Bhaumik, former head of Riverine Ecology and Fisheries Division of Central Inland Fisheries Research Institute (CIFRI), Barrackpore. Hilsa is mostly found in the rivers Bhagirathi-Hooghly, Godavari, Mahanadi and Chilika Lake. There is huge demand for Hilsa. Hydro-ecological barrier on the passage connecting Daya river has been preventing freshwater migration and production sustenance of the species. The catchment areas of Chilika Lake have rock, sand and mud substratum. Around 1.6 million tonne sediment is deposited every year in Chilika Lake through river Daya and several streams, he added. Bhaumik said the barrages and dams block the flow of water which in turn affects the migration of Hilsa. The peak upstream migration of Hilsa in most of the rivers generally begins with the onset of south-

west monsoon and continues till October. However, other factors such as rainfall, current velocity and temperature, low salinity, turbidity, primary productivity and availability of planktonic food cannot be ignored, Bhaumik added. Recently, in Dhaka, the fishery officials of Bangladesh, India and Myanmar shared plan for sustainable management of Hilsa as these three countries net around 90 per cent of the delicious fish worldwide, he said.

### **West Bengal: Save wetlands: Fisheries minister turns crusader**

<http://timesofindia.indiatimes.com/city/kolkata/Save-wetlands-Fisheries-minister-turns-crusader/articleshow/53155087.cms>

"Fisheries minister Chandranath Sinha has become a crusader of sorts - in his endeavour to protect wetlands. The minister has started a "save wetlands, save water bodies" campaign for which posters have been put up all over the city, to make "the ordinary citizen aware of the importance of wetlands and water-bodies". Sinha is trying to frame a fresh policy on saving wetlands with other government departments and adopt "an integrated approach" for it. The move comes at a time city mayor and environment minister Sovan Chatterjee has, much to the dismay of green activists, has aired his resolve to use wetlands for development projects. The fisheries minister, too, is perplexed at the stance; he wants a discussion with Chatterjee on taking his "save water-body" campaign to a bigger platform with his help. "I don't know what he (the mayor) has said, but it's impossible to use wetlands for development projects. On the contrary, it's the government's job to protect them. Our campaign is part of the fisheries departments' mandate for conservation of fisheries," he added. Knowing the limitations of his "small" department and the "grave" issue of protecting the slowly disappearing waterbodies, he tells TOI about the co-ordination, between "bigger" departments like environment, municipal affairs, panchayat and rural development and urban development, that is the need-of-the-hour.

The fisheries department is about to disburse letters to all these departments so that the state government can address the matter in a more pragmatic way. "I know there are laws like the West Bengal Inland Fisheries Act, 1984, and to penalize any one illegally filling water-bodies (3 years' imprisonment and Rs 5 lakh fined). But the government must make sure the laws are used. For this, I want to call ministers and officials of all these departments for a meeting, where the environment minister (Chatterjee) will take a crucial role." The fisheries department plans to rope in the panchayat and rural affairs department to take its campaign to the block level. "BDOs (block development officers) will be told to start the campaign immediately and continue it for at least two months at a stretch. The campaign can begin again - after a break," the minister added.

He said, ""Ahead of the bigger meeting with the four departments, it would be proper to hold a one-and-one discussion with the mayor, since he now helms a department as crucial as environment."" With the help of the other four departments, the fisheries minister wants to formulate effective ways of implementing the East Kolkata Wetland (Conservation and Management) Act, 2006, the West Bengal Town and Country Planning Act, 1979 and the West Bengal Municipal Building Rules. The minister said, ""It's only when we save the water-bodies and the wetlands that we can save fish and increase its cultivation. Officials in the department revealed that over the past many months, several complaints against illegal filling of water-bodies have reached the minister, propelling him to take a holistic measure now.

### **West Bengal: West Bengal government proposes lab to check cause of fish diseases**

<http://indianexpress.com/article/cities/kolkata/west-bengal-govt-proposes-lab-to-check-cause-of-fish-diseases-2886642/>

"The West Bengal government has proposed a new laboratory that will identify the causes of various diseases affecting the fish population. With prawn cultivation in South 24 Parganas nearly wiped out due to the white-spot disease that has been affecting the species since the late 1980s with no sign of control, the government realised the need for a laboratory to carry out research work with the "sole aim to learning about the causes of the disease. Government officials said that ever since the late 1980s, when the white-spot disease wiped out the entire scope for prawn cultivation in the South 24 Parganas. "In the past, there was no government agency dedicated to finding out the root cause of such diseases. Crores of rupees have been lost due to the prawn cultivation taking a hit with farmers incurring huge losses, an official said. It was learnt that the food given to the prawn underlings were "unsuitable, resulting in infections. "It has been decided that alongside prawn, Indian carp will also be released, which would help tackle the problem in the future. The new lab will not only carry out the necessary research work to identify any infections but also test the soil in the area where the seed for the Indian carp is to be released. "A large chunk of fish in the state comes from Andhra Pradesh and if there is strike or something, the supply is affected and there is crisis in the city and state markets. Steps have been taken to make the state self-sufficient in fish production, added the official. The lab will come up on a 10 acre-plot of land at Chakgeria in South 24 Parganas district, an official informed.

### **West Bengal: Special initiatives for expecting mothers in Sundarbans: Min**

[http://www.business-standard.com/article/pti-stories/spl-initiatives-for-expecting-mothers-in-sundarbans-min-116070101474\\_1.html](http://www.business-standard.com/article/pti-stories/spl-initiatives-for-expecting-mothers-in-sundarbans-min-116070101474_1.html)

"To enhance institutional delivery rate in the riverine blocks of Sundarbans, the state government has taken up special initiative by setting waiting huts for expecting mothers, minister of state Shashi Panja said in the West Bengal Assembly today. Panja in his reply during a

discussion in the Assembly said such huts were built at Gosaba RH, Madhabnagar RH and Khulna RH. According to her, the state has taken special initiatives by restructuring of health facilities for providing CEmOC (Comprehensive Emergency Obstetric Care) and BEmOC (Basic Emergency Obstetric Care) service on 24x7 basis. As on May 27, 2016, 53 SNCUs are functional in the state with 1,907 functional beds for rendering specialised new born care support of newborns to reduce infant mortality, she said. "Another 17 units are at different stages of operationalisation and 15 of them are expected to be functional with 2016-17 financial years. West Bengal is one of the few states having such a large number of SNCUs dedicated to new born survival," she added.

### **West Bengal: Bengal fishing for Hilsa patent**

<http://www.punemirror.in/news/india/Bengal-fishing-for-Hilsa-patent/articleshow/53013100.cms>

"Fishermen of West Bengal are seeking a patent for Hilsa, found in the Bay of Bengal. They are urging the Centre to move for the patent immediately or else Bangladesh might pip India to the post. Just like the patent for Baluchari Sari, Darjeeling tea, Joynagarer moya, the fishermen's union is crying hoarse for a stamp of government authority on the Hilsa that is found in Diamond Harbour. The state fishermen's union claimed that Hilsa is mainly concentrated in the waters of West Bengal and Bangladesh. Hilsa the pride of Bengal is primarily found in the Diamond Harbour area of Bay of Bengal in South 24-Parganas district. "Fishermen's community and unions are serious about the patent issue as Hilsa is confined to our coast. If the Centre does not expedite matters, Bangladesh will take advantage because Hilsa is found in the same zone where the coasts of Bangladesh and West Bengal meet in South 24- Parganas," said Surajit Bag, additional director of fisheries (marine).

### **West Bengal: Climate change, erosion pushes new generations to poverty along Ganga**

<http://www.indialivetoday.com/climate-change-erosion-pushes-new-generations-to-poverty-along-ganga/9497.html>

"Climate change and vicious river bank erosion in the post-Farakka Barrage period have blurred the lines between the rich and the poor and are pushing successive generations to grinding poverty along the lower stretches of the mighty Ganga in West Bengal. The frequent nature of erosion is induced by hydraulic control by the commissioning of the barrage in 1975 and Indo-Bangladesh water sharing treaty of 1977 and 1996, experts say. And the famed weaver's colony (taantis) in Shantipur block of West Bengal's Nadia district along the left bank of Bhagirathi-Hooghly, a distributary of the Ganga, is one glaring example of the cascading effects of international water policies and diplomacy. The town is around 75 km from the state capital Kolkata. "If you are living along the banks of the Ganga, you have to learn to live with it, is how Normal Biswas of Shantipur likes to think of climate change and river bank erosion along

the Ganga. The 66-year-old is a resident of Gobarchar village in Nadia, over 200 km downstream of Farakka Barrage Project in Bengal's Murshidabad district. Nirmal views resilience as a way of life as the nourishing Ganga “pushes the land inwards. But what he worries about, like the rest in his village, is that there would be no land left to satiate the hungry river. “In the last 12 years, we have lost over 100 feet of land mass. We have urged the local administration to do something about it, but they are yet to give it proper attention, Biswas told this visiting IANS correspondent. Tracing the extent of the wearing away with his fingers, Biswas said the intensity has increased in the last three to four years. “Simply placing boulders doesn't protect our land from erosion and floods which are now frequent, he said.

Traditionally fishermen and weavers, Gobarchar's 12,000 residents have had to adapt as the water plays truant with livelihoods. “In several of these villages, along Bhagirathi's left bank, on an average most villagers lost 40 to 60 percent of land to erosion in the post-Farakka barrage period. This has resulted in a kind of negative equalisation. The social hierarchy has disappeared due to land loss, Aznarul Islam, an expert who has extensively studied the erosion and its socio-economic impacts in the region, told IANS. As the generations extend, families are becoming poorer and poorer. “We did an analysis of generations (1970-1990-2014) and we found that as the generation extends, deprivation increases. Around 40 to 60 per cent of below the poverty line (BPL) families were found in the erosion stretch, said Islam, Assistant Professor, Department of Geography, Barasat Government College. They are also reluctant to “grab alternative livelihood options, Islam noted. Gobarchar's fishermen's miseries are compounded by certain “anti-social practices that snuff out fish in the river, sparing the prawns which fetch a higher price. The advent of power looms has worsened the situation. “Power looms need a good amount of capital investment. With the agriculture and fishing suffering, the younger lot is migrating to cities to make money to install power looms back here in the village, lamented Jeeban Sarkar, chief of the Shantipur fishermen's community.

What is more worrisome this year is the “historically low inflow downstream of the Farakka in the Ganga. The barrage was designed to serve the need of preservation and maintenance of Kolkata Port by improving the regime and navigability of the Bhagirathi-Hoogly river system. Salinity has gone up and a change in livelihood pattern has also emerged in the aftermath of the Farakka project, said Khodaker Azharul Haq, President, Bangladesh Water Partnership. “It is in India's interest to also monitor why there is so much low flow in the Farakka itself. Climate change will affect everything in every possible way, Haq told IANS. “Farakka was not designed to handle this. In the mid-60s there were no such climate change concerns. But now, any treaty that you sign should have a built-in climate change impact, Haq cautioned. River expert Kalyan Rudra stressed the river needs a “playground and it should be left for it to “oscillate laterally and spill off the sediment load carried during the monsoon. “The massive intervention at Farakka has partially rejuvenated the river. But the deposition of sediment in the estuary impeding navigational channel continues, and there remains a wide gap between targeted goal and

achievement of the Project, Rudra added.

### **West Bengal: To boost tourism, West Bengal govt eyes homestays, Sundarbans cruise**

<http://indianexpress.com/article/cities/kolkata/mamata-banerjee-to-boost-tourism-west-bengal-govt-eyes-homestays-sundarbans-cruise-2882459/>

"Mamata Banerjee seems to be leaving no stone unturned in trying to transform the state's tourism sector into a valuable source of revenue for the government. In the Budget, announced last week, Finance Minister Amit Mitra has set aside Rs 295 crore for the tourism department a 25-fold increase since 2010. The allocation would be used to promote homestays, promotional films featuring Bengal brand ambassador Shah Rukh Khan and a river-cruise along Sunderbans among others. Tourism Minister Goutam Deb has been tasked to ensure an increase in global tourism footfall in Bengal. "We are implementing different ideas. For instance, in North Bengal, where a large number of Europeans visit, we are developing infrastructure. Take for instance, film tourism.

This is a niche tourism sector. But it's a prime focus of the government, he said. While projects such as the 'Kolkata eye' is yet to become a reality, others like Gajoldoba a proposed eco-tourist resort around a natural lake in North Bengal and a river-cruise in Sunderbans have taken off. In June, the government in an attempt to boost 'home tourism' had decided to promote organic farming in areas promoting homestays. "With around 2,000 rooms on offer, homestays are the new craze for tourists visiting North Bengal. Home tourism in Darjeeling hills is also set to get another boost, said an official. Officials added that the promotional film for tourism would soon be made public. "The film, which will be shown on television channels, will initially be of 90-second duration. Later, it would play for 30 seconds. The 90-second film will be telecast at Inox movie screens. But the entire film, which is of three minutes, will be uploaded on YouTube, said an official. The government is also hopeful that the river cruise to be jointly undertaken by the Bangladesh and Indian governments would be launched by the end of this year. The cruise is likely to be a 14-day affair that will traverse through the Sunderban mangrove forests.

### **West Bengal: Comments on second draft statement on National Policy on Marine Fisheries by DMF**

"Introductory Comments: 1. The procedural flaw in the process of draft circulation and opinion collection and absence of stakeholders in the committee appointed for preparation of the draft policy – \* That the draft was not translated in all the coastal languages and circulated with sufficient time to organise discussions on the same among fish workers. The draft was published on 15.06.2016 and the last date of submission of comments has been 26.06.2016; \* That there

should have been multiple consultative meetings with coastal fish workers in every coastal state depending upon the length of the coastline of the respective state; \* That the committee for preparation and finalisation of the draft should have representatives of fish workers as its members. 2. The need to have a separate ministry for fisheries – The largeness of the fisheries sector in area coverage, employment and revenue generation as well as its variegation call for a separate ministry without which the sector cannot be provided with administrative justice.

This is all the more necessary in view of the requirements of implementation of the instant national policy. Besides these, the effort taken by the Government of India and CMFRI towards adoption of a new Marine Fisheries Policy is appreciated. It is also noted that some very good general principles and directions have been incorporated in the draft. Further, we are happy to note that some improvements have been made in the 2nd Draft over the 1st one and some of our concerns have been incorporated. All these positive positions deserve to be pursued to develop concrete policies. At the same time we are constrained to mention that some very important points are missing from the draft. Preamble: The preamble to the 2nd Draft Statement on National Policy on Marine Fisheries states, inter alia, that “The overall strategy of the NPMF, 2016 will be based on the four pillars of sustainable development, principle of subsidiarity, inter-generational equity and precautionary approach.

These four pillars will guide the actions of various stakeholders in meeting the vision set for the marine fisheries sector of the country. This statement should incorporate gender justice as one of the main guiding pillars and should read as in the following– “The overall strategy of the NPMF, 2016 will be based on the five pillars of sustainable development, principle of subsidiarity, gender justice, inter-generational equity and precautionary approach. These five pillars will guide the actions of various stakeholders in meeting the vision set for the marine fisheries sector of the country. The Chief Concern: Why small and traditional fishing communities should be the chief concern of marine fishing policy? The small and traditional fishing communities are by far the largest primary stakeholders and natural custodians of coastal and marine fish resources. The small and traditional fishing communities are by far the largest primary stakeholders of coastal and marine fish resources. They are also the natural custodians of these resources for the simple reason that good fish needs good water and the small fishers, with their small crafts and passive fishing nets, are essentially engaged in harvesting and not in destruction of the fish resources.

While about 87% of the total marine catch comes from near shore areas (0 to 100 metres depth), about 80% of the total marine catch is taken away by the mechanized fishing boats. The fish resources of near shore areas are fully or over exploited. All around the coast the small fishers are shouting that there is no fish. The main causes are – a) over and destructive fishing by the mechanized fishing fleet; and b) severe pollution in the coastal waters. Despite raising their voice against destruction of fisheries resources, pollution and activities harmful to fish resources, most ironically, the small and traditional fishing communities are the primary victims of official

conservation measures that impose marine and coastal protected areas. These protected areas are declared without any consultation with the small fishing communities, let alone with measures to protect their livelihood. Thousands of fisher people are deprived of their right to livelihood in Sundarban, Bhitarkanika, Gahirmatha, and Gulf of Mannar. The women fish workers, about 50% of the total marine fish workers, are further deprived. They and their main working sectors (fish processing and vending) are neglected in government policy. The fish workers working on the mechanized fishing crafts are deprived of labour rights, right to decent work and other entitlements and are most exploited.

Marine fishers are facing grave problem on trans-border issues. They are regularly apprehended, jailed, fired upon and even killed while fishing in the waters bordering neighbouring countries like Bangladesh, Sri Lanka, Pakistan and even Iran. Ports, thermal power plants, industries, large tourism are encroaching upon the coastal areas inflicting shoreline damages and adding pollution to the sea. The beach based small and traditional fishers are facing destitution and are turned into development refugees. Dakshinbanga Matsyajibi Forum suggests the following policy measures to address the above problems –

A. Fisheries Management: Regulation and related issues – There is no marine fishing regulation act for Indian EEZ beyond territorial waters. The territorial waters belong to the maritime states and there are variations in state marine fishing regulation acts. More often than not fishing vessels belonging to one state venture into the waters of other states.

All these raise the need to have a National Marine Fishing Regulation Act that will coordinate with the state acts and provide for sustainable utilisation of fish resources with preferential access to the small fishing communities. This should include the following measures –

1. Match fishing effort to available sustainable yield:
  - a) The fishing effort should match the sustainable yield. This should be estimated and enforced area wise taking into consideration the specific number, nature and area of operation of fishing crafts. Measures should be taken to first reduce the number of mechanised fishing boats applying the principle of subsidiarity.
  - b) In view of the full or over exploitation of fish resources in near shore area the following measures should be considered –
    - i. Moratorium on registration of new mechanised boats;
    - ii. Immediate stoppage of government subsidy, loan etc. for new mechanised boats;
    - iii. For small fishing boats restricting registration to owner operators.
2. Provide preferential access to marine fish resources to small fishers [follow principle of subsidiarity]. Smaller fishers are to have the first right to catch, larger ones are to get the rest. This may be enforced through following measures –
  - a) Extend exclusive fishing zone for small fishers upto territorial waters [12 nautical miles].
  - b) 6 months fishing ban on mechanised fishing, 3 months fishing ban on motorised fishing, no ban on manual fishing.
  - c) Introduce quota of catch for mechanised fishing sector providing for the requirement of the small fishing sector.
3. Ban destructive fishing:
  - i. Introduce total ban on destructive fishing methods like bottom trawling and purse seining.
  - ii. Stop fishing with fish finders and/or LED lights that make fishing very aggressive and indiscriminately destroy the natural fish stock.
4. No foreign

fishing vessel - build capacity of Indian fleet for deep sea fishing: In view of the dismal outcome of the LoP scheme and the threat it bears to the Indian fishing fleet the LoP scheme should be discarded and Murari Committee recommendation regarding capacity building of Indian fishing fleet for deep sea fishing should be resorted to. 5. Regulation should start from the top: Since the larger the effort the bigger is the impact, regulations to control and restrict fishing should start from the top. This means the regulations and punishment for their violations should be, respectively, more stringent and severe on larger fishing boats and less on smaller fishing boats. 6. Build and strengthen MCS system: MCS is almost non-existent. Without robust and effective MCS enforcement of regulation is impossible.

The Department of Fisheries in the ministry of agriculture must work together with the state Fisheries Departments and the stakeholders to put in place MCS system. Coast guard and coastal police should be adequately trained and equipped to strengthen MCS. Most importantly every effort should be undertaken to put in place a community based MCS system.

**B. Right to Fish in Marine and Coastal Protected Areas: Small and Traditional Fishing Communities' Right to fish in the marine and coastal protected areas (reserve forests, sanctuaries, national parks etc.) where restrictions and blanket bans on fishing have been imposed without any consultation with the traditional fishing communities (many of whom are tribal or scheduled caste people), have been a very important livelihood issue. Any conservation measure aimed to protect the natural resources should be drawn and implemented with the informed consent and participation of the fishing communities likely to be affected by those measures. Marine fisheries policy should provide for -** 1. Recognition of the right to livelihood, i.e., right to fish of the small fishing communities in the waters of the marine and coastal protected areas like Sundarban, Bhitarkanima, Gahirmatha, Gulf of Mannar, Malban etc. 2. Mandatory informed consent of the small and traditional fishing communities before imposition of any restriction on their livelihood for conservation. 3. Adequate compensation and rehabilitation of the affected fishing communities. 4. Mandatory participation of the small and traditional fishing communities dependent on the protected area in the management of the protected area.

**C. Ratification of ILO Convention 188 for work in fishing -** The fish workers of the mechanised fishing boats are the worst exploited. They are deprived of the minimum rights and entitlements to secure their lives and livelihood. Though India has been a signatory to the ILO Convention 188 in 2007, GOI is yet to ratify the same. It is a pity that the draft marine fishing policy has failed to make any reference to this major issue in marine fishing. The marine fisheries policy should make provision for – 1. Immediate ratification of ILO convention 188 for work in fishing; 2. Extension of the benefits of the convention to all the fish workers as applicable. 3. Enactment of legislation for statutory implementation of the provisions of the convention.

**D. Enabling Policy for Uplift of Women Fish Workers –** The marine fisheries policy should provide for special attention to women fish workers in – 1. Development and strengthening of

women fish workers' collectives like cooperatives, SHGs, production groups etc. 2. Infrastructure requirements of women fish workers like drying platform, solar dryers, resting and storage facilities, transport, market etc. 3. Access to finance, technology and marketing. 4. Comprehensive social security including housing, drinking water, life and medical insurance etc.

E. Protection for fishers fishing in waters bordering neighbouring countries: The marine fisheries policy should have – 1. Provision to provide adequate warning to the fishers regarding national water limits through markers, patrolling vessels and GPS enabled monitoring system. 2. Provision to have negotiated agreement with neighbouring countries regarding cross border fishing and provide protection available under UNCLOS.

F. Protection from encroachments and pollution: In view of the rampant encroachments on the coast and severe pollution of the coastal waters the marine fisheries policy should have a special reference to – 1. Recognise the necessity of a comprehensive and effective Act on coastal zone to conserve the coastal natural resources and the livelihood of small and traditional fishing communities dependent on those resources. 2. Provide for mandatory consent and participation of the fishing communities and the fisheries department in the sanctioning process of any project on the coast.

G. Control Coastal Prawn Aquaculture: Coastal prawn aquaculture has become widespread and is a large source of pollution. It contributes to salinity ingress in ground water and its discharge is affecting marine life. There is almost no regulation on the functioning of prawn aquaculture farms. Government is providing these farms with financial and marketing assistance. The marine fisheries policy should provide for – 1. Control over the number and coverage area of coastal prawn aquaculture farms; 2. Ban on intensive and semi-intensive coastal prawn aquaculture; 3. Strict compliance of environmental norms by coastal prawn aquaculture farms.

H. Provision for Finance, Infrastructure and Social Security: Finance - The small scale fishing communities including fishers, fish sorters and dryers and fish vendors, due to their lack of finance, are easy prey to money lenders and fish depot owners. They should be provided with easy access to bank finance at soft interest rate. Infrastructure – Boats and nets, drying platforms, solar dryers, storage space, light, office space, community room, auction hall, rest room and toilets, roads, transports and markets etc. are the infrastructure requirements of small scale fishing communities. Social Security – The small scale fishing communities need housing, life and health insurance cover, old age pension and assistance for children's education irrespective of their enlistment as BPL or APL.

I. Small and Traditional Fishing Communities' Rights Act: It has become increasingly apparent from both the aggression of encroachments on and pollution in the habitats and fishing areas of the small fishing communities and the loot of the marine fisheries resources by over and destructive fishing that there should be a Small and Traditional Fishing Communities Rights Act to empower the small fishing communities with right to access and protect fish resources, their

habitat and use of coastal land and to have infrastructure, finance, market and social security facilities. The National Policy on Fisheries should make a strong reference on this.

### **West Bengal: With monsoon approaching, Bengal can't wait for its favourite Hilsa**

<http://indiatoday.intoday.in/story/kolkata-monsoon-bengal-hilsa/1/699364.html>

"While the whole country eagerly waits for the monsoon to arrive, there is one reason which makes the wait for Bengalis a little more special. For months now, Bengalis across the country have been praying for the rain Gods to arrive. The reason - a good monsoon means a more affordable Hilsa on the Bong platter, the gastronomical delight Bengal simply can't get enough of. Over the past two months Hilsa prices have soared massively owing to less domestic production and ban on import from Bangladesh. With the dispute over Teesta water sharing between the two countries, Bangladesh administration had halted exports a couple of years ago. Give us water and let the Hilsa flow, Bangladesh had said after the water sharing agreement got blocked due to opposition from West Bengal chief Minister Mamata Banerjee.

Never before had a food item fallen prey to such a diplomatic political tangle. But two years down the line, with Mamata back in power again, water seems to be flowing in the right direction. Bangladeshi Prime Minister Sheikh Hasina greeted the West Bengal Chief Minister with twenty kilograms of the best quality Hilsa sourced from the Padma river as Banerjee took oath for the second time. Perhaps also hoping that a bit of Hilsa diplomacy may just help get Mamata onboard this time. "We would definitely export Hilsa to India. We need to increase the transport facility and improve the dockyards for better import as half the fishes get destroyed in the process," informed Bangladesh High Commissioner to India Syed Muazzem Ali earlier this week. **HIGH PRICES AFFECT SALE OF BENGALI DELICACY** For better part of this year, the Piscean delight had been off the Bengali platter due to exorbitant price. Earlier this month, during the Bengali ritual of "Jamai Shashti" prices had sky-rocketed to record levels.

In Howrah, four kilogram Hilsa was sold for a whopping Rs 20,000. But with monsoons knocking at the door, Bengal now hopes that it cools down not just the soaring temperatures, but also the prices of its favourite fish. Pre-monsoon rains have made it favourable for a good catch of Hilsa in the Bay of Bengal. Fisherman in south Bengal's Kakdwip, Namkhana and Raidighi are happy. Over the last couple of days there has been a steady rise in their catch. More than 30 tons of Hilsa has come to the market and a couple of trawlers that had gone out into the sea have come back with another 90 tons. But what may seem like a reasonable catch is simply not enough for the massive consumer market in Bengal. "A good haul would be nothing short of 1000 tons or so, especially during the monsoon. But that is not the case. It cannot meet the demands of the overall market and thus the middle class Bengali cannot buy it often as they would like to." says Pradip Chatterjee, Secretary of National Fish Workers Forum in West Bengal. Though fishermen begin their search for Hilsa at the onset of spring, it is the monsoon season that sees the best produce, between June and September. A piece of the well cooked

delicacy would cost nothing less than six hundred to thousand rupees at any good restaurant in Kolkata. But high prices have had an adverse impact on their business this season. Interestingly, the retail price of Hilsa also varies from one location to another in Kolkata. While in North Kolkata, the price of a normal quality Hilsa maybe Rs 400 per kilo, the same might cost you Rs 1000 in another market in the south. Amidst a sharp decline in produce, there's also concern about over fishing. Experts fear it may affect the produce in years to come if not checked in time. ""The basic stock of fish is going down because of indiscriminate fishing of the juvenile Hilsa. It was not the case a few years back. Then there's the concern of polluted water too. So unless we look into it at the earliest, I doubt the Hilsa population would increase in India,"" explains Chatterjee. Be it steamed in mustard sauce or simply fried, Hilsa has somehow managed to take a place of pride in the hearts of millions in Bengal. The countdown has begun and Bengal is simply can't wait to lay their hands on this elusive delicacy.

### **West Bengal: River cruise from Kolkata to Dhaka on anvil**

<http://www.thestatesman.com/news/latest-headlines/river-cruise-from-kolkata-to-dhaka-via-sundarbans-on-anvil/149679.html#u28U00uDs7zmDbKv.99>

"Cruise enthusiasts will soon be able to sail in luxury from Kolkata to Dhaka and relish the sights of the celebrated Sundarbans mangrove forests, courtesy a river cruise service between India and Bangladesh, an official said. ""The guidelines are being finalised by the Director General of Shipping and it will commence soon,"" Arvind Kumar, assistant director of Inland Waterways Authority of India, said. The Bangladesh Inland Water Transport Corporation (BIWTC) is looking after the part in the neighbouring country while IWAI is monitoring the Indian part. Currently only cargo vessels are allowed across the border via waterways. ""It will be a 14-day cruise through the Indian and Bangladesh part of Sundarbans. It is likely to begin end of the year, a said Lt Col. (Retd) SR Banerjee, consultant of Vivada Cruises.

### **West Bengal: In the Sundarbans, Hindu devotees offer 'bhog' to Muslim goddess for protection from tigers**

[http://www.firstpost.com/living/in-the-sundarbans-hindu-devotees-offer-bhog-to-muslim-goddess-for-protection-from-tigers-2840324.html?utm\\_source=fp\\_top\\_internal](http://www.firstpost.com/living/in-the-sundarbans-hindu-devotees-offer-bhog-to-muslim-goddess-for-protection-from-tigers-2840324.html?utm_source=fp_top_internal)

"Fifty-five year old Bhabotaron Paik is a forest guard at the Neitidopani forest reserve in the faraway western edge of Sundarbans jungles. But before he dons his khaki uniform every day, he bathes, wears his dhoti and puts on an orange gamchha (stole) on his bare shoulders, a red tilak (mark) on his brow and heads out, barefoot, to the "Bon Bibi temple"" to present her bhog (the offering of food that is made to Hindu deities). First, he cleans her temple, washes the goddess' utensils before performing an aarti and reciting some mantras. A fellow priest bangs the gong and Paik blows the conch. Then he offers sandesh as bhog for the deity. A portion of it is distributed as prasad to all those participating in the puja. Nothing's unusual for the volunteering priest except that the goddess, Bon Bibi (Lady of the Forests), is a Muslim deity, worshiped mostly by Hindu devotees. Bon Bibi's shrine is located at the entrance within the doubly wired fenced office of the reserve forest under the Sundarbans Biosphere Reserved area. Paik has served as the official priest in the isolated office in one of the densest forest area. He is regular in his puja for the last 30 years. "Ma doesn't discriminate amongst her devotees. So why should we? Everyone prays to her here,"" says the priest.

In times of religious segregation and faith based identity, Bon Bibi perfectly symbolises the intricacies of Indian religious confluence. In the finery of a Hindu goddess, she sports a mark of red vermilion in the parting of her hair, hands full of gold bangles epitomising the perfect Hindu bride. A golden crown on her head, she stands in the midst of her brother Shujaan Ali and Dukhi (a young boy she had saved in the jungle) along with a tamed "Gazi and Narayani the villains and Dakhin Rai the evil tiger all by her side. "It is due to Bon Bibi's mercy that we are alive and earning a decent livelihood, says Paik after reciting the Sanskrit mantras that names all the Hindu gods in addition to Bon Bibi. As the mythology goes, a young Bon Bibi was brought here from her home in Saudi Arabia and deserted by her father (a trader) at the behest of her step mother. Later she became the goddess of the jungles and safeguarded her devotees from the dark and the wild. It is said none of the villagers ever dare enter the jungle without offering prayers to Bob Bibi be it a Muslim, Hindu or Christian. Paik explains, "Each time we go to the jungles we make a promise to Ma Bon Bibi: that we will not take more than we require from the forest, or else we antagonise her. In the nearby small fresh water pond constructed by the forest department, the royal Bengal tigers, icons of the delta forests, come every day to drink fresh water from across the heavily fenced office.

A notice board marks the daily timing of the visits. The pug marks and the cameras at the watch towers maintain track of their movement. However, a few years ago, Debnath Mondal a tiger rescuer was attacked by a tiger very close to Bon Bibi's temple. "It was prayers that brought me back,"" says Mondal. ""I was lying in the hospital for three months. I still cannot hear or see properly from my left ear and eye,"" he says, pointing towards his injured face. Another Bon Bibi devotee and a tiger rescuer from the nearby Bali islands Mrityunjoy Mondal says philosophically, ""We have to cohabit. The world is not just for humans. These jungles are also for the wild. And this is where our Goddess keeps us safe. She does not discriminate amongst her

devotees, the tiger does not either, only we humans do." The evenings are pitch dark and amid the silence, Jatra (folk theatre) artistes enact the story of Bon Bibi. Artists dress up to perform as Bon Bibi, her accomplice/brother Shujan Ali and the outlaw Gazi, who sold off Dukhi, 10, to traders from Saudia Arabia in exchange for honey from the jungles.

Men and women sit together in low light near the numerous shrines to hear the religious saga and show their devotion and solidarity towards each other, living in these high-risk jungles. Men, women, honey collectors, mangrove growers, crab seed collectors, fishermen, boatmen all carry a Bon Bibi statue in their bags, wear amulets blessed by the goddess or tie a small idol of the deity to a mangrove tree branch to keep away the wild and the evil when they are at work. "The goddess enlightens people to go back as soon as their requirement is fulfilled, that is keeping the order of the jungles," explains Nityanand Roy Karmakar, a forest ranger who has been in the reserve area for the last two years. The Sundarbans are a medley of several islands large and small, where land meets water and tides smudge the boundaries, eating away portions of earth every day. Inhabitants in the far-flung villages completely depend on water and jungles for livelihood.

Every large wave brings in a splash of salt water, mixing it with the fresh water of the three major rivers Ganga, Brahmaputra and Meghna that flow out to the sea. About 40 lakh people live in an area of 4,000 square kilometers on the Indian side of the delta region, which extends a further 10,000 square kilometers in Bangladesh. More than 70 percent of the area is free of human habitation but the rest is very densely populated. It is hard to fence the jungles and divide the fresh from the salt water even as humans and wildlife coexist side by side. But the blessings of Bon Bibi, as popular belief holds, makes life just a little bit easier, in this difficult terrain.

### **West Bengal: Restore Forest Dwellers' Rights in Sundarban**

"Project Tiger has turned the forest dependent fishers, honey and fuel wood collectors and shell gatherers of Sundarban into trespassers in their own land. More than half of the total area under tiger project is completely closed to people and has been declared as Core Area. The rest of the tiger project area has been declared as Buffer and a very limited number of people is allowed entry there. Before imposition of these bans and restrictions on peoples' livelihood activities there has been no consultation with the people who from their ancestral times fished in all the creeks and rivers of Sundarban, collected honey and firewood from its jungles and gathered shells from river beds.

Thus started the era of enslavement of the forest dependent people of Sundarban. Physical assaults, abuses, fines, confiscations by the forest staff became the order of the day. Even the passage of Forest Dwellers' Rights Act in 2006 made no difference. West Bengal Government has been stubbornly reluctant to implement FRA in Sundarban. Certainly tortures and restrictions can never be the last word where peoples' livelihood is at stake. Peoples' resistance grew and with this Dakshinbanga Matsyajibi Forum became the banner of fishers' resistance in

Sundarban. Many a successful battle, fought by the people of Sundarban, compelled the forest authorities to take back their orders. At times they even admitted the totally unjust and arbitrary character of their own regime. Presently, to develop peoples' participation, the fishing communities have launched a signature campaign. They will present the Chief Minister of the newly elected government of West Bengal with at least 20,000 signatures demanding implementation of FRA in Sundarban.

### **West Bengal: Sundarbans: Meet India's own climate refugees from Ghoramara Islands**

[http://www.firstpost.com/india/sundarbans-meet-indias-own-climate-refugees-from-ghoramara-islands-2823328.html?utm\\_source=FP\\_CAT\\_LATEST\\_NEWS](http://www.firstpost.com/india/sundarbans-meet-indias-own-climate-refugees-from-ghoramara-islands-2823328.html?utm_source=FP_CAT_LATEST_NEWS)

"Ghoramara, one of the fertile islands of Sundarban delta in the South of West Bengal in Bay of Bengal, is ready to be gulped by the raging sea sooner than predicted. Two decades ago, the land inhabited by 40,000 people has shrunk and it can now shelter only 3,500 now. The high tides everyday swallow portions of their land from all sides of the island and take them deep into the sea. The inhabitants of the vanishing land run inward on the island for temporary safety so that they can again rebuild their washed away huts after water recedes. Most of them have moved out for fear of being drowned, but those left behind are waiting for help to cross the sea. "Those who have money can cross the sea. Those who don't, wait like us to get drowned. Even if we get to the mainland, we remain refugees with no homes, no identity and no community. We are simply losing the battle, explains Rabiul Saha, an island dweller who has been constantly rebuilding his hut every time a high wave washes it away. "We shift inward but nothing can hold the fury of the river." Rabiul's mud house is a few meters away from the enhanced mud embankment and bamboo barricade built to check the rising water. Saha's 13-year-old daughter Rabiya, is a Std VII student who dropped out as there were no teachers at the Hathkhola Pratham Prathamik Bidyalaya centrally located on the island.

Now the pucca building and its first floor serve as shelter for runaway residents when high waves reach shore and tear the mud-and-bamboo fence. The sea level is rising as never before and frequent cyclones and storms are increasingly eroding inhabited lands. Residents have nowhere to go except quietly sneak into mainland taking the first ferryboat and look for alternate place of shelters. And nowhere in the country is the impact of sea level rise so blatant. Most of the people from Ghoramara are destined to live as climate refugees in India without even being acknowledged as one. Sundarbans, the large collage of mangrove islands, home to the Royal Bengal Tiger and several rare and endangered animals, is the real face of climate change hitting the country. Many of these islands are disappearing, slowly swallowed by the deep sea and the rising tides. Thousands of inhabitants who live in the Sundarbans have lost their homes in recent decades. In the delta where saltwater from the Bay of Bengal mixes with freshwater from three of India's major rivers the Ganges, the Brahmaputra and Meghna water from the distributary

Muri Gonga rises and falls dramatically drowning one third of the land that keeps disappearing and reappearing every day.

Twenty-one years ago, Sumit Pramanik's family had shifted from Lohachura, another nearby island that has been completely gulped by the sea now. Sumit was born in Ghoramara. He is studying engineering 250 kms away from his home in West Bengal's Murshidabad district but each time he leaves home for his hostel, he looks back one last time specially to see the mound in the water of Murigonga River, the distributary of Hoogly (Ganges) where his home is. This is to reassure himself that it will not be washed away before he returned. Sumit returned in May 2016 for his semester break and the fear of a cyclone cycle gripped him as usual. The high tide water had entered the village and destroyed crops, broken the bamboo fence and washed away portions of many of the mud houses that had been recently rebuilt at Mandirtola, Kheya Ghat. This isn't unusual. But this has become too frequent to rebuild homes easily on the island. The once-a-day ferry run by the government that came in with supplies to Kheya Ghat could not reach the banks because of severe turbulence in the region with high silt in the river delta. The island remained water-locked from all sides for the whole of last week.

“People wait for the high tide in this region so that the ferries can float and come. But with high tides come the gush of water that washes away our land every time. The best way to keep a track is through the Hindu calendar. During days of full moon and no moon, the water rises high and recedes equally low making it severely difficult for us to cross over to the mainland, explains Sumit. Sumit's father Arun Pramanik is the panchayat committee member. They are influential people in the village. They run the ferry business and provide supplies to the island. Arun says that his main job now was to create awareness about the vanishing land. “In fact we are ready to move away. But cannot leave the community people behind. Where would all of us go? Arun asks. “This is man-made; the rivers have never been in such a rage. It never took away my father's lands. I believed at least I would live all my life here but now something is terribly wrong and the river is in great hurry, he adds. They are here; India's own set of climate migrants. No one in the islands knows about climate change and the worldwide impact it has. Some have heard of ‘Bai?bika U??at?, i.e. global warming but do not know how have they contributed to the increase in temperature leading to rise in sea levels that is eating away their lands. Ghoramara had been building and rebuilding for the past many years.

Since Lohachura went into the womb of river Murigonga, 5,000 families like the Pramaniks moved to Ghoramara in 1995. Now again their worlds seem to be taking the same turn. Debendra Tarek is 80 years old. His younger family members are moving away one by one to be homeless and wander the mainland in West Bengal. Debendra is old and does not want to leave his home. A farmer, he still sows the yearly rice in the leftover paddy fields in the village. He proudly shows the “Dudedhswar variety of saline resistant rice that was introduced decades ago for the islanders of the saline rich soil. “Our crops would get destroyed by one flash flood. The new variety of rice withstood the salt and tasted better. But now situation has changed. There are no

farmers left and paddy gets washed away completely during floods." In the last three decades, the island has lost 7.6 square kilometers of land.

Now it exists in just 3.3 square kilometers. Those who had shifted had found shelter in the nearby Sagar islands about 25 kms away in the sea. People were ferried in boats on several dreadful mornings after the floods to the barren settlement. Kamalpur, 3 Number Colony, in Sagar islands thus became home to many of the climate-affected migrants from Ghoramara and Lohachura islands. Known as the Ghoramara refugee colony, people have again returned to rebuilding their lives. Fishermen have turned carpenters, boatmen cart pullers! Muntaz Sheikh and his wife Zarina bibi had fled the island "with nothing in a turbulent boat to find shelter at the Sagar islands a decade ago. They were fishermen but the thought of fishing now scares Zarina. Her neighbor Ratan Maity drives a handcart.

"We had nothing there and we have nothing here. There I caught fishes but now we live far away from shore. So I pull a cart now explains Ratan, who like Muntaz and Zarina, lost his home and all his possessions to the frequent floods. "Only we lived, the water did not take us away," says Zarina raising her hand in gratitude towards the sky. Yet, Sagar islands, known for Ganga Sagar, one of the prime pilgrimages of the Hindu community, has grown equally vulnerable with the rising water levels. "Sea levels in the Sundarbans delta are rising fast; well above the global average. Several small inhabited islands have been completely submerged in the past few decades and Ghoramara is amongst the most vulnerable ones, explains Dr Sugata Hajra, director of the School of Oceanographic Studies at Jadavpur University.

He is studying the process through satellite mapping data of the region. Hazra explains that more than 80 sq. kms little less than half the size of Kolkata has submerged in the past three decades in the Sundarbans delta. The causes are complex and besides the natural fury, it can be attributed to human behaviour. "The predictions for Ghoramara had been there for the last two decades. But it has grown severe. And one of the most important factors is man-made climate change. This makes not just Ghoramara, but the nearby mainland and cities equally susceptible, he adds.

### **West Bengal: It's time to go wild for life**

<http://www.dhakatribune.com/op-ed/2016/jun/05/its-time-go-wild-life>

"The 2030 agenda for UN's Sustainable Development Goals is to achieve economic, social, and environmental sustainability in a balanced and integrated manner. To achieve this goal, the world community is determined to protect the planet from degradation through sustainable consumption, production of natural resources, and urgent action on climate change. However, the UN long ago acknowledged the contribution of biodiversity and ecosystem in providing goods and services which accounts for at least 40% of the world's economy and 80% of the needs of the poor, and are almost free. To create awareness on environmental issues, each

year UN celebrates World Environment Day based on a certain theme. This year, the theme is “Go Wild for Life and the host of the event is Angola because of its imminent threat of illegal trading of ivory, rhinoceros horns, and dwindling biodiversity.

Likewise, the Bangladesh government, along with its development partners, are also celebrating the day. As a developing nation, the country's economy has its deepest roots in its natural resources in some form. Increased wildlife poaching and unplanned development are eroding its precious biodiversity and natural heritage, and are driving some species to the brink of extinction. Unfortunately, the contribution of biodiversity and ecosystem is neglected in development planning. For example, the Sundarbans -- the nation's largest mangrove forest -- helps in reducing poverty for the 2-3 million people living in the impact zone by expanding economic opportunities. The mangrove forest stores about 615.5391 million mg carbon and acts as a regulator for greenhouse gases. It also acts as a deterrent to tropical cyclones and storm, and saves assets worth millions of dollars.

But this monetary value and its contribution are being ignored in our economy. I argue about the monetary value because the Vietnam government has assessed that planting and protecting 12,000 hectares of mangrove costs just over a million dollars, but it also saves annual expenditures on dike maintenance of well over \$7 million dollars. However, Bangladesh does not have a comprehensive assessment on the contribution of the Sundarbans to our economy, including the savings it makes during cyclones by protecting vulnerable communities. The iconic Royal Bengal Tiger, the jewel of the mangrove, is suffering from habitat loss and falling in numbers due to the decline of its prey. IPCC also predicts that the tiger population in the Sundarbans could disappear by the end of this century due to rise in the sea level caused by climate change. The tiger census conducted by the Forest Department of Bangladesh has found 440 tigers in 2004, while the last census in 2015 officially found that the number is only 106 in Bangladesh territory.

Honey collectors in the Sundarbans say the wilder the Sundarbans, the higher the ecosystem services. They also predict that if there are no Royal Bengal Tigers in the Sundarbans, ultimately, there will be no Sundarbans, period. Without Royal Bengal Tigers, the forest will be less dangerous, and thus safer for wildlife poachers, illegal trading, honey collecting, fishing, and forest-cutting. When the mangrove forest has a great potential to fight climate change, initiatives launched by the government and development partners are not sufficient in protecting wildlife. In the last five years, the Bangladesh government has invested Tk3,000 crore (\$390m) through 369 projects initiated by the Bangladesh Climate Change Trust Fund. But none of the projects has exclusively focused on wildlife preservation in the Sundarbans except a small project that seeks to induct the Sundarbans as a new wonder of nature. However, this project has no direct value for the conservation of the Sundarbans. In fact, the government has approved environmentally sensitive development projects like the construction of a coal-based power plant near the Sundarbans and has authorised commercial ships to navigate the rivers within the forest. All

these activities are threatening noise and water pollution, which will adversely affect Irrawaddy dolphins and other species, and can be attributed to “counter climate financing initiatives for this world heritage site.

However, development partners and donors are also doing their bid to conserve the ecosystem and raise awareness to protect its endangered species. Climate funds like Bangladesh Climate Change Resilience Fund and Pilot Program for Climate Resilience have also ignored the issue of conservation of wildlife to combat climate change. Although Global Environmental Facility has implemented certain projects, it has also canceled a project which was exclusively focused on biodiversity conservation concerning the Sundarbans. Recently, GEF has decided to set up a new trust fund to implement the Paris Agreement to build country-level adaptation and mitigation capacities by providing, initially, \$50m through GEF agencies.

As both opportunity and the need for adaptation finance exists, the government should create more pressure on development partners to provide adaptation finance for biodiversity conservation. Because, if this mangrove and its unique species cease to exist, there will be no place for the wild to go to. The government needs to ensure stronger and more transparent policies for the correct utilisation and implementation of projects by integrating poverty, climate vulnerability, and sustainability issues to access ecosystem services. So, this year's theme of World Environment Day 2016 matters to us more than any other nation, to ensure environmental integration, economic development, and better adaptive capacity to face the pressing challenges of climate change.

### **West Bengal: The Vanishing Islands of India’s Sundarbans**

<http://www.npr.org/sections/parallels/2016/05/23/478393443/the-vanishing-islands-of-indias-sundarbans>

"People in India know the Sundarbans as a beautiful and dangerous patchwork of mangrove islands covering nearly 4,000 square miles extending into Bangladesh. It is also home to a variety of rare and endangered species and a UNESCO World Heritage Site. Now, this watery landscape is getting international attention for a different reason. Some of these islands are disappearing, swallowed up by rising tides. Tens of thousands of people who live in the Sundarbans have lost their homes in recent decades. This is an estuary where saltwater from the Bay of Bengal mixes with freshwater from three of India's major rivers the Ganges, the Meghna and the Brahmaputra. The tides in the Sundarbans are so dramatic that about a third of the land disappears and reappears every day.

That's been happening for centuries. But just in the past few decades, the changes have become more extreme. In this delta, water levels are rising more dramatically than in other parts of the world especially on the island of Ghoramara. Approaching the island, it looks like a piece of

cheese where a mouse has been nibbling around the edges. There are trees in the center and mud flats on the perimeter, but chunks have been removed from the landscape. The mud bank has been heavily eroded by rising tides, which leave jagged tooth marks cutting into dirt and rock. Trees have toppled into the water. This island used to be home to 40,000 people. Today, just over 3,000 live here. The first person we meet is 45-year-old Rubil Saha, who lives in a mud hut with his two children. Only a crumbling dirt embankment separates his house from the water.

"Every year, my house gets inundated," he says. "Water from the river comes in and breaks the house. I rebuild it. And it's again destroyed." He shows us where the walls of his house are cracked and eroded. "This entire wall was broken," he says, "and I have built it again." Back when Saha was born on this island, the land was twice the size it is now, according to Sugata Hazra from Jadavpur University in Kolkata, who has been studying satellite mapping data of the region. Saha's parents and relatives have all left. But he can't bring himself to go. His weeping seems to burst out of nowhere. "This is my motherland, so I can't abandon it," he says. "And the pull of the motherland roots me here. I am drowning in the river water, but I can't leave."

Down the path, a boy named Sheikh Firoz comes out of his hut to greet us. He says he is 15 but looks younger. He has a cocky swagger, and a matter-of-fact attitude about life here. "Last time the flood came, I was asleep," he says. "My parents woke me up and we ran to the government school to take shelter. When we came back, the house was washed away." What did he think when they saw there was no house? "We just built this new house." Its midday sweltering at the center of the village. Children are splashing in a pond while women pump water out of a nearby well. Among all these mud huts, there is one concrete home, two stories tall. This is where the village leader, Arun Pramanik, lives. "I know I have a beautiful home," he says, "but ultimately it will go into the womb of the river."

All we can do is try to delay the process." Pramanik used to think he'd have 20 or 30 more years here. But he says the floods have been coming so much more frequently, now he thinks it might not be long at all until everything is washed away. "We'll never have the same kind of community, the same kind of bonding we have here," he says. "Everybody will separate to new homes, new communities, new places." It's already started. One of those new places is nearby Sagar island. It's much bigger a Hindu pilgrimage site, with power lines and paved roads. You can drive an hour and still not reach the opposite side. The village has only existed here for about 20 years, since people started being forced to leave Ghoramara. This is where the state government of West Bengal resettled them. Tens of thousands have been relocated over the years.

"My father actually lived and died [on Ghoramara]," says Sushil Mali, now a grandfather himself. "The river didn't eat my father's house. Mali wasn't so lucky. He brought nothing to Sagar. "No. Nothing. All my things were gone." Ratan Maity moved here 15 years ago with his two kids. "I had no other option," he says. "The river was taking away our homes." He

pieces together work pulling a cart and doing other odd jobs. He has never heard of melting polar icecaps or climate change. He's unaware that sea levels are rising around the world. All he knows is that his river in the eastern corner of India started devouring houses. ""The river was angry,"" he says. ""It took away so many things. It took people's lives. Children were swallowed. My home was gone. That's why I had to leave. We were scared."" His new home is far inland. He can't go fishing anymore. But he feels safer. I ask if he's angry. ""Sure, I'm angry,"" he says. ""But what's the point? You can't defeat the water.""

### **West Bengal: Coastal regulations for Tajpur**

<http://timesofindia.indiatimes.com/city/kolkata/Coastal-regulations-for-Tajpur/articleshow/52292133.cms>

"There was a long pending demand by the hoteliers association in Tajpur who had sought permission for setting up hotels or resorts that there was no specific guidelines for them to follow as the area falls under CRZ -1 zone which is a 'No-Development Zone'. The Digha Sankarpur Development Authority (DSDA) had asked the Institute of Wetlands to come up with a demarcation map for a 7km radius around Tajpur. The map is now prepared as the DSDA authorities would be able to allow investors to set up hotels or resorts based on the coastal regulation norms. For Tajpur, there was no specific CRZ map and DSDA authorities used to get requests for getting permission to set up hotels and resorts. Senior officials of the state urban development department made site inspections in Tajpur on last Saturday and held a meeting with DSDA officials to look into the details of the map that has been prepared.

### **West Bengal: In Sunderbans, fishermen enter unchartered territories in search of livelihood**

<http://twocircles.net/2016may16/1463411257.html#.VzrQ4DV96M8>

"The Public Hearing had made it clear that due to the lack of effectiveness in implementing the Forest Rights Act, issues that now threaten the livelihoods of the people go much beyond the implementation of one, or a few, Acts. Over the past two decades, the very existence of these islands, and its people, has been under increasing threat and man-made laws seem ill equipped to help local people find ways of sustenance. Rajni Mandal, a member of the audience in the Public Hearing had been listening with apt attention, and towards the end of the meeting, approached me. After questioning me about why I was here, he said something which seemed surprising initially. "I do not understand the point of holding the meeting in this school, he said, before clarifying, "Hardly anyone from this island, or Rangabelia village (on the main island of Gosaba) go fishing.

If you want to talk to people, come to my village, almost everyone is either a fisherman or a honey collector. If they had held this meeting in the interior islands, it would have benefited a lot

more people, he said. We would have to take another boat, he said, to go to his village, Chotto Molla Khali. Mandal, who is also a fisherman, was in his 30s and had been fishing for the past 15 years. He said he preferred crabs over fish, for they fetched more in the market. The boat ride was short: his village had been on the same island as Uttar Danga, but on the opposite side: from this village, one could see the site of probably the Left Regime's worst atrocity: the island, and the massacre, of Marichjhapi.

While approaching Chotto Molla Khali, Mandal explained his situation. Yes, the situation with Forest Officials had worsened, but his concerns were far more serious. "There is no fish, he says. What? "There is fish, yes, but we are running out of places to find them, he says. Why? As we walked through bone-dry land with remnants of what seemed like a good paddy harvest, Rajni asked other men from his village to join in. Simanta Mandal, a 27-year-old fisherman, showed us his recent catch: a cast of crabs which would sell for Rs 400 a kilo in the market. On first impressions, it seemed a nice catch for what he described as a "two-week incursion into the maze of rivers. That is, until he broke down the numbers over twenty minutes. Not everyone can go fishing in Sunderbans. Not even locals, who have been living here all their lives. It is another matter that even if you do venture around the islands, you will land zero fish (because as Mandal said, there aren't any fish).

The licence to fish, the permission to exploit of the 4.2 million people in Sunderbans, almost 90% are from the Paundra Kshtriya, Namasudra, and Jele castes from the Schedule Caste Community. In the late 19th and 20th century, according to various studies, Paundras and Namasudras migrated to the forests during the time when the British government was converting large tracts of mangroves to agricultural land. A number of people in Sunderbans, including Rajni Mandal, trace their roots to Jharkhand. Among the population, almost 80%, or three million, depend on fishing for a source of livelihood.

But the number of Boat Licensing Certificates, which gives you the Right to fish in Sunderban waters, stands at 923. Yes, for a population of roughly 3 million, there are 923 licenses, of which only 700 or so remain active. The other license owners either died, or left the profession. The licenses were issued in 1973, for the Sundarban Tiger Reserve area of 892.38 square kilometers. "What has happened since, Simanta spoke after explaining the concept of BLC, "is that all fishermen rent these BLCs for anything between Rs 20,000-30,000 per annum, depending on the time of the year and the catch they expect. I too rented this for around Rs 25,000 for the year. Importantly, while the license belongs to one person, there can of course be more people on the boat, since it is a collective effort. Simanta last went out to fish with three other men, so his collection had also been split accordingly.

"Then, there is the cost of going to fish. We take loans from Arakdar (merchants), who charge no interest on the loan. Instead, we either pay them off slowly, or as is mostly the case now, they buy our catch at about 25% lower than the market rate, Simanta adds. This, he added, is done

until the loan is paid off. “It is more than 30% lower than the market price, another fisherman added. Others, however, agreed that it was “not a bad deal in order to go fishing. It seemed like the only viable option too, given that none of the fishermen we spoke to had ever approached a bank for a loan. “So, Simanta continued, “after all these calculations, I made about Rs 4,500 from this trip, he says. “But do you know how long do we have to row for this catch? he asked. Why couldn't they use mechanised boats? Was it because of monetary constraints? “No, Rajni Mandal added, reminding me again of what Younus Mulla said.

“We cannot take mechanized boats for fishing, it causes pollution, he said. This seemed a bit odd, for we had seen cargo ships heading towards Bangladesh on our way. “Cargo boats, cruise ships, tourist boats are allowed to use diesel-powered boats, except fishermen. We have to row, he said. “Upto six hours to enter the area of fishing, Simanta added. What was defined as the area of fishing? That again, is a complex issue when it comes to Sunderbans. The Sundarban Tiger Reserve (STR) is spread over 2, 585 sq. kms. Of this, about 1,600 square kms is land area and the rest 985 km is the water area. The first Sunderbans Management Plan demarcated the STR into the wilderness zone or Core Area measuring 1,330.10 square km. No activities like fishing or honey collection was permitted here. The remaining area, in the north and the east of the Core Area, was defined as the 1,254.9 square kilometer buffer zone, wherein all activities that forest dependent communities engage with were permitted.

In 1977, the forest department expanded the no fishing zone by 437.61 square kilometers, notifying Sajnakheli Bird Sanctuary, to about 1,692 square kms. Within the STR, in 2007, the State Government expanded the area by around 1,700 square kilometers. Essentially, what this has meant is that not only has the fishing area come down, it has also presented the fishermen with challenges they cannot simply cope with. “Unlike land, you cannot divide water. A number of our fishing routes have been blocked and we have to now go to new places to fish, where the Forest Officials are only too happy to take their share, says Simanta. The increase in reserve forest area, the increase in fishing due to multiple rentals of the same old BLCs and the recent changes in weather due to global warming have meant that the fishermen of Sunderbans, despite living around water, are now entering unchartered territories for fishing.

“We often end up fishing close to the waters around the Indo-Bangladesh border. In a few years, we will be going to the sea to fish, added Rajni. The waters near the border present another challenge: Pirates. However, according to the fishermen, the incidents of Pirate attacks have come down in the last five years due to the increased patrolling around the border areas. “But who is scared of pirates when there are Forest Officials around, Simanta adds laughingly. But what about Tigers: the most famous enemy of the fishermen? “The last time we spotted a Tiger on this island was in 2009, a couple of months after Cyclone Aila. Now the Tiger is not so much an issue, at least on this island, Simanta said. All reserve islands had been sort of wrapped in a two-layer netting, to ensure that neither humans enter the reserve islands nor do the tigers

encroach out of the territory. “Tigers and humans can live; they have done so in the past too. It is the other humans (forest officials) we are scared of, added another fisherman.

### **West Bengal: Powerful cartel sets Sundarbans on fire to facilitate illegal fishing, claim locals**

<http://bdnews24.com/bangladesh/2016/05/06/powerful-cartel-sets-sundarbans-on-fire-to-facilitate-illegal-fishing-claim-locals>

"Rayenda Union Parishad Chairman and President Sundarbans Co-operative Management Committee of Sarankhola range Asaduzzaman Milon told bdnews24.com that there were about ten plots of low-lying land in the region. During rains, these low land abound with fish. “A group of five to ten people led by Rayenda Union Awami League President Shahnawaz Hawladar alias Shahnawaz Shikari has been controlling the fishing activity in the area. “By influencing a group of Forest officials, they take huge sums of money from fishermen to allow them to catch fish there. Milon said this group often cleared the forest by setting it on fire, to facilitate those fishermen who bribed them to go for fishing. But after the Forest department of late became alert and lodged a few cases against some of the culprits, the group got enraged, he said.

“They are venting their anger on the forest department by repeatedly destroying Sundarbans, he said. Two of the three recent cases relating to the Sundarbans fire have been filed with the Bagerhat Forest Court. Dhansagar Station Forest Official Sultan Mahmud was the petitioner in all three cases. Shahnawaz has been accused in all three cases. He was temporarily suspended on Tuesday on charges of dereliction of duties. “I have been alert since taking charge of the station, Sultan Mahmud said in defense, “on April 13 last, I filed a case against them (the group) after a fire broke out. This made the group angry on me, he added.

Though 17 people have been charged in the three cases, names of accused other than Shahnawaz have not been revealed. Sultan Mahmud also did not say who else was involved in the cartel. However, conversations with fishermen from the Uttar Rajapur village bordering the forest reveal the names of Rayenda Union Ward I UP member and Ward Awami League Organisational Secretary Zakir Hossain Khan. Zakir was also interrogated by Sarankhola police after the April 27 fire. Sarankhola OC Md Shah Alam Mia said, “Zakir was detained and questioned on Monday regarding the forest fire. But he was release the next day as his involvement in the incident was not found.

Speaking to bdnews24.com, many local fishermen said that Zakir had joined hands with Shahnawaz and was trying to seize control over illegal fishing in the Dhansagar area. But rifts emerged between them during the March 22 elections. After the fire broke out Zakir was also spotted helping the Forest department in dousing the flames, they said. When his reaction was sought on the allegations, Zakir said, “I do not know how the fire broke out here in the past. But

having seen the last fire in Tulatala area, I am convinced that the fire was a deliberate act. He denied having any hands in the fire and said none of his associates had anything to do with the fishing cartel. "Rather I went out with my men to douse the fire along with the Forest Department.

A local group is trying to frame me in the case, he claimed. When asked for his views on the issue local MP and Bagerhat Awami League District President Mujammel Hossain vowed strict action against those involved in the Sundarbans fire and said that even his own party members would not be spared if they were found to be involved. Sundarbans East Sector DFO Md Saidul Islam said entry of all to the forest area within the Chandpai Range without permission had been prohibited. Five three-member committees have been constituted to keep vigil to prevent trespassers from entering into the forest area. He also said stern action would be taken against any official of the Forest Department linked to the cartel.

### **West Bengal: In Sundarbans, the poor demand right to fish**

[http://www.business-standard.com/article/news-ians/in-sundarbans-the-poor-demand-right-to-fish-116042500938\\_1.html](http://www.business-standard.com/article/news-ians/in-sundarbans-the-poor-demand-right-to-fish-116042500938_1.html)

"As rising sea levels force farming communities in the Sundarbans to explore other means of livelihood, a section of fishermen have voiced their demand to fish in the rivers and canals of the world's largest mangroves. ""In the Sundarbans, poor fishermen are not allowed to fish in the rivers. In other states and in other districts, it is not the scenario. ""According to the West Bengal Marine Fishing Regulation Act, 1993, fishing in the Bay of Bengal is banned for a certain period of the year but it does not bar fishing in small creeks and rivers, but still we are not allowed to do so,"" Joykrishna Halder, secretary of the West Bengal United Fishermen Association, told IANS. He said the fishermen had approached the forest department ahead of the assembly polls with their request but no action has been taken so far.

The cluster of islands in the Indian Sundarbans stretch across two districts -- North 24 Parganas and South 24 Parganas. Polls were held in Sandeshkhali and Hingalganj islands of the Sundarbans in the North 24 Parganas on Monday. South 24 Parganas will witness balloting on April 30. The fishermen, mostly residing in Gosaba, Basanti, Sagar, Kultoli, Kakdwip, Diamond Harbour, Raidighi, of South 24 Parganas, expose themselves to danger of attacks by Royal Bengal tigers during their attempts to eke out a living through fishing, said Halder. ""But they still do it because they do not get any compensation in terms of food grains etc. which is provided in other states. How else will they fend for themselves?"" he asked.

### **West Bengal: Vessel owners, cargo traders trivialise Sundarbans**

<http://www.thedailystar.net/city/vessel-owners-cargo-traders-trivialise-sundarbans-1211413>

"Though experts think, cargo vessels plying through the Sundarbans' rivers are like "mobile bombs for the tigers, the vessel owners are putting pressure on the government, demanding to reopen the Shela river route for cargo operations. The government suspended the operations on March 23, following the accident of coal-laden cargo MV Sea Horse near Harintana on March 19. Inland Water Transport Owners from Khulna division and other business groups made the demand at a joint press conference held at Khulna Press club yesterday morning. The government has opened alternative Mongla-Ghosiakhali channel after dredging, but vessels with more than 10 feet draft are unable to operate through it, they said. "Around 70 percent vessels are unable to come to Khulna, Mongla, and Nowapara from Chittagong, Dhaka and Sylhet, said advocate Saiful Islam, secretary general of the coordination committee, who read out the statement. The Sundarbans cannot be more important than life and livelihoods of people, it read.

However, the experts have been warning the government to stop the cargo vessel operations through the Sundarbans. A recent report titled, "The status of Tigers in the Sundarbans of Bangladesh and India published last week, states the usage of water channels inside this forest as conduit for commercial boat traffic is a threat to this landscape. Over 200 vessels ply everyday through the Shela and Passur rivers located in and near the Chandpai-Sarankhola range of Bangladesh Sundarbans. These constant boat movements can become potential barriers to dispersal between islands, leading to fragmented and isolated tiger populations, it said. Currently there are total 182 tigers with 106 in Bangladesh and 76 in Indian side of the Sundarbans. The report was published in India during a ministerial conference on Tiger, held in Delhi. Expressing concerns about the Rampal power plant, it said, the 1,320 MW coal based plant, along with the already established busy Mongla Port would only exacerbate this problem.

**West Bengal: Greed and indifference are destroying east Kolkata's wetlands**

<http://scroll.in/article/806273/greed-and-indifference-are-destroying-east-kolkatas-wetlands>

"Ask a Kolkata resident about the wetlands along the city's eastern fringe and you'll usually get a blank stare. Some may describe it as a swampy garbage dump, an abode of mosquitoes. A few will remember their fish and vegetables come from there. Very few will be aware of the drainage service it provides to keep the city running. The invisibility jumps at you on the Eastern Metropolitan Bypass, a 21-km arterial road that roughly marks the boundary between thickly populated areas and the wetlands. There's not a single billboard or sign that even acknowledges its presence or the unique functions it fulfils: treating the city's sewage and producing much of its food. Kolkata, like other cities in India and elsewhere in Asia, is expanding rapidly. Population in the metro and its suburbs rose by as much as 55% to 14 million in 2011 from nine million in 1981, according to the latest census.

Amazingly, for a sprawling city of its size, the cost of sewage treatment is among the cheapest in the world owing to the wetlands on its eastern fringes. It is also virtually unnoticed that the carbon footprint of the food the city consumes is minimal because some 50% of the vegetables and fish are produced right in the backyard at startlingly low costs. The fish, for example, grow on free food in the form of algae from the wastewater treatment. About 10,000 tonnes of fish are produced in the bheries every year and 150 tonnes of vegetables are supplied daily to the city's markets, official estimates show. For all its usefulness, the Kolkata wetlands face a dwindling future from land sharks and unplanned, dirty industrialisation. Of the two, filling up the large fishponds, locally known as bheries, and building on them present the greater danger. Lust for land the hunger for land for real estate development exerts a relentless pressure on this unique ecosystem of vegetable gardens and shallow fishponds that has been recognised as a Ramsar site since 2002.

It is unique even among the world's most prized wetlands in its sustainable symbiosis with a metropolis. A law barring new construction on the wetlands, which entered its tenth toothless year, last month, has not dissuaded property developers. The instances are too many to be denied. More instances are not hard to find. In Kharki village near Bantala in the wetlands, a 29 bigha (about 10 acres) bheri is being slowly filled up. "Everybody can see what's happening but it's nobody's business, said Ravi Shankar Bar, a resident of the village. Kharki is right now far from any residential development along the bypass but the situation could very well change in five to ten years. The East Kolkata Wetlands Management Authority, which was established in 2005, has virtually no control over what happens within its jurisdiction that is spread over 12,500 hectares.

Most of the time, the authorities are reduced to filing police complaints when any illegal construction is brought to its notice. As the city expands, "the wetlands are real estate in waiting, said Dhrubajyoti Ghosh, a UN Global 500 laureate who has been a lone crusader for the wetlands for over 40 years. He explains that the tendency of filling marshes for habitation is only natural beside a big city. Ghosh cites the example of draining and filling up the Salt Lake, once the northern portion of the wetlands, to establish a planned suburb in the sixties. "But a balance has to be struck, said the engineer-turned-ecologist. As the situation on the ground stands right now, that precious balance seems to be missing. "Real estate is the most visible industry in the wetlands, said Dhruba Das Gupta, Project Director at the Society for Creative Opportunities and Participatory Ecosystems, a non-profit that works with communities in the area.

**Dirty industries** What also riles the septuagenarian Ghosh is the illegal mushrooming of plastic recycling and leather processing units on land which were a few years ago fertile vegetable gardens. More than 50 plastic recycling units have sprung up in recent times. On the stretch towards Bantala, more than 25 leather-processing units boil leather waste in huge cauldrons, emitting noxious fumes. It is then spread to dry and subsequently shipped to tea gardens as manure. "Leather units release effluents into the sewage canals that feed the bheries. It harms the

fish, said Das Gupta. The air pollution around the cauldrons is also intolerably high. These patently illegal units are conducting business openly. “They are not supposed to exist at all, said Ghosh. But they do and hardly any voices are raised. Violence is never too far away in the wetlands, where laws of the land are often observed only in the breach. The steady encroachment on the wetlands worries the communities that have been living here for generations. More than 1,20,000 residents, many of them vegetable farmers and fisher folk, are providing a useful service to the city, Das Gupta points out. There are also 5,000 local rag pickers who manually recycle Kolkata's solid waste at Dhapa, the city's garbage dump in the wetlands, a daily effort that has been lauded internationally. “They cannot just be pushed out, she said.

“It is unacceptable. Besides being a practically free, semi-natural waste treatment system and vegetable garden and fisheries, the wetlands also serve the vital function of an outlet to the frequent flooding that inundates Kolkata every monsoon. Since this doesn't cost a penny, it is taken for granted. As our planet heats up, the risks of recurrent flooding rise significantly in many major cities, many studies show. Kolkata is prominently numbered among them and the wetlands even now provide a much-needed release. Shrinking it drastically to build houses is only inviting trouble, experts say. In the end, if the East Kolkata Wetlands are to be saved in a meaningful way, there has to be heightened public awareness that the city sorely needs the wetlands for its own survival. If the people are indifferent, Ghosh asks, “What hope can be there for the wetlands?”

### **West Bengal: The Sinking Sundarbans: But How Will the Government Correct Its Own Folly?**

<http://www.mainstreamweekly.net/article6311.html>

"Recently there was a frightening report in a mass circulated vernacular daily of Kolkata. The report indicated that the Ghoramara Island of the Sundarbans, situated just three miles away from the Bay of Bengal, is now on its way to obliteration as the advancing river is certain to gobble it up in the near future. Only 3000 bighas of land now remain out of the 29,000 bighas which constituted the island previously.<sup>1</sup> the report should raise consternation as in the event of the destruction of the Sundarbans, the existence of Kolkata will also be threatened. Already there are reports that the city of Kolkata is also sinking. It is unfortunate that the Sundarbans, which could have been a treasure for the country in the age of global warming, have in fact been devastated by the myopic policies followed by the governments at the Centre as well as in the State of West Bengal since independence.

Obviously all talk of conservation and protection of environment does not hold any meaning for the Sundarbans as reckless immigration, which had started during the time of the colonial British rulers, is still continuing. Ghoramara was in fact one of those first group of islands that had served as British outposts in the Sundarbans. Here was situated the Sundarbans' first post and

telegraph office and police station.<sup>2</sup> The location of the island just on the confluence of the Bay of Bengal and the Hooghly river establishes that by going so deep into the Sundarbans' pristine forest the British had set in motion the process of destruction. But very few people in the corridors of power are taking note. As early as in 2007, the School of Oceanographic Studies, Jadavpur University (SOSJU) had noted that Ghoramara had shrunk in size by 41 per cent since 1969.<sup>3</sup> Their prediction that the reduced and famished stretch of land might no more last beyond 2020 now stares upon the faces of the two governments at Kolkata and New Delhi.

But more threatening is the SOSJU's assessment that by 2022 a dozen more islands in the Sundarbans will go under the sea.<sup>4</sup> but another figure given by the SOSJU is more revealing and point to the real reason behind the present horrific plight of the Sundarbans. As per the report, the existing 3 km by 3 km land in the Ghoramara Island now supports some 5400 marginal farmers, fishermen and daily labourers.<sup>5</sup> this refers to a large pattern now prevalent in various other islands of the Sundarbans increasing density of population per square kilometre. But the delta is completely unsuitable for human habitation and should have been left alone. The following portions of the article will prove that this could not have been possible without either the governments' initiatives or apathy. Has the Central Government or the Government of West Bengal chalked out any strategy to fight the coming environmental disaster?

Apprehensions have been expressed in certain quarters that much of the city of Kolkata will be under water in the next 50 years and this means submergence of the Sundarbans first.<sup>6</sup> Ghoramara, along with two other already submerged islands, namely, Lohachara and Suparibhanga, and has given the forewarning. It has been observed that the rate of warming of temperatures in the rivers, creeks and at the confluence of the sea in the Sundarbans is much more than the average rate of global warming a rise of 0.5 degree Celsius in every 12 years. It has been estimated that from 1980 to 2016 there will be a 1.5 degree Celsius rise in the water regime of the Sundarbans.<sup>7</sup> It is really inexplicable why successive governments in independent India did not put a stop to the process of bringing people from outside and then settling them in different islands of the Sundarbans, a practice first started by the colonial British administration to ensure supply of food and cereals for the burgeoning European population of Calcutta.

The British had an insufficient knowledge of the local geology and geo-morphology. So they cleared dense forests and settled cultivators in a region which is not meant for human population. The British wanted to put the clock back and make the Sundarbans prosperous again. However, since the end of the medieval period the lower Gangetic basin has slowly changed its alignment from the west to the east.<sup>8</sup> Thus the local rivers, the lifelines of the region, had become mere brackish waters of the sea and their connections with the Ganges, which itself had lost much of its water supply to the Padma, were severed. From this time onwards the flora and fauna in that part of the Sundarbans, which now falls within the present-day Bangladesh, became healthier due to the increased supply of sweet waters.

Very soon not only West Bengal, but some other parts of India as well may face a peculiar phenomenon called 'environmental refugees' as the Sundarbans are now experiencing intra-regional as well as inter-regional migrations. Already a good number of such people have settled in the fringe areas of Delhi and Mumbai. Kolkata too is experiencing a steady trickle of people from the Sundarbans. This may become a major social problem of West Bengal in the days to come. The Sundarbans cover around 2.05 million hectares of area out of which the major portion lies within Bangladesh. The Indian portion falling within the districts of 24-Parganas (South) and 24-Parganas (North), West Bengal comprises 0.79 million hectares. This largest delta in the world consists, in its Indian portion, of 102 low lying swampy islands formed by the principal tributaries of the Ganges, their numerous water channels and backwater creeks from the Bay of Bengal. The Indian Sundarbans are spread over 19 blocks from the two 24-Parganas. Out of the above mentioned 102 islands, 54 are inhabited. But successive governments in India have allowed more than 40 lakh people to settle in 54 islands while the land available for cultivation is only 7,41,944 acres, mostly mono-crop areas, as the land suffers from salinity due to proximity to the sea.

Not much attempt has been made to make the land fit for multi-crop cultivation and a second crop has been possible in only about 10-15 per cent of the cultivable area.<sup>9</sup> But the most alarming aspect is the fact that migrants are being allowed to set up their habitations quite close to the Bay of Bengal areas which are completely at the mercy of nature. The Ghoramara island is situated in such a location. An inevitable result has been destruction of pristine forests, particularly mangroves, which act as the first solid buffer against severe cyclonic storms from the Bay of Bengal. It is noteworthy in this connection that cyclonic storms in the city of Kolkata are gradually gaining in intensity.

Moreover destruction of mangrove forest either for setting up of squatters' colonies or for prawn farming leads to continuous erosion of land thus facilitating the process of churning out hordes of 'environmental refugees'. Population analyses reveal that the villages in the core areas of the Sundarbans have greater area sizes, greater human numbers but lower densities.<sup>10</sup> It means that large areas are being allowed to be gobbled up for setting up a single village resulting in more destruction of forests. This is a continuous process and is going on for decades. In 1895 the Sundarbans had 20,000 square kilometres of forest cover.<sup>11</sup> But in 1947 this had dwindled to 10,000 square kilometres of which only 4264 square kilometres devolved to West Bengal.<sup>12</sup> Time has already passed for ringing the alarm-bell. The danger is quite close at hand. Surface-level temperatures of the seas surrounding the Indian subcontinent are expected to rise by about 1.5 to 2 degree Celsius by the middle of this century and by about 2.5 to 3.5 degree Celsius at the end of it.<sup>13</sup> This is quite a staggering figure. But the rate of rise is much more on the Sundarbans' shore.

Various studies are going on in regard to the rise in sea levels and its temperatures. Some have predicted even grimmer pictures. Mean-while there has been more than 234 per cent increase of

population in the Sundarbans. This cannot be possible unless large-scale immigrations from Bangladesh and other areas of India have been allowed. It has been estimated that the total population of the Sundarbans may reach the frightening level of five million by 2020.14 Governments in the State and at the Centre have tried some cosmetic measures only. In 1973 the Government of India declared 2585 sq km of forests in the delta as a tiger reserve. Then again 9360 sq km of the Sundarbans area was declared a bio-sphere reserve in 1989. But as later developments prove, these steps are hopelessly inadequate to address the not-too-distant environmental catastrophe.

### **West Bengal: West Bengal polls: Sundarbans' unfulfilled electoral promises**

<http://www.hindustantimes.com/assembly-elections/west-bengal-polls-sundarbans-unfulfilled-electoral-promises/story-UzimyxRyozi9nb8fevJmtM.html>

"Pijush Mondol still recalls the day his father was killed by a tiger while they were catching crabs at a creek inside the Sunderban Tiger Reserve. "It was in October last year. I was just two feet away from my father, looking the other way, when the beast emerged from the dense foliage and pounced on him, he says. But what was he doing in the tiger reserve? Mondol blames it on the 2009 Cyclone Aila, which changed the landscape of the region and laid waste to everything his family owned. "We were simple farmers before it came. We had no option but to take to the forest for our livelihood, the 28-year-old says. Mondol is just one of the many residents of the Sunderbans who is staring at an uncertain future because of the cyclone. The Sunderbans – the world's largest delta – is spread across India and Bangladesh. Of the 102 islands here, 52 are inhabited by 4.5 million people while the rest fall in tiger territory. "Aila changed the face of the Sunderbans – from geography to socio-economic conditions to culture and politics.

The storm damaged the embankments and saline water gushed into the villages, leaving the farmlands barren, says Subhash Acharya, former joint director of the Sunderban Development Board. Almost seven years have passed since the cyclone struck in May 2009, but all the problems plaguing the area – poverty, unemployment, falling agricultural yield, rising man-animal conflicts and the threat of climate change – seem to be here to stay. It is with indignation that villagers recount how chief minister Mamata Banerjee had promised to rebuild the embankments – which guard the inland ecology and human habitations at the islands – before coming to power. "Thousands of villagers live in fear here. Sunderbans is a sitting duck – one cyclone and everything gets washed away, says Sasadhara Mridha, who manages the jetty at one of the islands.

In the Sunderbans, both life and politics revolve around these embankments. Though the Union government had allocated around Rs 5,000 crore for building them, less than 20% of them have been strengthened till now. "The government couldn't acquire land to rebuild the embankments,

says a Gosaba villager. Others allege that corruption has marred even the little work that has been carried out on the embankments. It is an issue that Revolutionary Socialist Party, a Left Front constituent and Trinamool's main rival on these islands, plans to grab in elections. The villagers, however, concede that the Mamata government has introduced a slew of development projects in the delta, including the provision of rice at Rs 2 per kg, financial help for schoolgirls and concretised roads. But will this be enough for the upcoming polls?

### **India's West Bengal govt mulls ecotourism, fisheries village at Nayachar**

<http://www.thestatesman.com/news/bengal/bengal-mulls-eco-tourism-fisheries-village-at-navachar/111925.html>

"The West Bengal government was considering several projects, including a fisheries village, eco-tourism hub and a solar plant for Nayachar, an island on the Hooghly river in East Midnapore district, Chief Minister Mamata Banerjee said on Monday. The 64 square km island came into focus during the last years of the erstwhile Left Front government, which had sought to set up a petroleum, chemicals and petrochemicals investment region there, after a planned chemical hub project faced problems due to protests by peasants led by the then opposition Trinamool Congress. The Nayachar proposal too fell through, due to opposition from the Trinamool, which claimed the project would create environmental hazards. Trinamool chief Mamata Banerjee had instead mooted setting up of an eco-park. But after the Mamata Banerjee government came to power in 2011, its plans for an eco-tourism hub in Nayachar hit a roadblock with the union environment and forests ministry seeking certain clarifications from the state government as a thermal power plant was also proposed along with the eco-tourism project. On Monday, Banerjee went around Nayachar with a group of industrialists trying to figure out the island's suitability for eco-tourism or other similar projects. Later, addressing a rally at Nandigram in East Midnapore, Banerjee said her government was planning to promote an eco-tourism project on the island. ""We will see what can be done at Nayachar. We are working on several ideas like a fisheries village, an eco-tourism project and a solar plant. We will discuss and take a decision,"" she said. Banerjee, however, firmly ruled out construction of a chemical hub. ""We won't allow any chemical hub there.""

### **West Bengal to get India's first community reserve to protect Ganges River Dolphins**

<http://www.pc-tablet.co.in/2015/10/10/15756/west-bengal-indias-community-reserve-protect-ganges-river-dolphins/>

"West Bengal will be soon boasting the India's first community reserve to protect the endangered dolphins. The dolphin reserve will come up at Hoogly, a 500 km long stretch of the Ganges. West Bengal has initiated this move to protect the endangered Gangetic River Dolphins. The decision to this effect was taken by the State Wildlife Board. The State Chief Wildlife Warden, Azam Zaidi said that a community reserve is proposed between Malda and the

Sunderbans in the Hoogly River and a committee has been formed to examine how best this can be achieved. All stakeholders will be taken on board in this venture, and a framework will be ready within a year. The WWF (World Wide Fund) reports that the Ganges River Dolphin or Susu is found primarily in the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of India, Nepal and Bangladesh. Declared as National Aquatic Animal in 2010, Ganges River Dolphin has been hunted almost to extinction and today only about 2,000 remains. The Ganges River Dolphin is often termed as the Tiger of The Ganges, it is an indicator animal and has the same importance as the tiger in a forest ecosystem. The Forest Department is also conducting a census to estimate the population of the Dolphins in the Ganges and the Brahmaputra river system. Main causes of the decimation of the Dolphin population include indiscriminate killing, fragmentation of habitat due to unbridled human activities that include construction of barrages, and dams. Pollution is also a major cause of large scale death of the Dolphin population. The river also is a sole source of income for hundreds of fisherman, and they have lived for hundreds of years. The forest officials were aware of this fact and were quick to reassure that every measure will be taken to protect these fishermen and their livelihood.