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Assam: Fisheries require ₹3997 crore for self dependency

<https://www.guwahatipius.com/exclusive-news/assam-fisheries-require-rs3997-crore-for-self-dependency>

"The Fishery Department of the Assam Government mostly depends on fish coming from different states and countries. The fish prices are not regulated as there is no proper policy in the department. But the department claims it can be self-sustained or dependent by 2026 if it receives an estimated ₹3997 crore from various funding agencies. A senior official of the Fishery Department talking to G Plus on condition of anonymity said that there are various challenges to being self-sufficient in fish production.

“To be self-sufficient by 2026, the department requires ₹3997 crore according to an estimation made during the Chintan Shivir held in Kaziranga recently,” said the official, adding that at present, there are various challenges the department is facing to be self-dependent. By 2026, the department targets to be self-sufficient in fish production, for which all infrastructures will be, strengthened. The department aims at the utilisation of resources in an effective and sustainable manner, said the official.

There are many challenges that the department is facing at present that includes the non-availability of quality fish seed, poor hatchery management, less fish seed production, shortage of quality fish seed, etc. The official mentioned that the under-utilisation of water is also a cause of concern. Periodic natural calamities and acid soil and water conditions are also the challenges the Fishery Department is facing, the official said. Regarding modern technology adoption, modern aquaculture technologies like cage culture, RAS, Pen, biofloc etc are yet to penetrate the fish sector in Assam.

The state also lacks proper live fish transportation and cold storage facilities. Looking at the challenges the department prepared an action plan for which ₹3997 crore is required for the development of the fisheries in the state. To increase fish seed production, fish seed hatcheries and seed multiplication centres need to be developed. Quality brood banks also need to be developed, and for this, the Fishery Department requires ₹72 crore. ₹100 crore is required by the department for the adoption of modern technologies. Another ₹125 crore is required for enhancing fish feed production which includes subsidy, capital availability to entrepreneurs for feed mills, and making raw materials available for all.

An estimated cost of ₹200 crore is required for post-harvest management, like the establishment of a live fish carrier system, storage, processing and value addition. Finally, an estimated ₹3500 crore is required for optimum utilisation of the availability of water resources. It needs to be

mentioned that in the last five years the Fishery Department was successful in some ventures outgoing fish increased by 145 per cent, fish seed production increased by 165 per cent, per capita consumption increased by 23 per cent and fish production increased by 36 per cent. Despite the achievements, the department is still not self-dependent and a huge amount of fish, and fish feed is imported from other states and countries.

The Fishery Department in Assam does not have any proper policy to check fish prices, and incidents of fish smuggling from other states and countries have increased in the state. The prices of fish vary from market to market in Guwahati and there is no regulation across Assam as well. It needs to be mentioned that Assam produced 3.93 lakh MT of fish in 2020-21 while the fish production in 2021-22 is around 4.32 lakh MT. Yet, Assam has to import 12-15 MT of fish every day from other states to meet its daily fish requirement. Of all the fish that is imported, some are brought legally and some are smuggled, creating a price difference in the markets.

The Departmentally Related Standing Committee (DRSC) of the Assam Legislative Assembly submitted its report on the smuggling of fish in April 2022, but till now the policy by the Fishery Department has not been formulated. So if the state has to become self-dependent on fish production by 2026, ₹3997 crore needs to be invested. The department is seeking externally-aided projects and investments from Pradhan Mantri Matsya Sampada Yojana and Rural Infrastructural Development Fund."

Assam: Local fish rearing as a livelihood option

<https://www.sentinelassam.com/editorial/local-fish-rearing-as-a-livelihood-option-613926>

"Assam has abundant water bodies ideal for fish production, and it is a paradox that the state still procures 78 metric tonnes of fish daily from other states to meet its demand. Initiatives by the government have led to a significant rise in local production but the state has the potential not just to become self-sufficient in fish production but also to become a major supplier.

The Brahmaputra and Barak River systems with their tributaries and distributaries, 447 registered and 1625 unregistered beels and about 5.47 lakh ponds and numerous other water bodies constitute the vast fishery potential of the state. The state produced 4.17 lakh tonnes of fish in 2021-22, up from 3.93 lakh tonnes in 2020-21 and 3.07 lakh tonnes in 2016-17 which has helped bridge the wide gap between demand and supply. The challenge is to achieve a quantum jump in production aiming for an exportable surplus.

Besides, the local demand is also rising with an increase in per capita consumption fuelled by an increase in household income. In Assam, the per capita consumption of fish has increased to

11.72 kg/per year but it is way below Tripura with the highest per capita consumption of 29.29 kg/per year followed by Kerala with 19.41 kg, Manipur with 14.1 kg and Odisha at 13.79 kg. If the consumption in the state touches that of Tripura, the spike in demand and the local production is not increased proportionately, the success story of increasing local production and reducing procurement from outside will soon be forgotten. Ironically, per capita consumption in Andhra Pradesh, which accounts for the highest fish production of over 40 lakh tonnes among all states, is only 8.07 kg.

The southern state is a classic example of how the potential of fisheries can be harnessed to script a marketing success story and generate huge livelihood opportunities and revenue for the state. While supplies from Andhra Pradesh, Bihar, West Bengal and Uttar Pradesh to Assam have significantly declined with an increase in local production, the illegal import of fish from Myanmar is posing a threat to the commercial interest of local fish farmers which needs to be curbed before it is too late. Such illegal and unregulated supplies also pose the threat of invasive fish species posing an extinction threat to small indigenous fish species of Assam and calls for urgent action by the State government and Fisheries Department.

The Food and Agriculture Organization of the United Nation, in its 'The State of World Fisheries and Aquaculture 2022 Towards Blue Transformation' report highlights that with 1.80 million tonnes India accounts for the largest share of 16% of total inland water capture fisheries production followed by China (13%) and Bangladesh (11%). It attributes China falling behind India and not being the top producer in inland water catches first time since 1980 to a 10-year fishing ban in the waters of Yangtze River for conservation of living aquatic resources.

The FAO report states that the underlying rationale for the fishing ban by China is that ""improvements in and expansion of inland aquaculture and culture-based fisheries can meet the increased demand for aquatic food arising from the reduction in catches from inland capture fisheries."" In Assam, the scheme 'Breeding Unit for Locally Important Fishes' funded by the National Fisheries Development Board (NFDB) is a key initiative to propagate and culture the local fish species which are in high demand within the state. According to NFDB, of the 838 freshwater fish species in India, 450 are categorized under small indigenous species.

Under the scheme, six breeding units of locally important fishes were set up in Nagaon, Dibrugarh, Kamrup, Sonitpur and Udalguri for an expenditure of Rs 32 lakh in 2020-21 and five more units in Udalguri, Nalbari, Kamrup and Dhemaji with a total expenditure of Rs 35 lakh. Considering the spread and number of the beels and water bodies sustaining indigenous fish species and also the extinction threats to these wetlands and the fish species, there is scope and need for scaling up the intervention to cover more districts. The State Government can explore

providing funds from its sources if the NDFB fund support is not adequate to increase the number of such breeding units under the scheme.

The Central and the state government extending more funding support for research on local fish species, their preservation and scientific propagation will go a long way in protecting the interest of local fish farmers and meeting projected demand for fish for local consumption as well as achieving the future goals of supplying fish to other states and exporting to global destinations. Ensuring adequate quantities of quality fish seeds is a special requirement for augmenting local production and making pisciculture more attractive as a livelihood option. Boosting local production with scientific rearing practices can motivate lakhs of youth in Assam to realize the vast potential of abundant fisheries around them.

Assam: Lack of fisheries policy fails to regulate prices, check smuggling

<https://guwahatiplus.com/exclusive-news/lack-of-fishery-policy-in-assam-fails-to-regulate-prices-check-smuggling>

"Assam produced 3.93 lakh MT of fish in 2020-21 while the fish production in 2021-22 is around 4.32 lakh MT. Yet, the state has to import 12-1countries to meet its daily fish requirement. The Fishery Department in Assam does not have any proper policy to check fish prices, and incidents of fish smuggling from other states and covary from market to market in Guwahati and there is no regulation across Assam as well.

A senior official of the Fishery Department talking to G Plus on the condition of anonymity said, "There is no policy at present to check fish prices in Assam." The official further added that a committee was formed recently headed by the Director of Fisheries to formulate a policy which will help regulate fish prices in the market and also stop fish smuggling.

In April 2022, The Departmentally Related Standing Committee (DRSC) of the Assam Legislative Assembly, in its 24th report on the State Fisheries Department, recommended that the department should constitute a Task Force to stop illegal fish from being brought into the State from Bangladesh, especially in districts bordering Bangladesh, with support from the district administration.

A source in the Fishery Department said that Hilsa is imported from West Bengal, Tripura or bordering areas of Barak Valley. "The price of Hilsa is high when brought from West Bengal because it comes legally, whereas when it is brought from Tripura or Barak Valley, the price is low as it enters India illegally from Bangladesh," said the official adding that once fish from both areas reaches any market it is impossible to differentiate whether it has been brought legally or

illegally.

But the quality of the fish varies, which consumers mostly do not understand, said the official. “There is no mechanism to identify the difference,” said the official. The fish brought illegally is sold at a lower price whereas the fish brought legally is sold at a higher price; therefore there is a difference in the price of the fish in many markets. On enquiring why the consignment is not caught while getting transported illegally, the official explained that the fishery department does not check the consignment.

“The Agriculture Marketing Board checks the consignment and the agriculture tax is paid by the smugglers while transporting,” said the source, adding that there is a lack of coordination between the fishery department and the agriculture marketing board. The policy which the committee is formulating will take care of these irregularities so that the smuggling of fish can be checked, said the source.

The Fisheries Department, while considering the importance of the issue, instructed the District Fishery Development Officers of all districts, especially the bordering districts of Assam and Bangladesh like Cachar, Hailakandi, Karimganj and Dhubri to examine the matter related to fish coming illegally from Bangladesh and to take necessary initiatives to stop such illegal practices in coordination with the respective district administration, said the source but it seems it has not helped much.

Most of the districts reported that illegal fish from Bangladesh could not be detected but the Cachar district has reported action like seizing of such illegal fish in some markets, said the source. Few other districts intimated that periodic visits to the markets and trading points with customs officials would be helpful to keep a record and stop such illegal practices. Talking about local fish, even there the price is not regulated as the fish comes to Guwahati’s wholesale markets from many districts.

The transportation cost from every district is different and even the fishermen sell fish at different prices. Therefore, it is difficult to fix the price of the fish, said another official of the Fishery Department. The policy which is being drafted will take care of all these issues and check the fish price, said the official. It needs to be mentioned that Assam produced 3.93 lakh MT fish in 2020-21 while the fish production in 2021-22 is around 4.32 lakh MT.

Yet, Assam has to import 12-15 MT of fish every day from other States to meet its daily fish requirement. Of all the fish imported, some are brought legally and some are smuggled, creating a price difference in the markets. The Departmentally Related Standing Committee (DRSC) of

the Assam Legislative Assembly submitted its report on the smuggling of fish in April 2022 but till now the policy by the fishery department has not been formulated."

Assam: How untreated legacy waste pollutes the sensitive ecosystem of Deepor Beel

<https://www.eastmojo.com/assam/2022/08/26/untreated-legacy-waste-is-polluting-the-sensitive-wetland-ecosystem-of-deepor-beel/>

"Prabhat and Prabin Sharma own a cattle farm of 85 buffaloes in Paschim Boragaon village near the Deepor Beel, the only Ramsar site in Assam. This is their native village and the family has been rearing buffaloes for generations. The buffaloes graze on grounds adjacent to the wetland, feeding on the abundant greens. Recently, 14 of buffaloes developed severe health issues after grazing here; four of them died soon after.

This is suspected to be because of pollution in the wetland that is adjacent to the Guwahati Municipal Corporation's (GMC) waste dump. Farmers, residents, scientists, and environmentalists allege that pollution from the waste dump is harming residents, livestock, and aquatic fauna. The rivers flowing in the vicinity – Bharalu, Bahini, and Basistha as well as the Deepor Beel itself – all have become polluted over the years. The GMC dumping site, set up in 2006, was shifted to another location in 2021, about half a kilometre from the old site, although huge amounts of legacy waste still remain.

"Our cattle are dependent on the grazing land, and we do not use any other commercially-available feed. Healthy grazing is reciprocated with good milk production. Recently a herd of 14 cattle was grazing on its usual ground, in the vicinity of the old dumping ground, when their bellies suddenly got swollen," said Prabhat Sharma. A veterinarian was called, but four animals died during treatment – two milch cows, a bull, and a calf. The doctor gave injections to the other 10 buffaloes and treated them to release the gas from their body. The post-mortem report is awaited till the time of filing this report.

The Sharmas immediately relocated their cattle shed to another location about four km away from their native land. "Transporting such a huge herd is not an easy task, but after the relocation, the animals are doing well. It is temporary now, but we must think of permanent relocation if the government continues with its lackadaisical attitude in treating the legacy waste," said Prabhat Sharma.

Even the native fisher community, comprising over 800 families, for whom the wetland waters have been their source of livelihood for generations, now fear being on water for long hours. "Half our lives have gone by in the waters. We fish on the wetland and used to have most of our meals right on its bank, cooking with the same water. Now, spending a few extended

hours on that water causes itching and rashes on our hands and feet. This happens with all fishermen. Now we do not drink that water. Although we still sell the fish from the wetland, we do not consume those regularly, like in previous years,” said Guluk Das, president of the fishermen’s cooperative society.

Physician Homen Kumar Das, who has a clinic in the area said, “The fishermen come to me with skin problems on limbs. For now, the ailments can be cured with certain ointments. But these are clear indications of the impending health hazards.”

In the Deepor Beel, which once boasted of high quality freshwater fish, breeding has gone down. For several years now, the fishing community releases fish seedlings for rearing which are then sold. They have opined that once out of the water, the fishes are usually dead within five minutes, and produce a foul scent after a few hours. “Even refrigerating them won’t work,” Das lamented.

The Assam government allocated about 30.10 hectares of land adjacent to the wetland to the GMC in 2006. Henry David Teron, vice president of the Deepor Beel Suraksha Mancha, an association of local citizens for the protection and preservation of the Ramsar site and its adjacent areas, said, “The site that is now a garbage dump was once a lush grassland of Kans grass and elephant grass. We have seen large herds of pachyderms coming there to breed from the nearby forests,” Teron added. “The tribal community cultivated Bao dhan (Kekowa genotype; deep water brown rice) near the water body; it was in abundance. The wetland is a haven for both native and migratory birds.” “We have seen the degradation of this fertile land and water and the gradual decline of several species of flora and fauna in the past 20 years,” he said. Activist Rohit Chowdhury filed a complaint with the National Green Tribunal (NGT) in 2020 against damage to Deepor Beel wetland by actions in violation of Municipal Solid Waste (Management and Handling) Rules, 2000 (now MSW Rules, 2016) and Wetland (Conservation and Management) Rules, 2010 (now Wetland Rules, 2017).

The NGT in its final declaration after the hearings observed, on April 2022, “It is seen that solid waste is not being scientifically managed nor legacy waste has been remediated. Capacity of proposed integrated waste management plant has not been specified. There is also no water quality monitoring programme of the wetland. In spite of monitoring by the Tribunal for a long period, no satisfactory progress has taken place so far. Estimated waste generation is said to be 600 TPD (tonnes per day). There is, thus, need to work in a mission mode to remediate the legacy waste, scientifically handle current waste, speedily set up plant of adequate capacity, regular monitoring of the water quality of the wetland and other measures which stand identified.”

GMC was dumping the metropolitan city's daily garbage collection on this site from 2006 to June 2021. The site was closed following an order of the NGT in 2019 against a previous case filed by Chowdhury in 2014 seeking an immediate end to garbage dumping and disposal of sewage at the Boragaon landfill. The green tribunal, ordered in May 2019 that the dumping site be shifted from Boragaon by June 2019.

However, the GMC stopped the transfer of solid waste to the old site at Paschim Boragaon only from June 28, 2021, and started transferring it to Chandrapur. At present, the solid waste is transferred to another place called Belortol in Paschim Boragaon village from August 10, 2021. The present site is about half a kilometre away from the old one, and also in close proximity to Deepor Beel. The state of Assam, in an affidavit filed before the NGT in November 2021 stated, "the treatment of legacy waste started at West Boragaon w.e.f. January 2021. It is estimated that there is approximately 15 lakh MT of legacy waste accumulated at West Boragaon dump site till now."

In mid-May, 2022, a fire erupted on the waste that continued for over a week despite the monsoon spells. Although the municipality denied it, locals and conservationist Promod Kalita, who is also a resident of the area and has been vigorously fighting for the cause, have alleged that the GMC ignited the fire as a cheap means of disposal of lakhs of metric tonnes of garbage, releasing harmful smoke. "Prayers and protests, and even the NGT's orders have been overlooked by the Corporation. The Assam government talks of several developmental and beautification activities to attract tourists to Deepor Beel but has failed to do the basics to protect such an important water body," said Suchil Teron, President of the Deepor Beel Suraksha Mancha."

Assam: Govt to grant aid to fish farmers after industry incurs loss of Rs 1,000 cr

<https://www.aninews.in/news/national/general-news/assam-govt-to-grant-aid-to-fish-farmers-after-industry-incurs-loss-of-rs-1000-cr20220711133944/>

"The Fisheries Minister of Assam, Parimal Suklabaidya, said on Monday that the fish farmers who incurred massive losses in the devastating Assam floods will be granted aid by the state government in order to revitalise the state's fish industry.

Suklabaidya told ANI that about 80 per cent of fish farmers suffered a significant loss worth approximately Rs 1,000 crores in the disastrous floods, leading to the fish sector witnessing a huge setback. "Nearly 80 per cent of the fish farmers of the state have faced a huge loss and the value of the loss is estimated to be over Rs 1,000 crore.

We have collected the data from different districts of the state. By July 15, we will be able to get the exact figure. But the preliminary report shows that nearly 80 per cent of fish farmers of the state have been affected," Parimal Suklabaidya said. In an effort to resuscitate the fish industry, he added that the Assam government intended to supply aid and standard fish seeds to the afflicted fish farmers. The Minister added that Assam is close to reaching self-sufficiency on the fish production front.

"Schemes like Pradhan Mantri Matsya Sampada Yojana (PMMSY), Chief Minister Samagra Gramya Unnayan Yojana (CMSGUY), Ghare Ghare Pukhuri Ghare Ghare Maach are going on in full swing across the state and the gap between total demand and production has now been decreasing. We have now achieved 96 per cent of total demand," Suklabaidya said. According to the Assam State Disaster Management Authority (ASDMA), nearly 8.9 million people in the state have been affected by the flood and landslides that struck Assam this year.

The disasters have claimed 192 lives in the state so far. Around 2.40 lakh hectares of cropland in 34 districts have been affected by the flood. Nearly 5.39 lakh people in 12 districts are still affected by the deluge. 38751 people have still lodged in 114 relief camps in eight districts.

Recently, two Inter-Ministerial Central Teams visited the affected areas to assess the damage. The people of the state are also worried about developing post-flood complications including diseases. As the flood water starts receding, there is an increased risk of water-borne diseases through direct contact with polluted waters."

Assam: Wholesale fish market at Lokhra becomes operational

<https://theshillongtimes.com/2022/07/07/wholesale-fish-market-at-lokhra-becomes-operational/>

"A wholesale fish market set up jointly by FISHFED, Assam and Saraighat Agricultural Society here became operational from Thursday. Assam fisheries minister Parimal Suklabaidya inaugurated the Saraighat Wholesale Fish Market at Lokhra on Thursday morning.

The market will facilitate direct selling of different varieties of fish by fish farmers across retail

outlets in the city. A live fish tank and a weighing machine was also inaugurated by the minister on the market campus.

Speaking on the occasion, Suklabaidya thanked Prime Minister Narendra Modi for the flagship programme 'Pradhan Mantri Matsya Sampada Yojana' which has immensely benefitted fish farmers across the country, including Assam.

"Assam has witnessed a sizeable increase in fish production over the past six years," the minister said. He further expressed his ambitious plan for full-scale introduction of local fish in all the markets to push Assam towards becoming a healthy fish consuming state. He also pitched in the importance of adoption of scientific and hygienic approaches in fish farming."

Assam: The water may dry, but the tears won't

<https://www.outlookindia.com/national/assam-floods-2022-the-water-may-dry-but-the-tears-won-t-news-206811>

"Since June 22, 22-year-old Rukeya Khatun and her family members have been living alongside a railway track in Tokoudubi village of Kampur sub-division in Nagaon district. A makeshift tarpaulin hut built by Rukeya's husband Ibrahim Ali has become their home, located a few metres away from the original house situated below the tracks. On June 16, the waters of the Kopili River nearby started rising and had reached the tin roof of Rukeya's house. It was her first experience of the flood after marriage. On June 24, when Rukeya was cooking a meal for the family, her two-and-a-half-year-old son Abdul Raihan slipped and fell into the water below the tracks. Some villagers saw the boy getting washed away and managed to pull him out, rushing him to a health relief camp where the doctors tried to resuscitate him, but it was too late.

"It was just a matter of a few seconds. We were being extra careful since we have been living alongside the railway tracks. We didn't see how he crawled out of the hut and slipped into the water", says Sumeria Khatun, Rukeya's sister. Rukeya didn't want to talk about the tragedy.

Mukesh Ali, 50, in the nearby Ahomgaon, shows a passport-size photo of Abdul Sharif, his son. On the rainy morning of May 20, the 22-year-old had gone to the wetland in the backyard to catch fish. He never returned. "We didn't know my son had gone out fishing, till a little boy from the neighbourhood came running to our house and said he had seen Sharif falling into the water. When we ran to the wetland, we saw his slippers kept on the side and started searching for him using fish nets. Slowly his mobile phone, some currency and his vest were caught in the net. After that, we informed the NDRF. They came with boats and recovered the body from the same spot," Mukesh narrates.

Catching fish during the rains and selling it to the local market of Kampur is normal practice, says Ali. Sharif had been catching fish in the wetland for many years now. According to Ali, Sharif must have misjudged the high current and slipped into a hole. Ali's wife, meanwhile, was seen searching for more photos of Sharif inside a suitcase that the family uses to keep documents like identity cards, land documents, voter cards, etc. Sharif was the eldest of three sons. Since May, at least 10 people lost lives in Kampur after the devastating flood from the Kopili, Nishari and Barpani rivers. As of Saturday (July 2), flood water inundated a total of 238 villages in five revenue circles of Kampur— Kaliabor, Raha, Samaguri and Rupahi in the Nagaon district. According to government data, around 3,79, 000 people are highly affected by floods since pre-monsoon rains hit the state.

Mayong is one of the five revenue circles marooned by floods in Morigaon district, located on the banks of The Brahmaputra, about 50 km away from Guwahati. Flood water ravaged at least 103 villages in Mayong, affecting around 800 people till Saturday. In Boramari village at Bhuragaon revenue circle, Shamima Akhtara, 4, went to play in the backyard of her house with friends like she normally would. Her mother was inside the house, while her father Kasem Ali had gone to their paddy field to access the level of flood water. While playing Shamima, slipped into the flood water, and the high current pushed her to a nearby pond. "Someone in the village, who was passing through our house, informed us that the body of a child was found in the pond. I ran to the location and saw that it was my own daughter. I recovered her body and took it to the Morigaon civil hospital, where she was declared dead," recalls Ali.

Morigaon district is one of the worst affected areas by the floods. Every year, the river Brahmaputra and its tributaries take away hectares of land forcing thousands to live on embankments and on the side of National Highway 37. As of Saturday, waters from the Kopili, Kolong and Uiam rivers have submerged a total of 310 villages that collectively have a population of 1,73,849. Among them, 38,029 are children.

In the Barpeta district, the five rivers—Brahmaputra, Beki, Aai, Nakhanda, Marachowlkhowa and Bhelengi—have been in a calamitous mood for the past month. A total of 317 villages in the revenue circles of Barpeta, Baghbar, Kalgachia, Chenga and Sarthebari, have been inundated by massive floods, affecting over 2.2 lakh people. In Sundaridiya village, located in another district of Barpeta, 13-year-old Jyotirmoy Das had stayed at home as schools were closed due to the massive flooding. The meritorious student would take time off his studies to help his mother with household chores. On June 24, a Class 8 student of R.T. Model School went outside the house in the morning. When he did not return till the evening, his parents started searching for him. When they couldn't find him, they called up the NDRF. Jyotirmoy's body was found floating a few metres away from the house.

Gajibur Ali's 12-year-old son Mooran went missing on June 17. His village Rampur under Kalgachia revenue circle in the district was inundated by flood water from the Beki River, a tributary of Brahmaputra. According to locals, Ali had gone out of the house to check the level of flood water after the incessant rain had submerged many houses in the village.

“When he did not return till the evening, we started searching for him. Dividing ourselves into groups, we started announcing his disappearance on microphones in the nearby areas. The next morning, Mooran's body was found near the river bank, stuck in the mud. The heavy rain has brought disaster upon us. We have been very careful with our children since the incident,” says Matiur Ali, a neighbour.

Situated 16 km away from the district headquarters of Kalgachia in Barpeta district, is the village of Bankabhanga which gets inundated in every flood. Like many locals, Abdul Maleque's house was half-submerged in the flood water. On June 21, Maleque and his wife Mamtaz Begum had kept their one-and-a-half-year-old son Shakibul Hassan on a bed for around 20 minutes as the water level inside the house had stayed at 2ft. They had gone to the next room, a makeshift kitchen, to prepare khichdi for lunch. When they returned, the child was nowhere to be found.

After searching for quite some time in the water inside and in the areas around the house, Hassan's body was found in the front yard. “Almost all the houses in our village were under water. While many locals took shelter in relief camps, others chose to stay in their own houses to keep an eye on their belongings. Also, it is difficult for people with children to stay at relief camps as they need to share a room with lots of people. The children get annoyed and need to be fed frequently. Maleque and his family had been living in the flooded house for the past one week before they lost their child,” says Abdul Rahim, a neighbour.

The above stories are a few of the thousands of tragedies that have befallen Assam which continues to reel under flood. Out of the 35 districts, 27 districts are still hit by flood leaving a population of 22,17,778 still at risk. At the time of publishing this report online, a total of 153 people had lost their lives in the Assam floods.

Assam: River Reflections: Impermanence, erosion, migration on the Brahmaputra

https://www.business-standard.com/article/current-affairs/river-reflections-impermanence-erosion-migration-on-the-brahmaputra-122062700378_1.html

"The Brahmaputra, one of the most sediment-laden rivers in the world, is home to a geographical phenomenon--a unique network of an estimated 2,300-plus islands that result from

the vast quantities of sand, silt and rock that the river carries along its course, down from the mountains and onto the plain.

The silt and sand accumulate along its flow to form temporary islands. The rocks that tumble along in its course, and the sediment the river carries, give these islands body. Most of these islands are impermanent--literally shifting sands, except for a few very large ones. The biggest of them, Majuli, is the world's largest river island. Even after it has shrunk to a third of its original size, thanks to erosion, it is still vast, spreading over 400 sq km--nearly as large as the capital of Rajasthan, Jaipur. Once you are there, you do not realise that you are on an island in the midst of a mighty river.

These temporary islands, locally known as chars or saporis, are in a constant state of flux. The river builds them, and then washes parts of them away--sometimes even an entire small island or shoal disappears--during the periodic floods. The floodwaters carry the silt away only to recreate the islands elsewhere, in an ongoing cycle of land building and destruction.

Since most of these islands are impermanent, their ownership is unclear. They are also extremely fertile--thus, for generations, local communities have settled on these islands as they take shape, living in homes of bamboo and mud, establishing homesteads, raising families and eking out a living through farming and fishing.

When the floods come, people fend for themselves in relief camps, or in temporary shelters along the embankments criss-crossing the flood plains, and even on boats. Once the floods recede, they return to find, at times, that 'their' home island has shifted downstream, sometimes as much as a few kilometres, and that they have to start all over again. This process is cyclical; sometimes they have to go through this process a few times every year, depending on the number of floods and their ferocity. Stress is a constant companion.

These islands are home to nearly a tenth of Assam's population of 35 million, and to a diverse range of communities, including some who live in a national park. Also resident on these chars are many species of wildlife including elephant herds, wild buffalo and feral horses as well as migratory and local birds, while the endangered river dolphins are occasionally sighted in the river and its tributaries. This space is a universe apart. Buffaloes wallow or swim in the shallows; a fisherman steers his dugout towards our boat and offers us a glowing golden carp--his catch of the day, a whopping one-and-a-half kilos, for Rs 800; an unfinished wooden bridge, with pillars but no top, stands stark against the skyline, silent and accusing. A country boat sputters a careful course through the spaces between the large pillars.

ON KOBU saporis in Dhemaji district--one of the better known and older islands on the river--a small group of men from different communities gathers in the local primary school to speak with their visitors.

It has taken us over an hour and a half to get here from the nearest ferry point--which is really nothing more than the bank where boats anchor to take on passengers and goods. The one we hire is a noisy country boat about 20 metres long, with an engine that splutters indignantly when it is turned on, sinks into an occasional coma, and as suddenly comes to life--not the most reassuring form of transport to traverse even a small tributary of the mighty, moody Brahmaputra. But there is very limited choice of transport, and this is what we get.

Eknath Sharma, who says he is 40, was born on Kobu saporis. "Earlier, this island was home to some 10,000 people," says Sharma. "Now barely 1,000 persons live here, although those who have their vote registered here come back to cast their ballot during elections."

I do a quick check later, and find that while his numbers are close to official figures (600), locals say based on a survey by the Accredited Social Health Activist (ASHA) of Kobu Saporis, they are not precise. And that is understandable in a space where time moves at a different pace, and local societies are defined by the seasons and by the river that surrounds them. Sharma is an unofficial spokesperson for this disparate group of farmers and teachers, all of them with the weather-beaten faces and hardy constitutions of those who live along and on the river, with its myriad uncertainties.

Precise or not, Sharma's numbers tell a story of Assam's saporis. It is not about the precarious existence of those who live on the shifting sands but of the many who, unable to cope with the stress of losing homes and land and livestock, are leaving in search of jobs elsewhere.

This jells with our observations. Earlier, as we prepared to board the wooden, rough-hewn country boat that brought us to Kobu, we noticed that an entire family has travelled over on the incoming trip. They're moving, with the tin sheets of their dismantled roofs, the wooden beams, their cooking utensils, gas cylinder, and a trunk-load of clothes. It is a visible sign of the exodus that is all too common along this stretch of the river.

"You see this young man?" Suresh Mukti, Kobu's primary school teacher, points to a youngster on the fringe of the crowd surrounding us. "He has just come from Gujarat; he'll be going back in a month or two." The youngster is part of the incessant flow of unskilled seasonal workers making their way to other parts of the country in search of temporary employment. The villagers say that these migrants send money home, which helps to supplement family incomes.

The last census was carried out in 2011. The latest, which was due in 2021, has been postponed indefinitely with Covid-19 as the cited reason. While there are therefore no verifiable data for the number of migrant workers, professionals and students who move out from the North East and spread out across the rest of the country, the most conservative estimates put the annual outflow in the tens of thousands. Large numbers settle, even temporarily, in large and mid-sized metros across the country, and smaller groups gravitate to small towns in, for example, Maharashtra, Rajasthan and Goa. One recent study placed the number of those who have moved out of the region at about one million in 2001-2011 (the decade of the last census), and said that not less than half of them came back from vulnerable, unskilled jobs in the unorganised sector during the pandemic.

""With active participation from respective state governments, there has been mass return of migrants to their native places,"" wrote R. Lesome and R. B. Bhagat in 'Migration in Northeast India: Inflows, Outflows and Reverse Flows during Pandemic'. ""Migrants from the Northeast are not an exception. More than 138 Shramik Special trains transported nearly 188,000 stranded people to various states of the northeast.""

This is not counting those who arranged their own transportation. In all, the study estimates based on newspaper reports, ""the number of migrants returning to the northeast during the period of the lockdown is estimated at 512,000. This constitutes about half of the out-migration from the northeast in 2011. This mass return migration to the northeast was unprecedented. About 390,000 migrants returned to Assam alone--a state beleaguered due to immigration politics.""

The reasons for out-migration are many: the uncertainty of life along the saporis, the diminishing returns from farms and from fishing, the constant stresses attendant on recurring floods that wipe out the fruits of their labour, the uncertain safety and security situation, the lack of adequate educational facilities, marriage, etc., Lesome and Bhagat say in their study. What we know is that this out-migration is ongoing; and that those who leave rarely return, except for short visits to the families they have left behind, or during seasonal holidays such as Dussehra, Puja, Bihu, Christmas and New Year, when in any case employment opportunities are limited.

It is all about erosion,"" says Eknath Sharma. ""We can live with floods, but not this kind of deep, constant erosion. Our island is now a fraction of its former size--the river keeps eating away the edges, it takes away our fields and with it, our livelihoods, because fields and fishing are our main sources of income.""

A group of us walk in the direction of the local dispensary, which was built a few years earlier--and find that we cannot reach it because a stream has flooded and blocked access. We look around for a dugout to help us cross--but the only one available has been taken away by someone else for other work. The river, we are told, has made a sudden incision into the land on the other side, and the waters are now lapping at the doorstep of the clinic. Caught between the flooded stream and the land-grabbing river, the clinic, which still looks spanking new, stands forlorn, unusable, inaccessible not merely by us, but by the patients who need it.

The story of Kobu is repeated elsewhere. In Lakhimpur, Dhemaji, Tinsukia and Dibrugarh, people are leaving their homes of decades, driven away by the eroding power of the rivers. Some move to government-allotted lands, but this is not always a satisfactory solution--one group, for instance, was given land in a hilly area far from the river, where they could neither farm nor fish and thus found themselves without the means to earn a living. Others sell their land for whatever price they can get, and move to the mainland. We have reached out to officials for comment on the land allotted for those whose homes are destroyed by the river, and will update the story when we receive a response.

On our way back from Kobu, we get stuck in the shallows. Twice. Each time, the burly boatman--who nurses the engine along and navigates with his rudder--jumps out to push the boat out of the shallows and back into navigable waters. Helping him is a pilot, who is supposed to know the river, its depths and its current surges, like we know the roads of our native city. He uses a long bamboo pole with a dual purpose: it helps to steer the boat, and is also a tool to plumb the depths and detect the silent shallows lying below the surface. This particular pilot isn't very savvy with the river, and repeatedly gets yelled at by the 'captain' of the little boat.

We get free of the shallows only for the engine to promptly fail. We find ourselves drifting, silent and steady, downstream. We have drifted way past the landing point, but there is no help for it--the current takes us for a ride. We all take turns at firing up the engine. Eventually it catches, spluttering into sudden life.

The boatman uses the window of opportunity to quickly steer us to shore--and, as it turns out, lands us next to a bush alive with large red ants. We manage to escape, and walk a couple of kilometres through the bush to reach the designated landing spot. It is not without attendant risk--leeches proliferate, and large piles of dung mark the path taken by elephants. We hurry to reach our destination before sundown.

One of my companions regales us with the story of how, on an earlier trip, he and his team had got delayed getting to a landing point. It was dark, he said, before their vehicle finally headed out

of the forest--and then they saw their path blocked by a herd of elephants which started moving towards them. He reversed the vehicle slowly, he told us, for about 500 metres with the elephants still ambling forward; finally, he found another motorable path, and dashed away.

Now there are fewer sightings of elephants, he says--and while I am a little relieved at the lessened risk, I'm also concerned about what the thinning of elephant herds portends."

Assam: All is lost, floods leave trail of destruction

<https://www.aljazeera.com/news/2022/6/27/all-is-lost-floods-in-indias-assam-leave-trail-of-destruction>

Sakina Khatoon is among 300 people marooned in a reserve forest for more than a week since the deadly floods ravaged at least 12 villages in Nellie in Morigaon district of India's northeastern state of Assam. With their homes and fields submerged in Dahuti Habi village, 70km (43 miles) away from Assam's main city of Guwahati, the families have no option but to inadvertently risk conflict with wildlife in an elephant corridor in Nellie's Khulahat Forest.

"Yesterday, three of them came very close to the camp," Khatoon told Al Jazeera. "Everyone started shouting and drove them away. But we didn't sleep last night." Khatoon said people were living in perpetual fear of the water level rising and the tuskers that continually stray towards them in the forest.

Millions in Assam have been affected by the floods since heavy pre-monsoon rains first hit the region last month, inundating large parts of the valley. After the initial deluge in May, no one expected the floods to worsen with the arrival of monsoon showers, leading to the breach of 297 embankments in 20 districts by June 19.

Displaced residents recalled seeing this ferocity of the Kopili River, a tributary of the mighty Brahmaputra, in 2004 and 2007. This year, everyone agreed, is the worst. As of Sunday, 2,524 villages in Assam were affected across 27 districts, with more than 200,000 displaced people taking shelter in 564 relief camps across the state, according to Assam's Disaster Management Authority. At last count, the death toll had reached 127. Heavy rainfall aside, the release of water from nearby hydroelectric projects on the Kopili River in Dima Hasao and Karbi Anglong overwhelmed the embankments in districts such as Morigaon and the adjoining Nagaon.

Brahma, circle officer in Raha, a small town in Nagaon, told Al Jazeera they had been warned before the opening of the four sluice gates in Dima Hasao. "But even the weather forecast is uncertain these days," she said. "The weather has been very unpredictable this time."

As soon as the water gushed into her village on June 17, Khatoon, along with her husband, son and two daughters, started preparing to move to higher ground. The family loaded their granary reserves onto wooden boats along with necessary cooking utensils and paddled themselves to safety inside the forest. “We have managed to save only some of the two quintals of paddy from our reserves that went under water,” said Khatoon. “Everything else – our house, cattle and all other belongings – was lost.”

With little provisions available, many in the camp are getting by on one square meal a day. “People are surviving by picking up some labour work but that is also hard to find because of the floods,” Khatoon said. The floods have also caused a huge crisis of drinking water, with people in partially inundated houses and relief camps struggling to find it. In Khulahat Forest camp, residents have taken to digging 2-3 feet deep to find water for drinking and cooking.

Khatoon, who works as an accredited social health activist (ASHA) in Dahuti Habi village, said the drinking water crisis has led to a host of water-borne diseases. “Many people in the camp have contracted diarrhoea, fever and dysentery as well as blisters on their feet,” she said, exhibiting the fungal growth around one of the inmates’ feet.

The floodwater contains lot of faecal bacteria and viruses, so oral faecal diseases like diarrhoea and typhoid apart from skin allergies and infectious diseases will be common,” he said, adding that his hospital had already started preparing to treat immuno-compromised people in the paediatric and geriatric age groups. Ashraful Islam, a former school teacher camping at a vegetable market turned into a relief camp in Nellie, said they were easily looking at another month before they could go home. “The government should have made arrangements for drinking water. The only time we received any aid was from some Congress politicians who distributed a half-litre bottle to each family along with some snacks,” he said, referring to the main opposition party in the state.

Nearly 32km (20 miles) away in the adjoining Nagaon district’s Rupahitoli village, residents were restively fishing in the floodwaters as the Kopili River continued to inundate the interior roads on its path. By noon, Rama Deka joined a line of men lowering their Chinese fishing nets inside the water gushing downstream. When the waters first rushed in four days ago, Deka’s mud house and one acre of paddy fields were inundated, causing a loss of more than 50,000 rupees

“If the water dries down quickly, maybe I can plant mustard,” he hoped. “Otherwise, there will be no farming left to do this year and I will have to go back to doing masonry work.” Deka was unable to catch any fish that he had hoped to cook with the rice and lentils they had received in relief packets. Government figures estimate a total of 91,658 hectares (226,492 acres) of crop area has been damaged by the floods, raising urgent concerns of livelihood in a state where

agriculture employs 53 percent of the workforce and accounts for 75 percent of the state revenue, directly or indirectly.

Experts are of the view that while floods make the valley fertile, a high level of silt deposition damages the land for paddy cultivation. “While you can grow other crops in the flood-affected areas, if lesser land is available then it will definitely have a direct impact on food security,” Ananta Saikia who teaches at Assam Agriculture University in Jorhat, told Al Jazeera.</p>
<p>The land crunch, he added, is further compounded by population pressures and the release of water from hydroelectric power plants in the state and neighbouring countries such as Bhutan...

Assam: Climate change, poor planning: Why Assam’s floods are getting worse

<https://www.downtoearth.org.in/news/natural-disasters/climate-change-poor-planning-why-assam-s-floods-are-getting-worse-83361>

"Four days ago, residents of northern Assam’s Darrang district woke up to stormwater gushing into their homes and blocking their exit from every corner. The district is the point where many tributaries of the Brahmaputra river merge into the main channel from Bhutan in the north.

Nripen Nath, a resident of Basachuba village in the district, recollected flash floods from Brahmaputra had submerged the area around his residence in May following a spell of rain. But the rainfall this month was more intense than anything he had seen before, he said.

It rained for days at a stretch and embankments on both sides of the tributaries were breached, drowning villages on both sides, said Nath, who is in his early 40s. “Even the elevated areas of my home are knee-deep in water. There is no potable water to drink for four-five days since the tubewells and toilets are submerged.” Like Nath, residents of more than 80 villages near the embankments stretching 10-15 kilometres south along tributaries such as Barnodi, Nanoi and Satkola river and the Brahmaputra channel were met with the unexpected floods that had a debilitating effect on their lives and livelihoods.

So far, only the Brahmaputra would overrun, and not its smaller tributaries, they pointed out. This was completely out of the blue, said Nath. “We didn’t get time to make arrangements for our livestock, crops and fisheries.”

Keeping his two cows and three goats in houses on stilts is also not a solution, he said, since it is difficult to feed them and there are fears of disease outbreaks. Nath relies on his animals for meat, apart from the extra income from his fisheries, which fetches him around Rs 1 lakh a year. Due to the flooding, his fish have escaped into the floodwaters.

The current spate of floods in Assam claimed 71 lives and affected nearly 3.2 million people in 32 districts, according to official records. The continued spell of heavy showers offered no respite — the state recording 53.4 mm of rainfall as of June 19, 2022. The cumulative rainfall in the first 12 days of June was 528.5 millimetres of rainfall — an excess of 109 per cent.

Meghalaya, Earth's wettest region, recorded 1,215.5 mm of rainfall this month as of the 19th, resulting in 185 per cent excess rainfall. Roxy Mathew Koll, a climate scientist with the Indian Institute of Tropical Meteorology, said:

A combination of La Nina in the Pacific and a negative Indian Ocean Dipole in the Indian Ocean has strengthened the winds blowing from the southwest to the northeast (southwesterlies) in the Bay of Bengal. These strong monsoon winds in the Bay of Bengal can now carry much more moisture than ever before, in response to global warming," he said.

The volume of atmospheric moisture increases with rising temperature because warmer air holds more moisture and for longer, he explained. "Hence, the large amount of rainfall that we see now might be a climate change impact." These winds dumping rains over Bangladesh and northeast India have been exceptionally strong for a week now, the scientist added.

An embankment that was reconstructed after getting damaged in the floods in May was breached again this time, Nath said. Companies who are awarded contracts to build embankments by the government profit from these back-to-back destructions, he added. A total of 297 embankments have been breached in 20 districts of Assam, with 33 in Darrang alone, according to the Assam State Disaster Management Flood Report of June 19, 2022.

"Only 7 per cent of the districts have updated their disaster management plans (DDMP) until 2020 in Assam, according to our analysis," said Abinash Mohanty, programme lead of the risks and adaptation team at the CEEW, a Delhi-based think-tank. Ensuring updation of the DDMPs and, more importantly, its practical implementation can help manage floods better, he added.

Nirmalya Choudhury, a senior researcher with Vikas Anvesh Foundation, a Pune-based think-tank, said: Embankments have been known to mess with the environment of the floodplains. These walled structures affect natural spillage of the rainwater to the ground to the lowest point on the river. This results in tributaries not being able to drain water into the river and subsequent water-logging. With the state struggling to soak up more than 53.5 mm of rainfall in a day and village habitations inundated and tributaries overwhelmed, Assam's preparations for such chronic flood events have come under radar.

“Usually when embankments are breached, villages inside embankments (between the river and embankments) are affected and are supposed to be evacuated. But this year, villages lying outside embankments in Darrang district, the very land the embankments were supposed to protect, were engulfed by floods,” said Nanu Saikia, executive-director of SATRA foundation, an NGO focused on disaster mitigation in villages of Assam. The issue with flood management at the global level is the exclusive focus on technocentric engineering structures such as embankments which uses up a chunk of the state exchequer, he added. “Embankments are a temporary solution and they are as good as their management.”

The government should bring the flood-affected people into the policy discourse and focus on making their lives flood-proof, said Choudhury. The northeastern regions are becoming increasingly fragile due to the exponential rise in climate extremes, said Mohanty.

Various government departments such as animal husbandry and agriculture should work towards intensive use of resources during the non-flood months, said Choudhary. “These include shifting livestock earlier or ensuring no spread of diseases so that during floods, there is no lingering concern on this end.””

Assam: Burmese fish come to Guwahati illegally!

<https://www.sentinelassam.com/topheadlines/burmese-fish-come-to-guwahati-illegally-593227>

"Burmese supari gives police sleepless nights in Assam. However, the illegal supply of fish to Guwahati from Burma (Myanmar) seems to bother none among the authorities concerned.

Reports glut the media over syndicates of fish imported to the state from Andhra Pradesh, Bihar, Uttar Pradesh, West Bengal etc. Fish from Myanmar continues to come to Guwahati illegally. How does the racket involved in this shady business give the watchdogs concerned a slip?

Sources say that a racket regularly supplies mainly two fish species – Hilsa (ilish) and Catla (bhokua) – to Guwahati from Myanmar. The racket brings the fish to Guwahati in some passenger buses via Manipur and Nagaland. According to sources, after dropping passengers in Guwahati, the buses go to their target traders in the city and drop fish consignments. The traders then distribute the fish in different parts of the city in trucks.

Burmese fish has high demand in Guwahati because their flavour is fresher than other fishes

imported from Andhra Pradesh, Bihar, Uttar Pradesh and West Bengal, which take longer transportation time."

Assam: Flood condition worsens

<https://thefederal.com/news/flood-condition-worsens-in-assam-landsides-in-arunachal/>

"The flood situation in Assam deteriorated on Wednesday with the number of affected increasing to 6.62 lakh in 27 districts and the toll rising to nine with one more person losing his life in Darrang district, an official bulletin said.

Assam State Disaster Management Authority said that at present 1413 villages are under water and Nagaon is the worst-hit district where 2.88 lakh people are reeling under the calamity. In Cachar nearly 1.2 lakh people and in Hojai more than 1.07 lakh people were affected, it said.

The other affected districts are Bajali, Baksa, Barpeta, Biswanath, Bongaigaon, Charaideo, Darrang, Dhemaji, Dibrugarh, Dima Hasao, Goalpara, Hailakandi, Kamrup, Kamrup Metropolitan, Karbi Anglong West, Karimganj, Kokrajhar, Lakhimpur, Majuli, Morigaon, Nalbari, Sonitpur, Tamulpur and Udalguri.

ASDMA said 46160.43 hectares of crop area have been inundated in the current wave of flood and massive erosion was seen in Barpeta, Bongaigaon, Charaideo, Chirang, Darrang, Dhubri, Dibrugarh, Kamrup Metropolitan, Nalbari, Sivasagar, Sonitpur, Tamulpur, Tinsukia and Udalguri districts.

Authorities are running 248 relief camps and distribution centres in 14 districts, where 48,304 people, including 6,911 children, have taken refuge. They have distributed 2,264.22 quintals of rice, dal and salt, 5,977.48 litres of mustard oil, 2,393.84 quintals of cattle feed and other flood relief items. it said. Till Tuesday over 4.03 lakh people were affected by the deluge across 26 districts in the state.

The bulletin stated that the Army, paramilitary force, NDRF, SDRF, civil administration, trained volunteers, fire and emergency services and local people have evacuated 8,066 persons from various flood-hit parts of the state by deploying boats and helicopters. Fresh landslides have taken place in Hailakandi and the devastated Dima Hasao district, where the local administration has set up many relief camps for the affected people, the bulletin said.

Embankments, roads, bridges and other infrastructure have been damaged by flood waters in Biswanath, Barpeta, Goalpara, Nagaon, Nalbari, Tamulpur, Bajali, Cachar, Darrang, Dhemaji,

Lakhimpur, Morigaon, Sonitpur, Udalguri, Dibrugarh and Kamrup, ASDMA said.

A total of 3,07,849 domestic animals and poultry have been affected in the deluge across 13 districts, it added. Kopili river is flowing above the danger marks at Dharamtul and Kampur, and Disang at Nanglamuraghat, the bulletin stated.

In view of the damages to railway tracks in multiple locations, the Northeast Frontier Railway (NFR) has already suspended all trains through Lumding-Badarpur Hill Section to Barak Valley, Tripura, Mizoram and Manipur, and restoration work is on in the damaged areas. In neighbouring Arunachal Pradesh, the incessant rain over the last couple of days triggered landslides and flood-like situations in several districts.

So far four people have died in Itanagar due to landslides while the body of three others, including a woman buried under one on Sunday night is yet to be recovered despite efforts, a police official said. Torrential rains has led to flooding by Lohit river and its tributaries in Lohit district and is threatening areas like Machuwa camp, Tezu Khola, Jhalukbari and 32 miles, the officials said.

The Lohit District Disaster Management Office (DDMO) has advised people not to venture into Lohit river or any other vulnerable pockets for fishing or any other activities. Lohit deputy commissioner Marge Sora said that 35 families were shifted to temporary relief camps at Tezu, the district headquarters.

The landslides have hit water supply in the capital complex since Monday night comprising Itanagar, Naharlagun, Nirjuli and Banderdewa areas and hit surface communication between Itanagar and Ziro in Lower Subansiri district via Potin. Meanwhile, Tripura, which is facing depleting stocks as railway services to the state has been snapped due to the devastating flood in Assam, may transport essential commodities through Bangladesh's Chittagong.

“There has been no confirmation over the restoration of train service through Lumding-Badarpur section in Assam and disruption in train service for a long period will have an adverse impact on the supply of essential items in Tripura. That is why we are planning to bring essentials by using an alternative way – the Haldia- Chittagong-Akhaura-Agartala transshipment route to transport essential items on an emergency basis, L Darlong, the principal secretary of Tripura transport department said. He said the state's stock of petrol will only last for eight days and diesel for five, which is a matter of concern.

The Assam-Agartala national highway opened for vehicular movement on Wednesday and IOCL

has started sending petrol and diesel to the state in takers from Guwahati and Silchar, Additional secretary in the food and civil supplies department, Tapan Kumar Das said."

Assam: Heavy rains trigger floods in northeast India, killing 11

<https://www.newstimes.com/news/article/Heavy-rains-trigger-floods-in-northeast-India-17177951.php>

"At least 11 people have died in floods and mudslides triggered by heavy rains in India's remote northeast region, officials said Tuesday.

Several railway stations were closed because of floods, said Nazreen Ahmed, a senior official in Assam's Dima Hasao district. She said nearly 200,000 people in the district were cut off from the rest of the state as roads and bridges were either blocked by landslides or washed away. The army deployed helicopters to help with rescue efforts.

Officials said four people were killed Monday following heavy rain and mudslides in the region's frontier state of Arunachal Pradesh. Two others died when their houses on a small hillock collapsed in the state's capital, Itanagar, and two road construction workers were killed by mudslides at another location.

Seven other people were reported killed in neighboring Assam. The state's disaster management agency said nearly 700 villages were underwater. The Indian Meteorological Department forecast very heavy to extremely heavy rain in the region for the next four days.

Landslides and floods are common in India's Himalayan north. Scientists say they are becoming more frequent as global warming contributes to the melting of glaciers there. In 2020, flash floods killed nearly 200 people and washed away houses in Uttarakhand state. In 2013, thousands of people were killed in floods there.

Assam: Diversion of floodwaters to wetlands: Need for a calculative approach

<https://www.sentinelassam.com/editorial/diversion-of-floodwaters-to-wetlands-need-for-a-calculative-approach-590786>

"Kangkana Goswami Bharadwaz is an Advocate at Gauhati High Court & Member of Assam Wetland Authority and Nidarshan Nandan Koushik is a Field Researcher at Piramal Swasthya Management and Research Institute. In a recent move, the State government of Assam has announced its ambitious design to channelize flood waters of the Brahmaputra to nearby wetlands and oxbow-lakes as a part of its flood mitigation strategy. The government plans to

initiate the entire process based on a well-planned scientifically backed mechanism through methodologies like flood hazard mapping, satellite imagery for identification of suitable and depleting wetlands, space technology intervention in flood management etc. For this, the government has roped in agencies like North East Space Application Centre (NESAC) and (Assam State Space Application Centre) which are engaged in providing satellite data.

This can prove to be a game-changer in terms of both flood mitigation and wetland restoration as wetlands are said to act as sponges that can easily absorb water. More specifically riparian wetlands can survive inundation by floodwaters and often actually benefit from mild flooding. Water diversion to wetlands may also hugely contribute to wetland restoration for filled up or dried up wetland, can add to its nutrition quotient, help in purification, support its flora and fauna and can also help wetlands execute its climate change mitigation services.

All said and done, this ambitious endeavour, however, needs to be a calculative one backed by adequate research as it has its fair share of pros and cons, advantages and limitations. While doing this, the range and array of ecosystem services that wetlands provide should be brought into screening to understand the impact of mild to severe flooding on each one of them. Wetlands are known to provide a host of social-environmental services like (supporting services (primary production, soil formation), regulating services (water regulation, water quality, disease regulation, climate regulation), provisioning services (drinking water, food supply, livelihood), and cultural services (aesthetic value, recreation and tourism).

Sudden changes in the configuration , proportion and orientation of the wetland due to unregulated and access flooding may lead to several disturbances as well. Alterations may include changes in nutrients and physical conditions of aquatic ecosystem, sediment transportation and resultant increased deposition, changes in concentration of nitrogen and phosphorus in water and resultant water quality due to increased nutrient transportation and release of disease-causing agents from sediments or overflowing sewer systems. Moreover, abrupt release of untreated flood waters into wetlands may also lead to changes in total coliform and metal concentrations due to bacteria and metals mobilized by floodwaters.

Flood water channelling can result in transportation of excessive nutrients and potentially stimulate excessive primary production (eutrophication) or even alter primary producer community composition, causing unfavourable species to dominate. For example 'Harmful algal blooms' (HABs) such as cyanobacteria resulting from excessive nutrient transportation from flood waters polluted Lake Winnipeg in Canada and Erie Lake in Colorado causing health hazards for people who were dependent on this water body for drinking water supplies. Other adverse impacts include change in aquatic environment for the indigenous flora and fauna,

impact to wetland economic services and deterioration of its aesthetic value.

To add on, changes in 'climate change regulating quotients' of the wetland may also occur due to change in methane and carbon dioxide release as a result of aerobic /anaerobic microbial processes that influence organic matter decomposition. Other disruptions that may occur include fish distribution and abundance, unsafe water levels, increase in debris, plastics and other toxic contents in water and accelerated discharge of industrial and urban toxic materials and nutrients into waterways.

In another incident reported in Bengaluru, chunks of dead fish were washed ashore in the banks of the Ulsoor Lake, depicting the toxic state of the water of the lake. Reportedly in Karnataka, the city lakes are drowned in the piles of waste and toxic liquid and experts have confirmed that oxygen levels in the lakes in Bengaluru have depleted because of leachate and sewage seeping into the lake water contaminating the water to a level which is absolutely poisonous to the aquatic ecology of the water bodies.

To conclusively summarize the purpose behind pointing out the concerns, it is crucial to consider that future research and a carefully curated preliminary environment impact assessment of the nuances of this ambitious initiative and bring in a more scientifically-proven process to rely on detailed research on the pros and cons of both the positive and negative ramifications on the wetland ecosystem services to improve our understanding of the proposed initiative. Additionally, studies linking ecosystem processes with ecosystem services should be undertaken to improve our understanding of the effects of disturbance on aquatic ecosystem services in general.

The post-flood changes in the wetland ecosystem, the exacerbated changes introduced to the ecosystem configuration needs to be well addressed as recovery post flood is highly variable and can extend to a very lengthy period of time. Legally speaking ,the entire gamut of activities ranging from considering the amount of water that can be safely diverted to the way in which the diversion to be executed should be regulated and monitored under scientifically curated legal guidelines."

Assam: Illegal fish coming from Bangladesh

<https://www.sentinelassam.com/topheadlines/illegal-fish-coming-from-bangladesh-588039>

"The Departmentally Related Standing Committee (DRSC) of the Assam Legislative Assembly, in its 24th report on the State Fisheries Department, recommended that the department should constitute a Task Force to stop illegal fish from being brought into the State

from Bangladesh, especially in Bangladesh bordering districts, with support from the district administration.

In its 23rd report last year, the Committee observed that fish from Bangladesh were illegally coming into the State through different routes, especially in the bordering districts, affecting the market value of locally produced fish. The Committee recommended the Fisheries Department to look into the matter and take necessary steps to stop such illegal practices. The Fisheries Department, while considering the importance of the issue, instructed the District Fishery Development Officers of all districts, especially the bordering districts of Assam and Bangladesh like Cachar, Hailakandi, Karimganj and Dhubri, to examine the matter related to fish coming illegally from Bangladesh and to take necessary initiatives to stop such illegal practices in coordination with the respective district administration.

Most of the districts reported that illegal fish from Bangladesh could not be detected but Cachar district has reported action like seizing of such illegal fish in some markets. Few other districts intimated that periodic visits to the markets and trading points with Custom officials would be helpful to keep a record and to stop such illegal practices. In its 24th report, the Committee observed that based on the previous year's recommendation, illegal fish coming into the State from Bangladesh had been controlled to some extent, but had not been fully stopped. Hence, the Committee this time recommended constituting a Task Force.

Assam produced 3.93 lakh MT fish in 2020-21 while the fish production in 2021-22 is anticipated to be around 4.32 lakh MT. Yet, Assam has to import 12-15 MT fish every day from other States to meet its daily fish requirement."

Assam: Plea to shift dry fish market at Jagiroad

<https://www.sentinelassam.com/north-east-india-news/assam-news/plea-to-shift-dry-fish-market-at-jagiroad-585460>

"Asia's biggest dry fish market at Jagiroad is causing concern for the people here. Big trucks loaded with dry fish are haphazardly parked on both sides of the busy station road, causing traffic snarls in the area. Moreover, the smell of decomposed dry fish makes it difficult for the people living nearby. The dry fish market does not have proper sewage and sanitation facilities leading to an unhygienic environment as street dogs and crows scatter rotten dry fish here and there.

People have urged the authorities concerned to shift the market to the outskirts of the town and to develop the market in a planned way."

Assam: Fishing net banned in Charaideo from 1 April to 15 July

<https://www.sentinelassam.com/north-east-india-news/assam-news/fishing-net-banned-in-assams-charaideo-from-1-april-to-15-july-585379>

"The District Magistrate of Charaideo has issued a vide order under the 144 section of the Criminal Procedure Code (CrPC) restricting the usage of fishing nets during the breeding season of fishes.

According to the order, one cannot use specific fishing nets in the area for 60 days from 1st April 2022 to 15 July 2022 which is the reproductive season of fish. Different types of fishing nets like fasijal, masijal, berjal and others with meshes less than 7cm bar/14 centre are banned for the aforementioned days.

As informed by the officials catching and killing of brood fishes is also prohibited during the breeding period starting from Friday 1st April. Fishes carrying sperms and eggs of the fish species such as Catla (Bahu), Mrigal (Mirika), Koliajora (Mali) Rohu, Kurhi, Chital, Ghoria and Khorla in a proclaimed fishery are banned.

Official further informed that the usage of movable bana with a gap of less than 7 centimetre square for fishing activity in any fisheries, rivers, beels or dobas is also restricted as per the order issued."

Assam: Cage fish farming has potential to maximize profit for fisherfolk

<https://nenow.in/article/cage-fish-farming-has-potential-to-maximize-profit-for-assams-fisher-folk.html>

"In the wake of the struggle to make a sustainable living due to the COVID-19 pandemic related restrictions and hardship, cage fishing can be proved to be a boon for the 25 lakh fish farmers of Assam among them around 36 per cent are women.

Assam has around 2.86 lakh ha of water resources with Brahmaputra and Barak as main river system and with around 53 tributaries, around 430 registered and around 767 unregistered beels/Ox-bow lakes, 369304 individual ponds, 6328 community tanks and around 3882 derelict water bodies/swamps.

Fish production in Assam was 2.54 lakh MT in 2012-13 which increased to 3.73 lakh MT in 2019-20 as per Handbook on Fisheries Statistics, Government of India. Among these, major carps (Catla, Rohu and Marigal) have 38.6 per cent share. Still there is a huge demand in other

states as well as untapped potential for export of indigenous fishes in neighbouring country Bangladesh. Although the practice of cage fish farming dates back to the late 1800 in Southeast Asia but in India it is an emerging practice that involves growing fishes in existing water resources in an enclosed net cage maintaining free flow of water from the surrounding water body.

In India, cage fish culture in inland water bodies was initiated by the Central Marine Fisheries Research Institute(CMFRI) and the National Fisheries Development Board (NFDB)in the state of Andhra Pradesh in 2005.

For the first time, cage fish culture was practiced in the running waters of Yamuna and Ganga near Allahabad in Uttar Pradesh and in pond water bodies of Karnataka. In India it is still at an evolving stage especially in states like Kerala, Tamil Nadu, Karnataka, Goa and Gujarat.

Wetlands of Assam are amongst the most important wetlands from fisheries perspective and thus cage aquaculture can be developed quickly in most of districts of the state because of high demand for fish not only within the state but also in the neighbouring states. The Assam state has enormous water resources that are appropriate for fish varieties such as Catla, Rohu, Mrigal, Silver carp, Grass carp, Common carp, Kurhi, Mali, and Java Puthi.

The cage fish farming in Assam can be proved to be a very cost effective fish farming method with high economic returns and resulting in very low carbon emissions. Farming of fish in an existing water body removes one of the major challenges of fish farming on land – the need for a constant flow of clean and oxygenated water. This method of fish farming is highly economically beneficial to farmers as it requires less capital investment for construction of pond or for other equipment and less working capital. It can be practiced in many types of water bodies such as fresh water bodies and existing beels with a very limited manpower.

CUTS International with support from Swedish International Development Cooperation Agency (Sida) through Oxfam under a regional programme entitled ‘Trans-boundary Rivers of South Asia’ (TROSAs) conducted field visits in 2021 along with officials of the Directorate of Fisheries to observe and examine the situation and potential of cage fish farming in Assam. The programme is currently organised at a trial basis in the Abhayapuri village of Bongaigaon district and also at the Borghuli village of the Koliabor districts. Presently many fish varieties such as Pangash, Kawai, Rohu, Katla, Java Chitol and Putiare being farmed in these cage projects in Assam.

Cage fish farming is part of a special scheme under the Chief Minister’s Samagra Gramya Unnayan Yojana (CMSGUY) which has been implemented by the Directorate of Fisheries,

Government of Assam. Under the cage fish farming programme the state government provides subsidy up to 70 percent and the rest of the amount for the cage farming project has to be implemented by the SHG or a registered non-profit society."

Assam: A photo essay on how and where fishing nets of diverse shapes and varying mesh sizes are used in rivers

<https://www.downtoearth.org.in/news/economy/net-gain-a-photo-essay-on-riverine-assam-81674>

"In its journey to the Bay of Bengal, the Brahmaputra carves out different types of waterbodies along Assam's landscape. These include rivers, streams, wetlands, creeks connecting the wetlands to rivers, and innumerable ponds, which offer ample fishing opportunity. Fishing has, therefore, been a way of life for the local communities, such as Kaibarta, spread across the state.

Today, however, they are perplexed by the changing nature of waterbodies. Fishers say unpredictable and extreme rainfall patterns are causing fluctuation of the water level in streams and rivers and such changes affect migration and other behavioural traits of fish across the waterbodies.

Their observations are corroborated by studies, such as Mapping India's Climate Vulnerability by the Council on Energy, Environment and Water, released last year on October 26. The study finds Assam to be the most vulnerable to climate impacts in the country.

Apurva Kumar Das, joint director-in-charge, Directorate of Fisheries, Assam, says an increased load of sediments in the Brahmaputra and its tributaries is turning the water turbid and opaque, reducing the dissolved oxygen necessary for aquatic species. Growth of invasive species, such as water hyacinth, is also deteriorating the water quality.

Assam's fishing communities are bracing up to these challenges using varied tools — traps, gears and nets — built using traditional knowledge and from locally available resources such as bamboo, cane, jute strings, cork floats and earthen loads.

Resembling a triangular basket is the jakoi or scoop gear, mostly used by the women fishers. Made of bamboo matting, it is edged with thick splinters that extend as handles. Holding on to them, it is dragged like a shovel along the bed of the waterbody. This churns up the water and the fish entering the basket, apparently to take refuge, get caught. With jakoi comes kholoi, a bamboo-wickered pot that the women tie to their waist to keep the fish captured during the trip.

The tubular paori with sizes ranging from 2.5 to 4 metres is used in small waterbodies or for

fishing in flood water. It is filled up with branches, twigs and leaves of aquatic plants, to lure the fish with a safe refuge and eventually trap them. “The traps are kept concealed in low lying areas under water, tied to bamboo shafts erected at the edge of the waterbody to prevent them getting displaced by the current,” says Bharati Das from Changmaigor village in Jorhat district. The catch mostly comprises spiny eels, various kinds of catfish, bronze featherback and small prawns.

This cast net is thrown into the waterbody for encircling a probable fish-bearing area. Small iron weights tied to peripheral pockets stitched at its lower edge, make the net sink into the water. “The apex of the net held through a long chord is tugged now and then and the sinkers (iron weights) disturb the fish. They end up trickling into the net pockets and get caught,” say Rathin Das and his sister Maloti from Khurahala village in Majuli district. Khewali jaal can be used in multiple types of waterbodies — streams, wetlands and ponds having sufficient depth. The catch includes various commercial fish, such as chital (*Chitala chitala*), minor carp (*Labeo bata*) and major Indian carps like rohu (*Labeo rohita*), mrigel (*Cirrhinus mrigala*) and catla (*Catla catla*).

This is about 10 m-long wall-like net, placed transversally across large waterbodies. When the fish tries to swim through the “net wall”, it gets caught. The size of the mesh just allows the head of the fish to get in and not its body. Then as it struggles to get out, its gills get entangled in the mesh and it appears as though it is hanged (phansi) along the net. Such nets are often left overnight in the waterbody.

Resembling a plunge basket of about 0.5-1 m tall, polo is made of thin bamboo strips, kept open at both ends. The circular bottom is wide but the top opening is much smaller, lined with a thick rim. “Holding on to it, the fisherman slowly wades across the waterbody and sensing the presence of fish below, quickly plunges the gear, pressing the upper rim firmly against the bed of the waterbody. If fish get trapped within, they are taken out through the opening at the top,” says Pinku Das from Changmaigor village in Jorhat district. Polo is used for a quick catch of fish such as murrel, featherback or small carps from shallow water."

Assam: German aid for state fish farmers

<https://www.sentinelassam.com/guwahati-city/german-aid-for-state-fish-farmers-577070>

"The Government of Germany, as part of its initiative to eradicate hunger and malnutrition across the globe, has reached out to the State of Assam to ensure food security and sustainable livelihood for the marginalized section of the society, stated a press release. The German Government's vision of 'One World No Hunger', fast-tracked by its Federal Ministry for Economic Cooperation and Development (BMZ)), and realized by the German Agency for International Cooperation (GIZ) through global programmes, is all poised to change the lives of

the small and marginalized fish farmers of the State. Training and capacity building of fish farmers in the State is the prime agenda for the organization as this approach will deliver a three-pronged advantage of enhanced income, food and nutrition security, and sustainable aquaculture to the farmers. Focal person of GIZ in Assam, Jeherul Islam, on Monday inaugurated a residential training for fish farmers held under the aegis of GIZ-SAFAL at NGO Kalong-Kapili's Aquaculture Field School (AFS) at Bagibari in Sonapur. Kalong-Kapili, which is one of the partner NGO's of GIZ in this ambitious project, will be training 55 fish farmers as Community Resource Persons (CRP) to disseminate scientific and sustainable fish farming methodologies in the rural areas of the State. "These 55 fish farmers have been selected from the Farmer Producer Organization (FPOs) of Bokajan, Sootea, Naduar, Raha and Kathiatoli blocks. Following all the government mandated COVID-19 safety norms, these fish farmers will be trained at our AFS on scientific fish farming, capacity building, financial literacy, soft skills, IT, etc," informed Jyotish Talukdar, Director of Kalong-Kapili. It is be noted that this training will span three phases of three-days, five-days and ten-days respectively. At the end of the training, these 55 CRPs will take their knowledge to other fish farmers in their areas. A total of 27 FPO members were present on the first day of training, including nine female fish farmers.

Assam, Manipur and Tripura: Ramsar designated wetlands of Northeast India are under imminent threat

<https://assamtribune.com/north-east/ramsar-designated-wetlands-of-northeast-india-are-under-imminent-threat-1352326?infinitescroll=1>

"Guwahati, Feb 2: Wetlands contribute to the environment in a number of ways including regulating water quantity, groundwater recharge, protecting the ecosystem against floods and drought, acts as erosion control and sediment transport. It also provides as an important habitat for migratory birds and other species. However, threats like draining of wetland, construction works, climate change and dumping zones are contributing to the degradation of these natural habitats. India is blessed with a total of 899 natural and man-made wetlands. Amongst these 49 sites have been recognized to be of "international importance" under the Ramsar Convention. In Northeast India, the three Ramsar sites are- Deepor Beel in Assam, Loktak Lake in Manipur and Rudrasagar in Tripura. Deepor Beel The fresh water lake of Deepor Beel in located on the outskirts of Guwahati city. The wetland derives its name from the 'lake of elephants' which used to be a channel of the Brahmaputra River. Considered as one of the largest beels in the Brahmaputra valley, the lake was declared a Ramsar site in August 2002. Apart from providing livelihood opportunities to the locals in the form of fishing and farming, the lake is a natural habitat for many varieties of birds, 219 species of birds including more than 70 migratory species are reported in the beel area. Considering the richness of the bird varieties found in the beel,

BirdLife International has declared Deepor Beel as an Important Bird Area (IBA) with high priority for conservation.

Natural and anthropogenic causes are some of the major threats that the lake is facing. This includes the proliferation of human settlements, expansion of roads and industries, threat from construction of broad-gauge railway line on the periphery of the beel that often possess a threat to elephant corridor thereby affecting the movement of the pachyderms. Another major threat is posed by the dumping ground in the nearby area close to the water body. The situation worsens during the monsoon as garbage gets carried away into the water body, affecting residents and migratory birds and fish. Waste water from different parts of the city and the adjoining areas is also contributing to liquid waste, which is affecting the health of the water body. Loktak Lake Located at Moirang in Manipur, the Loktak Lake is the largest freshwater lake in Northeast India and is famous for the phumdis (heterogeneous mass of vegetation) floating over it. Situated on this phumdi, Keibul Lamjao National Park is the only floating national park in the world. It is a Ramsar-designated wetland of international importance and home to the last wild population of the highly endangered brow-antlered, or Sangai deer which is the State animal along with a plethora of migratory birds and plant-life. Development activities such as hydropower generation, irrigation and drinking water supply for economic expansion are the major stress factors and cause rapid conversion to other uses and their function in a wider economic sense. Locals and environmentalists have often voiced their concern over the hydropower project which is gradually destroying the lake's ecosystem, greatly harming local livelihoods and threatening the habitat of animal species.

Degradation of catchment areas has occurred due to the construction of Ithai barrage. Deforestation and shifting cultivation in the catchment areas have accelerated the process of soil erosion resulting in the lake's shrinkage due to siltation. The annual silt flow into the lake is estimated to be 336,350 tonnes. The nutrients carried through the catchment areas are discharged into the lake affecting its water quality, thus encouraging the growth of water hyacinth and phumdis. All these activities have a direct bearing on ecological stability of the lake. The thickness of the phumdis has also decreased in the National Park, thereby threatening the survival of the Sangai deer. Rudrasagar Lake Also known as Twijilikma, the lake is located in Melaghar, in Sipaijala district of Tripura, about 52 kms south of Agartala. It was declared as a Ramsar site in 2007. The lake is situated near the Majestic Neermahal which is in the north-east bank of the lake. The Rudrasagar Lake is a natural sedimentation reservoir, which receives flow from three perennial streams Noacherra, Durlavnaraya cherra and Kemtali cherra. After settling the sediment from the received flow, clear water discharges into the river Gumati through a connectivity channel Kachigang. Rudrasagar is a potential Important bird area and attracts a large number of waterfowl in winter.

Among the rarer species recorded are the endangered Baer's pochard and near-threatened ferruginous duck. The main threats are increasing silt loads due to urbanisation, deforestation, expansion of agricultural land and intensive farming, and land conversion for population pressure. Apart from these the other major threats include dumping of garbage, deposition of solid waste and storage of construction materials along the shoreline. Destroying or degrading wetlands which are considered to be a rich repository of bio-diversity can lead to serious consequences, such as increased flooding, extinction of species, and decline in water quality. These consequences can be avoided by maintaining the valuable wetlands we still have and restoring lost or impaired wetlands where possible.

Assam: Saving our rivers from illegal mining

<https://www.sentinelassam.com/editorial/saving-our-rivers-from-illegal-mining-574515>

"Illegal river-bed mining and indiscriminate sand extraction and stone quarrying from rivers has become a major ecological menace across India. An organization called South Asia Network on Dams, Rivers and People (SADRP), in a recent report said, illegal riverbed mining has become a pan-India menace and there is hardly a river left which has not being mined in the most unscientific and uncivilized manner. Assam too is no exception. This newspaper has reported on the front page in its Sunday edition, not a river, big or small, including the Brahmaputra has been spared. SADRP had in its previous year's report had not only highlighted how illegal sand mining on the Brahmaputra river bed has been posing serious threat to the eastern Dibrugarh Town Protection (DTP) dyke, but had also brought to light the fact that sand mafias and criminal gangs were allegedly hand-in-glove with a section of forest officials in the sand-mining activities, particularly in the Maijan, Mohanaghat and Jokai areas. It has been well-established that rampant, unscientific and illegal sand-mining and stone quarrying in river-beds has been seriously affecting the ecology of the rivers.

Excessive sand mining can alter the river bed, change the course of the river, erode river banks, and lead to soil erosion. And, above all, it causes irreparable and irreversible damage to the living organisms in the rivers including fish and dolphins. What damage river-bed mining can cause to a river was best seen when an RCC bridge across the Dilli river had collapsed at Namrup a few years back. This newspaper on Sunday mentioned that machines and excavators are currently in use on the Kopili and Kolong rivers in Morigaon district to extract sand. In Golaghat, Sivasagar and Karbi Anglong districts, gangs have been using pumping machines and excavators to extract sand, which is supposedly banned by the forest department. A look at the Nona in Nalbari and the Bhogdoi in Jorhat on the other hand will show that there is hardly any semblance of a river left there, all because of illegal and rampant river-bed mining. There are

allegations that while the illegal mining is done under protection of a section of unscrupulous politicians, forest officers often turn the other way or fail to apply the law of which they are the custodians.

The forest minister, known for his honesty and upright stand, probably needs to take it up with the Chief Minister if he finds it difficult to rein in the politician-criminal-official nexuses which are out to wipe out the rivers of the state. One thing must be borne in mind – be it threatened aquatic ecosystem, precious surface and groundwater resources, costly public infrastructures or land and lives of villagers, farmers and manual miners – all have already begun paying a heavy price of mindless mining.

Assam: Community fishing at Deepor Beel in Guwahati

<https://www.sentinelassam.com/guwahati-city/community-fishing-at-deepor-beel-in-guwahati-572392>

"Maintaining an old tradition, people from 12 nearby villages got together on Sunday and caught fish at the Deepor Beel here on the cusp of Magh Bihu. Thousands of people gathered at the site to watch the fishing. Some of the spectators rushed to buy various varieties of fish. State BJP president Bhabesh Kalita was among those who visited Deepor Beel to buy fish. Kalita said that it a treat to the eyes to watch the community fishing and laid stress on keeping this tradition alive. He said that local varieties of fish ought to be bought by people because it helps the fisher folk.

Assam: Motorcycles distributed among farmers in Udalguri District

<https://www.sentinelassam.com/north-east-india-news/assam-news/motorcycles-distributed-among-farmers-in-udalguri-district-569047>

"A ceremonial function was organized at the premises of Udalguri District Fishery Office campus to distribute motorcycles with iceboxes under SOPD of BTC on Monday. The function for distribution of motorcycles with iceboxes among the farmers was started with a welcome speech by Subhas Saharia, field demonstrator of Udalguri District Fishery Development Office. After that the function was formally inaugurated by Dr Nilut Swargiwary, Executive Member of BTC. A total of 10 motorcycles with iceboxes were provided to the beneficiaries. Meanwhile, District Fishery Development Officer Bipul Kr. Khataniar spoke about the scientific method of fish farming. The ceremonial function was concluded with vote of thanks by Purnananda Boro, field demonstrator of Udalguri District Fishery Development Office.

Bangladesh and India: Assam can benefit from strengthening trade and connectivity ties

<https://www.sentinelassam.com/editorial/bangladesh-and-assam-can-benefit-from-strengthening-trade-and-connectivity-ties-567251>

"It is Bangladesh that paved the way to build a peaceful North East India. As a regional state, Assam is benefitting from that. Bangladesh has played a vital role in curbing terrorism for the region. Bangladesh's handing over ULFA militants to India has freed Assam from separatism and extremism. Bangladesh wants peace and harmony with its neighbours. Bangladesh doesn't believe in anarchy, chaos. So, North East India should always be grateful to Bangladesh for this. Bangladesh doesn't like any internal or external conflicts across the world. For ensuring this, Bangladesh signed the 'Chittagong Hill Tract Peace Accord' with the insurgents in the CHT in 1997. It also repatriated a number of Chakma refugees in its own land earlier. Bangladesh has already responded to major security issues that have long been of concern to India. Bangladesh has handed over a large part of India's northeastern rebels to India. These rebels were carrying out anti-India operations from the soil of Bangladesh. Major Anup Chetia, a member of the United Liberation Front of Assam (ULFA) rebel group, was a major headache for the Indian security authorities. Bangladesh also handed him over to India. The activities of this foreign-backed terrorist and insurgent groups were banned strictly by Bangladesh. Bangladesh is a true well-wisher of North East India.

All North-East Indian provinces, especially Assam should realize this. However, Bangladesh and India are bordering countries. Bangladesh and India have a warm, deep and diverse relationship. Both countries are celebrating the 50th anniversary of bilateral relations. Assam is also a partner in this relationship. Bangladesh shares its borders with five Indian provinces, including Assam. As the largest state in the Northeast Region (NER) of India, Assam shares nearly 263 kilometres of the border (land and riverine) with Bangladesh. Given the size, population, and location, Assam's participation in trade and commerce with Bangladesh is important for the Indian government. Thus, Assam is an important factor for Bangladesh. Most of the Bangladesh-India border is with West Bengal. This Bengali-speaking region of India is also predominant in terms of commercial activities. North-Eastern states of India, including Assam, should focus on the strength and potentials of bilateral trade ties between Bangladesh and North East India. Assam should realize this with special attention. Bangladesh is going through a south Asian economic miracle. It is true.

So, it would be beneficial for Assam to bolster the trade ties with Bangladesh. Assam should utilize all potentials between Bangladesh and Assam. Bangladesh could benefit from growing trade and connectivity ties. Assam can be a partner with Bangladesh in this connection. Assam can benefit from Bangladesh's economic rise. Connectivity between Assam and Bangladesh can provide benefits for Nepal, Bhutan to some extent Myanmar, Thailand and Laos. (Bangladesh-India-Myanmar-Thailand connectivity potential). Transit through Bangladesh is very important

as it is isolated from the northeastern part of India. That is why it has to build cooperation in the development of Bangladesh. The full use of Chittagong and Mongla ports will open the door to Southeast Asia. Connectivity through railway, riverway and air would boost up the region. Both parties should set up 'Border Huts' on the Bangladesh border — where people on both sides of the border will be able to sell a variety of goods in their own currency. People from both parties would be beneficiaries ultimately. Both the governments think that this kind of border hut will be very popular among them. India and Bangladesh can set up border huts in Dhubri Lower Assam's Dhubri district along the international border. Ultimately the people of Sylhet and Assam can benefit from using this. Bangladesh and Assam can set up more land tariff stations along the border. This will encourage international trade by land and increase trade volume. Sheola, Balla, Bholaganj land tariff stations could boost up and accelerate the trans-border trade. Tourist exchange between Bangladesh and Assam can be a potential sector. Bangladeshi tourists can visit Assam through their borders.

Assam should strengthen the past ties between the people of Assam and the people of greater Sylhet on the border. Both parties should strengthen connectivity between the two countries by reopening long-suspended rail, road and waterway connections. Famous for having an international trade centre, Sutarkandi is the international border of India and Bangladesh. Through this space, the export of fruits, silicon and coal is done. The place is situated in the district of Karimganj, Assam. On the other hand, Malini Chara tea garden, Bichana Kandi, Ratargul Swamp Forest, Jaflong, Shaha Jalal Dargah, Sri Mangal, etc., can be tourist spots for Assamese. Inaugurating the Bangladesh-India 'Friendship Bridge' jointly with Indian Prime Minister Narendra Modi on March 9, 2021, Prime Minister Sheikh Hasina remarked that regional connectivity not only strengthens the friendship between Bangladesh and India but also builds strong trade ties. The Prime Minister of India expressed the view that such a link between Bangladesh and India would be very important for the trade of North East India, including Assam and Bangladesh as well. For Bangladesh, the bridge will not only facilitate trade with India but also with Bhutan and Nepal through India's Northeast region.

Bangladesh's increasing trade relations with Bhutan and Bangladesh through Maitree Setu is going to make ICP Sabroom as well as ICP Agartala commercial and logistic hubs of international trade in South and Southeast Asia. Meanwhile, a new cross-border rail link between Dhaka and Siliguri was opened by Prime Minister Sheikh Hasina and her Indian counterpart Narendra Modi during the latter's visit to Dhaka on March 26. Passengers from Dhaka can travel up to the northeastern states of India easily when the train service begins. Now, Bangladesh-Assam-Tripura can open such kinds of railway links to boost up the connectivity. Bangladesh and India have signed a Memorandum of Understanding (MoU) for the construction of a high-speed diesel pipeline from Numaligarh in Assam to Parbatipur in Bangladesh, a joint venture between Numaligarh Refinery Limited and Bangladesh Petroleum Corporation. As an indication

of goodwill, an initial consignment of 2,200 tonnes of diesel has already been transported from Siliguri in West Bengal to Parbatipur in 50 wagons by the Indian Railways. The decision to build the pipeline was taken during Modi's last visit. There might have some problems (NRC) between Assam and Bangladesh. But these problems should be addressed and resolved diplomatically and politically. Bangladesh and Assam should reap the benefits from strengthening trade and connectivity ties. There are huge potentials an increase in exports of goods from Sylhet and Bangladesh in the northeastern Indian state of Assam and vice versa. Assam can put its contributions to Bangladesh. Assam can make the Indian Central Government understand and urge to stop border killings along the India-Bangladesh border, sign the Teesta water-sharing deal as soon as possible, support Bangladesh in case of Rohingya crisis solution. The ports in Bangladesh need to be linked with Assam through Brahmaputra-Barak-Padma-Meghna riverine waterways to facilitate the economic growth of the region and restore rail connectivity between North East and Bangladesh. Sylhet has a long relationship with Assam.

Bangladesh's bilateral relations with the seven sister states, including the northeastern Indian states of Assam and Meghalaya, need to be maintained as in the past. Only then will there be an expansion of trade and commerce of Bangladesh including Sylhet with the seven sister states including Assam. Assam and Bangladesh can work together in the garment, health tourism, IT and education sectors. Bangladesh and Assam can also work together in the sector of counter-terrorism approach, human trafficking, illegal narcotics business, etc. According to influential Hindustan Times, in the future, with coordination between MEA and the Assam government, the state can push for greater connectivity with Bangladesh via rail, road and air along with a focus on organic food, silk, crude oil, fisheries, tourism and work-permits for skilled youth. Along with Bhutan and Myanmar, Bangladesh forms a key triangle around Assam. The Union government must encourage and help Assam take advantage of its geographical proximity with these three countries. Basically, there are huge potentials in the sector of trade, connectivity, people-to-people contact, cultural diplomacy between Assam and Bangladesh. Bangladesh and Assam should reap the potentials. Now it's time for Bangladesh and Assam to be beneficiaries. As Bangladesh paved the way peace process in North East India including Assam, now North East India should pave the way in serving the demand of Bangladesh.

Assam: “No funds asked for preservation of son beel by State Govt.”: Aswini Kumar

https://www.barakbulletin.com/en_US/no-funds-asked-for-preservation-of-son-beel-by-state-govt-aswini-kumar/

"Son Beel – the second largest wetland in Asia — located under Ratabari constituency of Karimganj is renowned for varieties of fishes, cultivation of which forms sustenance of more than 35,000 families residing around the freshwater lake. Apart from this, the beel also houses migratory birds from different locations during the winter season. The beauty of the lake is

further enhanced by trees which are locally known as 'Izoi'. The most unique part of the Sonbeel is that it becomes dry farmland for rice cultivation in the winter months. Local groups and organizations have time and again raised their voice for the preservation of the lake, which is losing its glory due to a variety of reasons. On Monday, Karimganj MP Kripanath Mallah, raised the issue of Son Beel in the parliament. Replying to his query, Ashwini Kumar Choubey, from Ministry of Environment, Forest and Climate change said that the ministry is aware of the freshwater lake in Karimganj and the state government is taking necessary developmental works in Son Beel. "Son Beel is one of the largest natural water bodies in Asia where during the winter season, it becomes suitable for paddy cultivation and during the rainy season, it is full of water and fish breeding takes place naturally. In the early parts of the winter season, birds from different areas migrate in Son Beel" the minister replied. In reply to whether the Government is aware of the absence of any prohibitory measures leading to merciless killing of the migratory birds there, the minister said that the State government has deputed forest staff to perform patrolling in Son Beel area and "as a result 3 offence reports have been drawn and 7 offenders have been arrested and sent to judicial custody for trial."

However, on the preservation of the lake, Ashwini Kumar Choubey, mentioned that the State government has not asked for any funds till now. "As informed by the State Government of Assam, Fishery Department and Assam Tourism Development Corporation have taken some developmental works in Son Beel. However, till date, no proposal has been received by Government of India from the State Government of Assam asking for funds for conservation, restoration, rejuvenation and management of Son Beel under National Plan for Conservation of Aquatic Ecosystem (NPCA) schem" he added in the written reply. Son Beel is surrounded by 100 nos. of villages and more than a population of 50,000 is directly dependent on it for their livelihood by way of fishing and paddy cultivation.

Assam: Fishermen, birds under threat over deepor beel demarcation

"Encroachment in the Deepor Beel wetland is not new. Numerous protests, complaints and regular media reports about the degradation of this Ramsar site, and the urgency of protecting it have failed to shake the State government as desired. Constant encroachment by businesses and industries in the periphery of the wetland has not only shrunk the total area but has immensely polluted the water body. Among all concerns raised by activists, environmentalists, nature enthusiasts, and other concerned citizens, the cries of over 800 fishing families can be best related to the unvoiced cries of the numerous species of fish and birds that must have been screaming for immediate attention. Although they seek preservation of the site, the fishing community has sought protection of their livelihood and permission to build embankments to preserve the fish from being flown into the Brahmaputra. Panchpara Samabay Samity Limited, a co-operative society formed in 1976, comprises of 825 indigenous fishing families living near

the Deepor Beel, comprising of 9 villages including Keotpara, NotunBasti, Hirapara, borbori, Nowapara, Hatuwapara, Medhipara, Matiya and Sokordou.

As per the society of the indigenous fishing families, massive encroachments over the years have shrunk a large area of the wetland. Of the original 3,090 bighas, 4 katha and 19 lesa of Deepor beel; over 500 bighas are now being illegally taken over by individuals, converting the eco-sensitive zone into an industrial hub. Additionally, the Guwahati Municipal Corporation's (GMC) choice of land for setting up of the garbage management project has only added to the rapidly deteriorating water quality of the Beel. Have the migratory birds ceased to visit deepor beel? The Assam government has announced plans to beautify the Deepor Beel to woo tourists and as a recreational space for the locals. Instead locals have claimed that with continuous degradation and increasing pollution of the area, the influx of migratory birds into this lush wetland has ceased in numbers over the years. Members of the Panchpara Samabay Samity Limited stated that constant sand mining from the periphery of the wetland has led to major disturbances in the ecosystem. A foremost consequence of that is the decreasing numbers of migratory birds in the area. The secretary of the Co-operative Society Gopal Das highlighted that truck loads of sand are carried away from the Beel every year, especially from February to May. This has not just polluted the water but disturbed the ecosystem balance.

“About 85 thousand migratory birds of 219 species visit Deepor Beel every year. But in recent years, we have seen a significant decrease in numbers and species of birds. Some have ceased to come altogether,” Das said Nityanand Das, member of the Panchpara Samabay Samity, has alleged that there are several NGOs operating in the region who have been collecting funds from several sources for the preservation and restoration of the birds residing in the wetland, especially the migratory birds. “But they have done nothing to date. They are no experts and have only devoured the funds.” he further said. Extinction of fish species from deepor beel impacts the local fishing community Deepor Beel has been the source of livelihood for the 825 families residing in its surrounding areas. Members of the community have alleged that given the high pollution level in the water, many fish species have disappeared in recent years. They have claimed that while there were about 61 species of fish in the water body earlier, only 15 to 20 remain currently. They attribute this to the number of industries and warehouses along with the GMC wasteland at Boragaon.

Although the old dumping site at Boragaon was closed due to its unscientific management, the untreated polluted water from the new garbage management site that flowed to the Deepor Beel degraded the water body considerably. Although the GMC is in the process of awarding a tender for setting up a proper garbage management plan at the site, the Corporation continues to dump the daily garbage collected from the city without any measures. The GMC started using the new Boragaon site in August. “Every day the Corporation dumps about 500 tons of garbage at the site

without any precaution. A huge dump has already accumulated and this will only keep on increasing till the waste plant is built. The water from there will eventually flow to Deepor Beel, which is already polluted. There are sand mines, large industries, warehouses and then the dumping ground, all destroying the ecosystem,” Nityanand Das said. Secure our livelihoods before implementing laws of wildlife sanctuary, demands fishermen. The Deepor Beel is connected to the Brahmaputra through the Khonajan channel. Every year around April, the fishing community releases fish seedlings into the water body for harvesting. By the time the seedlings grow and are ready to harvest around September-October, the water level of the Beel diminishes. Water from the wetland flows out to the Brahmaputra during this period. Meanwhile, to protect the fishes from flowing along, the communities barricade the channel with bamboo.

“This is a traditional way to protect the fish that has been practised for generations. The barricades are not made by miscreants but by the community. It is built in such a way that the water can flow out but not the fish,” the Samiti said. However, since the declaration of the Deepor Beel as a Wildlife Sanctuary in 1989, the Community has been facing harassment as their traditional barricading on the channel is considered as illegal constructions. The area surrounding this Wildlife Sanctuary is also currently under the process of being demarcated as an Eco-Sensitive Zone by the Union Ministry of Environment, Forest and Climate Change, a draft notification of which has already been provided. Highlighting the actual encroachments and its impacts on the ecosystem, the Panchpara Samabay Samity have demanded that their rights of livelihood be secured before the Government implements the laws or zonal plans, else it is a clear violation of Section 44 of the Indian Constitution whereby “State shall endeavour to secure for the citizens a uniform civil code throughout the territory of India”. “The Government has not paid any heed to our demand of building the channel properly. But our livelihood is being challenged. There are many illegal factors leading Deepor Beel to a slow death and these must be addressed at the earliest,” the Co-operative Society stated.

Assam: Villagers spawn success story with fish farming

<https://timesofindia.indiatimes.com/city/guwahati/assam-villagers-spawn-success-story-with-fish-farming/articleshow/87880506.cms>

"Jokapura village near Gohpur town in north Assam has shown how a community can turn its disadvantage into a thriving success story even during the times of Covid because of the vision of one entrepreneur. From a 10-acre fish pond in the middle of a 30 sqkm wasteland in 2015, Anup Sarmah, an entrepreneur, has converted the fishery into a 210 bigha (70 acres) project. He divided the fishery into 32 ponds and nurseries and engaged 20 families by skilling them and now they are catering to 20% of the fish consumption needs of the Gohpur subdivision, which has a population of about five lakh people. So far this year, the fisheries have produced 80 tons of live fish and are expecting another 40 tons till March 2022.

To make the villagers self-sufficient, the project trained 768 fish farmers and conducted more than 20 online training courses during the pandemic, which was attended by more than 1,000 fish farmers. For Sarmah, an MSc in botany from the Gauhati University, resigned as research associate from the erstwhile Regional Research Laboratory in Jorhat to show the way to the unemployed. He received the best fish farmer award under the 'NE and hill state category' from Union fisheries minister, Purushottam Rupala, on World Fisheries' Day on Sunday. The most valuable triple-asset it has managed to create is the fish seed bank covering 44 bigha with the support from APART, government of Assam, a fish feed mill and marketable live fish.

“Our fish seed bank has genetically improved varieties of fish seeds like Jayanti Rohu, Amur carp and Improve Catla originally procured from the National Freshwater Broodbank, National Fishery Development Board located in Bhubaneswar,” he said. The Bakori Doloni Gram Panchayat, which houses the fishing project, is not accessible during the monsoon when floods ravage the area. The Brahmaputra overflows and the banks get inundated. Sarma said he used country boats to reach the project site during such times. “The recurrent floods had made these areas unsuitable for paddy cultivation. The entire land had turned into a marshy wasteland,” he added. The entrepreneur then constructed a fishery unit in the middle of the wasteland and raised the embankment up to 14 feet with a width of 80 feet at the base to prevent floodwaters from entering the site. “For proper balancing and protection of the embankment we installed sluice gates, which regulate the water level inside the pond,” said Sarmah.

Assam: Kameng river turns black, mudslide suspected

<https://timesofindia.indiatimes.com/city/guwahati/assam-kameng-river-turns-black-mudslide-suspected/articleshow/87425121.cms>

"The water of Kameng river in the frontier district of East Kameng in western Arunachal Pradesh, which had turned black with high levels of turbidity on Thursday, is gradually returning to its characteristic clear form. The river originates from a glacial lake below the Gori Chen mountain, south of the imaginary McMahon Line dividing India and China. The district authorities suspected mudslide in the upper reaches of the Kameng river to be the cause behind the turbidity. A large number of dead aquatic animals, mostly fish, were found floating near Seppa, the East Kameng district headquarters, triggering panic in the area on Friday evening. The muddy river has also deposited a large quantity of clay on the banks. East Kameng district deputy commissioner Pravimal Abhishek Polumatla told TOI, ""Prima facie, it looks like the high turbidity might have been caused by mudslide in the upper reaches of Kameng river. We have written to the state government to engage its remote sensing agency to investigate the cause of the high volume of mudflow."" 'Dip in dissolved O2 led to fish death' He added, ""The Kameng river originates in our territory and is not an international river. Its roots are in the East Kameng district near the Gori Chen mountain.""

Even four years ago the Siang river, which flows from Tibet as the Yarlung Tsangpo and becomes the principal constituent river of Brahmaputra river in India, had turned black in the eastern part of Arunachal Pradesh and remained in the condition for several days. Polumatla said preliminary analysis, carried out by the fisheries department, indicated that a heavy flow of mud and debris has increased the turbidity level of the Kameng river, following which the level of dissolved oxygen in the water decreased considerably. "The fish were found to have died of anoxia due to the depletion of dissolved oxygen in water," he added. The district authorities have issued prohibitory orders banning people from entering the river for fishing, swimming or bathing. "We have also banned sourcing or consuming fish till lab results confirm that there is no presence of poisonous content in the river," he said. "We expect that in the next 24 to 36 hours, the situation will become normal," the DC said. East Kameng district, which derives its name from Kameng river, shares its northern boundary with China and has Tawang district on its west.

Assam: Pilot plant inaugurated for value added fish product preparation

<https://www.sentinelassam.com/business/pilot-plant-inaugurated-for-value-added-fish-product-preparation-558428>

"A pilot scale plant for value added fish products has been formally inaugurated at Dean's conference hall of Faculty of Veterinary Sciences, Assam Agricultural University on Friday by Dr Gopal Krishna, internationally renowned scientist, director cum vice chancellor, ICAR-Central Institute of Fisheries Education, Mumbai. This facility has been established at Guujan, Tinsukia by ICAR-Central Institute of Fisheries Education (CIFE), Mumbai under the financial scheme for North East Hilly region (NEH-Sub-Plan) in collaboration with Directorate of Extension Education, Assam Agricultural University and JEEVA SURAKSHA, Sivasgar, Assam. The facility established at this place includes all the basic equipment necessary for preparation of value-added fish products and have a capacity to produce about 200 kg of fish products daily.

This facility can be utilized by the locals for processing and preservation of their fish produce in the form of different ready to eat convenience and nutritionally enriched value-added fish products which will help in enhancing their income and improving their social status as well, Dr Ranjita Bania from the local organization, Jeeva Suraksha & coordinating officer informed the press and thanked the special efforts taken by the Principal Scientist and Head of Department of Post harvest Management and processing, Dr BB Nayak, Dr Amjad Balange, Principal Scientist and Avinash Sable, Senior Technical Officer with the support and guidance of Dr Gopal Krishna, Director and Vice Chancellor of ICAR-CIFE, Mumbai. The programme was organized to highlight the need of value added fish products and inform the common people about the facility which can be used for empowerment of the community especially the women folk of lower

strata. Inaugurating the pilot plant, first of its kind in entire north East on Friday, the chief guest, internationally renowned scientist, Dr Gopal Krishna has emphasised on the need of this facility for quality product development by the rural poor for entrepreneurship development. Value added fish products have very much potentiality in Assam, he added. Dr BB Nayak, Principal Scientist of ICAR-CIFE has informed that they have taken Northeast on priority basis and choose Assam for the establishment of this plant. Principal Scientist and coordinator of NEH programme from ICAR CIFE have showed some of the activities and facilities developed in the centre at Guijan, Tinsukia. Dr Atul Borgohain, Associate director of extension Education and local guardian of the project informed the house that this kind of initiative will encourage the entrepreneurs to take up such project which ultimately boost economy of the entire state. Addressing the gathering, invited guest, Managing Director of FISHFED, Dr. Dhruvajyoti Sharma said that today is a golden day for Assam when such kind of big facility has been inaugurated.

Of late, the demand and popularity of value added fish products has increased recently. The products imported basically from Myanmar till date were not standard as far as quality is concerned which opens the arena for the local entrepreneurs in this field. Chairing the programme Dr. Bibeka Nand Saikia appealed the house to explore the indigenous technical knowledge and reduce the cost of production while maintaining the quality of product, stated a press release.

Assam: Fish processing plant set up at Guijan near Tinsukia

<https://www.sentinelassam.com/north-east-india-news/assam-news/fish-processing-plant-set-up-at-guijan-near-tinsukia-training-programme-conducted-557977>

"As a start-up unit, a value added fish processing plant has been installed at Guijan near Tinsukia and a three-day capacity building programmes on value added fish product preparation was also organized by ICAR-Central Institute of fisheries Education, Mumbai in collaboration with Jeeva Suraksha, Sivasagar and Directorate of Extension Education, Assam Agricultural University, Khanapara, Guwahati that ended on Wednesday. The programme was organized to impart hands-on training on hygienic handling of fish and preparation of different value-added fish products. Preparation of value-added fish products like fish pickle, fish chukli, fish sev, fish cutlet and dried fish snacks were demonstrated during the training programme. Over 80 participants of marginalized groups and background were benefitted from this training module and were given opportunity to prepare the fish products individually.

This facility has been established by ICAR-Central Institute of Fisheries Education (CIFE), Mumbai under the financial scheme for North East Hilly region (NEH-Sub-Plan) in collaboration with Directorate of Extension Education, Assam Agricultural University and Jeeva Suraksha,

Sivasagar, Assam. Inaugurating the maiden project executed for the first time in Assam on Monday, Chabua MLA Punakon Baruah said that traditional preparation of dry fish had been practiced by the people of Assam since ages but scientific preservation and marketing of indigenous fishes was completely a new concept. He expected that the women and SHGs who participated in the training programme would facilitate their empowerment and commercial production would start soon. The inaugural programme was attended by Sarfraz Haque, ADC Tinsukia, Prof (retd) SP Biswas of Dibrugarh University, Pranab Sarma, Fisheries Development Officer, Tinsukia, besides other dignitaries. Dr Amjed Balange, Senior Scientist, and Dr Abinash Dubey, Technical Officer from CIFE, Mumbai, were present and they later acted as resource persons.

Assam: Launches app ‘Fishwaale’, India’s first e-fish market

<https://economictimes.indiatimes.com/news/india/assam-launches-app-fishwaale-indias-first-e-fish-market/articleshow/86793886.cms>

"Assam launched App Fishwaale, India's first e-fish market. Minister for Fisheries, Environment and Forest and Excise, Parimal Suklabaidya launched an App. Launching the App developed by Aqua Blue Global Aquaculture Solutions Pvt. Ltd. in collaboration with Fisheries department Suklabaidya said the App, a one stop solution for Aquaculture, will help the buyers and sellers to place orders and sell fish online. He exuded the optimism that it will help the fish farming community to get reasonable price for their produce and lead to elimination of middlemen. Suklabaidya said never before fish has been accorded the recognition of an asset by any government other than the Modi Government through the Pradhan Mantri Matsya Sampada Yojana. Through the App one can not only sell as well as buy fish but also quality fish seed and fish feed. Aquaculture equipment and medicine will also be available on the app. Aquarium tanks, ornamental fish and equipment can also be placed for orders online. Table size fish such as bhangon, mrigal and rohu and freshwater and seawater frozen fish (ice box) are also available coupled with dry fish packets, dry fish raw, fish pickles and processed fish products.

Assam: Largest wetland shrinks, fishers are staring at an uncertain future

<https://scroll.in/article/1006846/as-assams-largest-wetland-shrinks-fishers-are-staring-at-an-uncertain-future>

"When the night’s darkness descends over the waters of Son Beel, the largest wetland in Assam and the second largest in Asia, Rotish Das, 33, sets out to catch fish in his boat. He fishes

in the placid expanse of Son Beel through the night and sells his catch the next day, at a bustling fish market – the Kalibari bazaar, a few kilometres away. The catch that once earned him Rs 500 a day, has now dwindled in volume drastically. The declined stock of carps, prawns and catfish draws him a little more than Rs 150 daily, which is not enough to go around the year. “Earlier I would catch the same quantity of fish both during the day and the night,” said Rotish, the resident of Bagantilla, a village on the southern bank of Son Beel. “Casting a fishing net weighing about 10 kg does not guarantee a decent-sized catch, whereas a 5 kg net would suffice before. Fishes like Ilish (Hilsa) and Chapila (Indian river shad) are not available anymore.” The wetland is spread over more than 3,000 hectares in Assam’s Barak valley and is fed mostly by the Singla river, originating from the hills of Mizoram.

The northernmost part of the wetland drains through the outlet Kachua into the river Kushiara in Bangladesh, after traversing a length of 19.3 km. A dam constructed in 1954 on Kachua was replaced by a lock gate to enable navigation and migration of fish. Home to at least 69 different species of fish, the veritable paradise supports rich birds as well as other vegetation in the region. Dwindling incomes Joykumar Das, another fisherman, from Saija Nagar, a village on the eastern bank of the wetland, resonates a similar loss. His monthly income from fisheries would earlier earn him Rs 10,000-Rs 12,000 each month. Now, the income has dwindled with the business he refers to as “netting” or raking large unsparing synthetic nets over the wetland’s waters. These fishing gears are banned by the government and their use could get him and his fellow fishermen, in trouble with the authorities, according to Sahidul Islam Laskar, a civil rights activist based in Barak valley.

However, Joykumar barely gets by with his small catch totalling a daily income of Rs 300 or less, which amounts to Rs 6,000 or Rs 7,000 in a month. Key issues For hundreds of years now, the lifestyle of these fishermen has been shaped by the lifecycle of the wetland – brimming with water during the rainy seasons and drying up during winter. They practised fishing when the wetland had water and cultivated buro, the local paddy, when water was scarce. The fishermen belong to the Kaibarta community who migrated to Assam’s Barak Valley from Bangladesh after the Partition, settling in villages on the banks of Son Beel. There are over 30,000 Kaibarta families solely dependent on the wetland for their livelihood. Most of them are masterful boatmen and fishermen, who started engaging in agriculture only later. But a shortage of rainfall for over four years, has minimised the wetland’s water supply. Rotish recounts how at one time water would overflow the paddy fields during the harvest season. Now, rains are delayed by two months, he said. “Owing to the change in rain patterns, the water requirement for the aquatic and terrestrial ecosystems for which wetlands act as a medium, is not met,” explained Jayaditya Purkayastha, a leading herpetologist based in Guwahati, Assam. “This leads to them slipping away.” A 2012 study showed a reduction of 31.58% of the total annual rainfall between 2004 and 2008 in the Barak Valley region.

As climate change and anthropogenic activities threaten the wetland, fish productivity remains a distant memory for the fisherfolk. The upstream migration of Hilsa from the downstream rivers of Bangladesh, has stopped altogether. The effects have been devastating for Rotish and Joykumar, who rely on rice distributed as ration instead of their homegrown paddy. Rotish observes a 70% decrease in his paddy production, which he blames on the excess silt accumulated in the wetland. Lamenting at the loss of food security, he comments, “We would pride in feeding our guests fish from the beel and paddy from our fields. Now, that is impossible.” In Son Beel, overfishing, upstream pollution and agricultural encroachment, are destroying the sanctity of the diverse ecosystem. Local fishermen use gigantic gill nets with small holes –locally referred to as mahajaal, to that drag the bed of the wetland, entrapping young fishes and eggs, apart from the usual catch.

“Unlike the traditional fishing nets, these mosquito-net lookalikes trap more life than they are supposed to do,” said Anwaruddin Choudhury, an ornithologist and a former bureaucrat. These substandard fishing methods stress fish populations, which are a critical source of food for the nearly 150 bird species thriving in the region, as documented by Anwaruddin. Among the many birds, he marked during his sightings in Son Beel, are the openbill stork, the lesser adjutant stork, the golden plover, the whiskered tern, the great cormorant, the Indian cormorant, the common cormorant, the Brahminy kite, and the black redstart. However, most of these birds have shrunk in numbers, either due to poaching or habitat destruction and are rarely spotted now. “Encroachment is taking place on the small islands in Son Beel dotted with hijol trees (*Barringtonia acutangula*) that serve as habitats for migratory birds,” said Manabendra Dutta Choudhury, a professor at the Department of Life Science and Bioinformatics, Assam University, Silchar.

“These trees standing in water are being felled sizably.” “The beel largely occupied by the government and shared by the fisherfolk, is losing swathes of wetland to buro crop cultivation,” he elaborates. “Bundhs are created for capture fishing whenever the beel is found untouched.” The increasing deforestation around the hills through which the river Singla, Son Beel’s primary inlet flows has choked the wetland with silt, leading to eutrophication, significantly reducing the size of the wetland, added Manabendra. As a result, the wetland is slowly disappearing. A study from 2014 on fish diversity in the Barak Valley, captured a Geographical Information System mapping of the water area. A total of 3,593.6 hectares shrunk over a span of 100 years, from 1880 to 1980. Wetlands have been known to conserve tons of carbon every year through their stored biomass, in soil and land, apart from acting as buffers absorbing silt/nutrients during floods. “Wiping them out, transforms them from carbon sinks to emitters of carbon”, pointed out Purkayastha. Conservation challenges There are many hurdles to conserving Son Beel as a wetland, right from drumming up funds and political will, to changing the unsustainable fishing methods.

“Due to limited manpower resources, the concerned authorities are unable to enforce their mandates, such as stopping illegal fishing and spreading awareness”, said Laskar. Some experts say they believe that declaring the wetland as a Ramsar Site of Wetlands of International Importance, is imperative for its conservation. Researchers Moharana Choudhury of Voice of Environment, a non-profit working on environmental protection, and Deepak Kumar of the United Nations Development Programme, estimated the monetary value of Son Beel from a minimum of \$88 (6,530 rupees approximately) per hectare per year to a maximum of \$29,716 per hectare per year in their study Valuation of Ecosystem Services and Benefits of Son Beel Wetland in Assam, India conducted from 2016 to 2018-'19. “The study looked into the economy of aquatic resources, fisheries, net making and eco-tourism necessary to improve the socio-economic conditions of the marginalised, thriving on the peripheries of the wetland,” Choudhury explained. Others question if a simple designation would solve the issues of the wetland conservation. “The situation of wetlands such as Deepor Beel in Assam, remains grim, even after the declaration as a Ramsar site,” Purkayastha said. “Unless the stakeholders, especially the fisherfolk are convinced about saving the wetland by fishing sustainably, instead of indulging in lucrative profits, and the government introduces better policies, the conservation will remain a distant dream.”

Assam: Sustainable Development Goals

<https://www.sentinelassam.com/editorial/sustainable-development-goals-557080>

"The Assam government's decision to hold a Cabinet meeting in each district headquarters every month is aimed at prioritising the performance of districts in achieving targets and implementing various schemes and projects. The North East Region District SDG (Sustainable Development Goal) Index and dashboard developed by the NITI Aayog can be a ready reckoner for the State government in identifying the gaps and setting the district level development agenda. The NER SDG Index is the first of its kind in the country as it focuses on a region and ranks 120 districts of eight states of the region on SDG goals and targets. According to NITI Aayog, the special index offers insights into the social, economic, and environmental status of the region and the districts in their march towards achieving the SDGs.

The Index will be prepared and published annually, and reports will be disseminated to be used as a tool in the hands of all interested stakeholders - policymakers, government functionaries, civil society organisations, academia, businesses, and citizens at large. Assam became the first state in the region in 2016 to align its development schemes with SDGs and in having an SDG Vision. The NER SDG index, however, reveals that only in respect of five SDGs Assam districts have figured among the top five good performing districts of the region. No district of the state has figured among top five districts in respect of 10 SDGs - Zero Hunger; Good Health and Well-being; Quality Education; Gender Equality; Clean Water and Sanitation, Affordable

and Clean Energy; Decent Work and Economic Growth; Reduced Inequalities; Sustainable Cities and Communities and Peace, Justice and Strong Institutions. Kamrup district of the state has figured among the top five districts in respect of SDG 1 of No poverty which is aimed at ending poverty by 2030.

The district has also figured in the list in respect of SDG 7 of Affordable and Clean Energy. Two districts – Udalguri and Karbi Anglong have figured in the list of top five in respect of SDG 12 of Responsible Consumption and Production, Darrang and Sivavagar have figured in SDG13 of Climate Action. Six of the seven good performing districts in respect of SDG 9 that aims to provide ample opportunities for industry, innovation and infrastructure, are from the state – Kamrup (Metropolitan), Morigaon, Hailakandi, Jorhat, Nagaon and Nalbari. The objectives of the NER SDG Index, as stated by NITI Aayog are to rank the districts of the eight states of the region based on their relative performance across the 15 SDGs (SDG 14 and SDG 17 are not relevant in the region), identify critical gaps and challenges in performance and achievements to strategise necessary corrective measures so that suitable interventions can be undertaken to iron them out, promote healthy competition among the States towards achieving the goals, create a platform for collaboration and enable districts to learn from the good practices of their peers and identify data gaps in the statistical system of the States and the sectors in which robust and more frequent data collection needs to be instituted.

Based on the score, each district is categorised into one of the four categories of Aspirant (score of 0-49), Performer (50-64), Front Runner (65-99) and Achiever (100- achieved the target set for 2030). All districts in Sikkim and Tripura have been categorised in the Front Runner category while 23 districts in Assam fall in this category. The disparities among districts within a state as well as among districts in the region call for states prioritising development goals based on NER SDG rankings. The dashboard will the State government as well as Autonomous Councils in reviewing the resource allocations under various heads of the state budget keeping in mind the performance of the districts in respect of achieving the SDGs. Monitoring and evaluation play the crucial role of ensuring that implementation of development schemes and projects are progressing as intended and in making a course correction if deficiencies are observed.

The state cabinet decision that ministers will review the performance of two districts while going to a cabinet meeting held in a district headquarters and two districts on their way back is a welcome move, but the outcome of such review will produce more results if the ministers and officials make optimal use of the NER SDG rankings and dashboard to identify the gaps. The challenge, however, is to ensure that the primary objectives of these meetings do not get lost in optics of refurbishing government offices, beautification of roads near the Cabinet meeting venue and attention of the government and district authorities concerned are more focussed on development priorities for the entire district. Expediting the preparation of the Assam SDG

Dashboard to make available more elaborate development indicators for each district should get more priority to ensure that the state can achieve all SDG goals by 2030.

Assam: Fishermen struggle to survive as state's largest wetland shrinks away

<https://india.mongabay.com/2021/10/fishermen-struggle-to-survive-as-assams-largest-wetland-shrinks-away/>

"When the night's darkness descends over the waters of Son Beel, the largest wetland in Assam and the second largest in Asia, Rotish Das, 33, sets out to catch fish in his boat. He fishes in the placid expanse of Son Beel through the night and sells his catch the next day, at a bustling fish market — the Kalibari bazaar, a few kilometres away. The catch that once earned him 500 rupees a day, has now dwindled in volume drastically. The declined stock of carps, prawns and catfish draws him a little more than 150 rupees daily, which is not enough to go around the year. "Earlier I would catch the same quantity of fish both during the day and the night. Casting a fishing net weighing about 10kg doesn't guarantee a decent-sized catch, whereas a 5kg net would suffice before. Fishes like Ilish (Hilsa) and Chapila (Indian river shad) are not available anymore," says Rotish, the resident of Bagantilla, a village on the southern bank of Son Beel. The wetland is spread over more than 3,000 ha in Assam's Barak valley and is fed mostly by the Singla river, originating from the hills of Mizoram. The northernmost part of the wetland drains through the outlet Kachua into the river Kushiara in Bangladesh, after traversing a length of 19.3 km.

A dam constructed in 1954 on Kachua was replaced by a lock gate to enable navigation and migration of fish. Home to at least 69 different species of fish, the veritable paradise supports rich birds as well as other vegetation in the region. Joykumar Das, another fisherman, from Saija Nagar, a village on the eastern bank of the wetland, resonates a similar loss. His monthly income from fisheries would earlier earn him 10,000-12,000 rupees each month. Now, the income has dwindled with the business he refers to as "netting" or raking large unsparing synthetic nets over the wetland's waters. These fishing gears are banned by the government and their use could get him and his fellow fishermen, in trouble with the authorities, according to Sahidul Islam Laskar, a civil rights activist based in Barak valley. However, Joykumar barely gets by with his small catch totalling a daily income of 300 rupees or less, which amounts to 6,000 or 7,000 rupees in a month. Issues affecting Son Beel For hundreds of years now, the lifestyle of these fishermen has been shaped by the lifecycle of the wetland – brimming with water during the rainy seasons and drying up during winter. They practiced fishing when the wetland had water and cultivated buro, the local paddy, when water was scarce. The fishermen belong to the Kaibarta community who migrated to Assam's Barak Valley from Bangladesh after the Partition, settling in villages on the banks of Son Beel. There are over 30,000 Kaibarta families solely dependent on the wetland for their livelihood. Most of them are masterful boatmen and fishermen, who started

engaging in agriculture only later. But a shortage of rainfall for over four years, has minimised the wetland's water supply. Rotish recounts how at one time water would overflow the paddy fields during the harvest season.

Now, rains are delayed by two months, he says. "Owing to the change in rain patterns, the water requirement for the aquatic and terrestrial ecosystems for which wetlands act as a medium, is not met. This leads to them slipping away," explains Jayaditya Purkayastha, a leading herpetologist based in Guwahati, Assam. A 2012 study showed a reduction of 31.58 percent of the total annual rainfall between 2004 and 2008 in the Barak Valley region. As climate change and anthropogenic activities threaten the wetland, fish productivity remains a distant memory for the fisherfolk. The upstream migration of Hilsa from the downstream rivers of Bangladesh, has stopped altogether. The effects have been devastating for Rotish and Joykumar, who rely on rice distributed as ration instead of their homegrown paddy. Rotish observes a 70 percent decrease in his paddy production, which he blames on the excess silt accumulated in the wetland. Lamenting at the loss of food security, he comments, "We would pride in feeding our guests fish from the beel and paddy from our fields. Now, that is impossible."

In Son Beel, overfishing, upstream pollution and agricultural encroachment, are destroying the sanctity of the diverse ecosystem. Local fishermen use gigantic gill nets with small holes – locally referred to as mahajaal, to that drag the bed of the wetland, entrapping young fishes and eggs, apart from the usual catch. "Unlike the traditional fishing nets, these mosquito-net lookalikes trap more life than they are supposed to do," says Anwaruddin Choudhury, an ornithologist and a former bureaucrat. These substandard fishing methods stress fish populations, which are a critical source of food for the nearly 150 bird species thriving in the region, as documented by Anwaruddin. Among the many birds he marked during his sightings in Son Beel, are the openbill stork, the lesser adjutant stork, the golden plover, the whiskered tern, the great cormorant, the Indian cormorant, the common cormorant, the Brahminy kite, and the black redstart. However, most of these birds have shrunk in numbers, either due to poaching or habitat destruction and are rarely spotted now.

"Encroachment is taking place on the small islands in Son Beel dotted with hijol trees (*Barringtonia acutangula*) that serve as habitats for migratory birds. These trees standing in water are being felled sizably," says Manabendra Dutta Choudhury, a professor at the Department of Life Science and Bioinformatics, Assam University, Silchar. "The beel largely occupied by the government and shared by the fisherfolk, is losing swathes of wetland to buro crop cultivation. Bundhs are created for capture fishing whenever the beel is found untouched," he elaborates. The increasing deforestation around the hills through which the river Singla, Son Beel's primary inlet flows has choked the wetland with silt, leading to eutrophication; significantly reducing the size of the wetland, adds Manabendra. As a result, the wetland is slowly disappearing. A study from

2014 on fish diversity in the Barak Valley, captured a Geographical Information System (GIS) mapping of the water area. A total of 3,593.6 ha shrunk over a span of 100 years, from 1880 to 1980.

Wetlands have been known to conserve tons of carbon every year through their stored biomass, in soil and land, apart from acting as buffers absorbing silt/nutrients during floods. “Wiping them out, transforms them from carbon sinks to emitters of carbon”, points out Purkayastha. The challenges in putting Son Beel on the map There are many hurdles to conserving Son Beel as a wetland, right from drumming up funds and political will, to changing the unsustainable fishing methods. “Due to limited manpower resources, the concerned authorities are unable to enforce their mandates, such as stopping illegal fishing and spreading awareness”, says Laskar. Some experts say they believe that declaring the wetland as a Ramsar Site of Wetlands of International Importance, is imperative for its conservation. Researchers Moharana Choudhury of Voice of Environment, a non-profit working on environmental protection, and Deepak Kumar of the United Nations Development Programme, estimated the monetary value of Son Beel from a minimum of \$88 (6,530 rupees approximately) per hectare peryear to a maximum of \$29,716 (22,04,537 rupees approximately) per hectare per year in their study Valuation of Ecosystem Services and Benefits of Son Beel Wetland in Assam, India conducted from 2016 to 2018-19.

“The study looked into the economy of aquatic resources, fisheries, net making and eco-tourism necessary to improve the socio-economic conditions of the marginalised, thriving on the peripheries of the wetland,” Choudhury explains. Others question if a simple designation would solve the issues of the wetland conservation. “The situation of wetlands such as Deepor Beel in Assam, remains grim, even after the declaration as a Ramsar site. Unless the stakeholders, especially the fisherfolk are convinced about saving the wetland by fishing sustainably, instead of indulging in lucrative profits, and the government introduces better policies, the conservation will remain a distant dream,” Purkayastha concludes.

Assam: On the world’s largest river island in Assam, floating farms are boosting flood resilience

<https://scroll.in/article/1005271/on-the-worlds-largest-river-island-in-assam-floating-farms-are-boosting-flood-resilience>

"For the past few months, Rombha Payeng has had fewer worries on her mind. The 33-year-old homemaker and farmer is able to feed organic vegetables to her two young daughters. Not long ago this was an inaccessible luxury for the family. Payeng lives on Majuli, the largest river island in the world. Majuli, in the northeastern state of Assam, is a 553-sq-km island in the Brahmaputra River. Around 1,70,000 people belonging to 11 ethnic groups live on the island. Between 1914 and 2016 Majuli shrank by nearly 30%. Over the past 50 years soil erosion,

amplified by annual flooding, has accelerated, robbing the picturesque island of much of its area and vegetation, and wreaking havoc on livelihoods. The monsoon is particularly difficult. “We are completely cut off from the rest of the world for nearly four to five months every year when the floodwater submerges our homes and fields, leaving us marooned on the island,” said Payeng. “Luckily, the bao paddy [flood-resistant red rice] that grows here helps us to run our livelihood. But the vegetables grown are washed away in the floodwater.” “My two daughters were not getting a healthy diet,” added Payeng.

“Fortunately, the situation has changed now, as my daughters ate ladyfingers [okra] and other vegetables for the first time this year,” she said, pointing to rafts laden with beds of crops floating on the pond near her stilt house. Floating agriculture Irshad Ali, the sub-divisional agricultural officer for Majuli, told The Third Pole that around 9,270 hectares of land is cultivated on the island, with 31,420 people dependent on this for their livelihood. About 18% of Majuli was affected by flooding in 2017. In 2019, around 1,875 hectares of cropland were damaged due to floods. In response, the South Asian Forum for Environment, a non-profit working to advance sustainable development, has introduced new methods to help people cope with the increasing unstable climate. In 2017, it introduced floating agriculture in Majuli. “Initially, we adopted a hydroponics [where plants are grown in nutrient-rich water instead of soil] method of farming that involved floating rafts for cultivation,” said Chiranjeet Chatterjee, the director of programmes at South Asian Forum for Environment. Vegetables were grown in water-soaked, non-biodegradable sponge material on rafts made of bamboo.

“Farmers were able to grow some vegetables but it was not a long-term solution,” Chatterjee explained, because the rafts tended to rot. In April this year, South Asian Forum for Environment introduced rafts made of bamboo that are kept afloat using drums, “which are more durable”, Chatterjee said. Instead of growing plants in sponge beds, vegetables are now cultivated in grow bags on the rafts. These are filled with compost, coco peat, biochar, sawdust and organic fertilisers. As well as being watered manually by the farmers, solar-powered pumps provided by the South Asian Forum for Environment water the plants. These pump water up from the pond and into the grow bags, through an irrigation system installed on the platform. The grow bags retain moisture and minimise water loss – holes in the bags mean that excess water can drain away into the pond. The entire structure is covered with nets to stop birds from eating the harvest.

As the platforms rise with the water level, flooding does not damage produce grown on them. In conventional agriculture, crops are washed away or rot from being waterlogged during flooding. Saben Kalita, a field coordinator at the South Asian Forum for Environment, said that each platform can accommodate 25 grow bags. Currently, there are 55 of the new design of rafts being used by farmers on Majuli. In some areas, fish farms are set up in the same body of water as the

floating vegetable bed. “The construction of each floating tray with the introduction of fish culture in the same water body costs around Rs 20,000,” Kalita said. “The method is cost-effective in comparison with traditional agriculture with no requirement of tilling and sowing. Besides, the solvent [compost] can be recycled for reuse too.” The floating beds are less labour-intensive than field agriculture, which requires digging, planting and irrigation. Improving food security Bolin Payeng, Rombha’s husband, said he was pleased with the new floating farm beds. “The floating beds have long-term durability and help us to grow vegetables of our choice and feed them to our families, besides selling them in the market.

We are happy to taste vegetables on this island that remains submerged with water [for large portions] of the year.” “We have cultivated around 25 kg-30 kg of king chilli... along with 45 kg-50 kg of ladyfingers and bottle gourd from 20 trays this year,” said Jonaram Payeng, another farmer in Majuli (not a relative of Rombha Payeng). “The vegetables are fresh and completely organic. We consumed most of them and sold the rest. The priority is to offer healthy food to our families as we hardly grow vegetables here because of the floods.” Jonaram also grows flood-resistant paddy on his 0.40 hectares of land. He said that as the monsoon becomes more unpredictable, more farmers might need to turn to methods like floating farm beds. “We depend on bao paddy for our livelihood and the floods are an important phenomenon as the paddy grows under the water, but there have been no major floods this year,” Jonaram said. Ordinarily, flooding prevents farmers from growing vegetables. But this year the opposite has happened: a lack of rain has damaged the paddy crop. Prior to a wave of flooding in Assam that started at the end of August, the weak monsoon this year has meant water has not arrived when farmers expect. Until now the farmers using floating platforms on Majuli have only made small profits by selling their crops to local markets. The main use of the crops has been to help provide better nutrition to families. As the project expands, the South Asian Forum for Environment’s director of programmes Chatterjee said, there is hope for greater profits – especially as the materials needed, including the compost, can be developed locally by farmers.

Flood-prone areas The initiative has expanded to flood-affected regions in the Sundarbans in West Bengal, as well as Saharsa in Bihar in 2019. In 2020, it was also implemented in Bangladesh. “We have already trained 2,500 farmers [in total] since 2017, mostly women,” said Kalita, the field coordinator of South Asian Forum for Environment. He added that the model also allows communities to farm fish, crabs, ducks and pigs. “We have so far constructed 260 floating farm beds in India and Bangladesh.” Government officials from the state agriculture department told The Third Pole that floating farms are the future of agriculture on Majuli. “The non-profits have successfully demonstrated the use of floating farm beds for farming on the island. The government should step in and offer logistical and other support to the farmers, as setting up floating agriculture is a costly affair,” said Irshad Ali, the sub-divisional agricultural officer of the island district. “The technique is not only helpful for this island but also for low-

lying areas in other parts of the country that suffer crop loss and other damages due to floods,” Ali said. He added that his department has started another project on Majuli using water hyacinth to create floating organic vegetable beds.

“Such efforts need sustained long-term support from the government.” Arun Kumar Pathak, a retired district agriculture officer in Majuli, said: “Floating farm beds have helped [farmers] to cultivate vegetables, shrubs and medicinal plants. The water bodies that accumulate floodwater can be used for floating agriculture.” “The method encourages no-tillage and organic farming,” added Kumar Pathak. “Float-farming beds in inundated areas are irrigated with solar micro-irrigation, reducing water energy footprints.” Other benefits of floating farms are that they require less space than conventional farming and do not need pesticides.

Assam: Fishing for wealth: This entrepreneur is boosting aquaculture

<https://www.eastmojo.com/assam/2021/09/12/fishing-for-wealth-this-entrepreneur-from-assam-is-boosting-aquaculture/>

"The aquaculture industry in India is one of the largest in the world, experts say. While you may be tempted to look at those at the helm of affairs when it comes to relevance in the international fish market, the real MVPs (minimum viable product) behind this impressive statistic are local farmers. Locals have for a long time been the backbone for fish farming in India and if the industry is going to break any more grounds, this is where attention should be focused; there has to be a total revision of all methods and mechanisms from production all the way to the distribution of fishes. One entrepreneur bridging the gap for these local fish farmers is Morigaon-based Razaqul Islam, the founder of Aqua Blue Global Aquaculture Solutions. Like many other modern companies, the introduction of scientific methods to all kinds of farming is central to Aqua Blue Global Aquaculture Solutions' existence. Their overall aim is to increase productivity by 100% and, as a result, improve its benefits economically. India ranks third in fisheries production, and second in aquaculture. Fisheries alone has employed 145 million people and contributed to 1.07% of the GDP and generated export earnings of Rs 334.41 billion as per a recent estimate of the National Fisheries Development Board. National Institute of Agricultural Economics and Policy Research reported the projected demand would go 11.80 million metric tonnes by FY21.

However Razaqul says these sectors are highly unorganized in the North East region of India, which is the reason why Assam and its neighbouring states like Nagaland, Mizoram, Meghalaya, and Arunachal Pradesh are importing frozen fish from other parts of India. “While growing up, I have closely observed great potential to advance in the aquaculture sector in Assam, which will open up employment and growth opportunities for our local farmers and fishermen. Thus I wanted to introduce scientific fish farming to the farmers which will foster rapid growth in

production volume and economic yield. We teach and encourage them to practice modern intensive fish farming, which includes designing the production unit, study of production environment and its natural fluctuations, and understanding the stressors such as pollutants, pathogens, and parasites, etc. The idea also was to support the ‘vocal for local’ campaign while unfolding the future opportunities of aquaculture in Assam,” he says. Before now, local farmers have had it rough when it came to the production and distribution of their products – working tirelessly to cultivate fish, all for small profits. But not anymore! With the modern solutions introduced by Aqua Blue Global, fish farming has become simpler and more cost effective, and farmers can now get good returns equivalent to the effort they put in.

Most farmers practice old school farming and convincing them to switch to these modern solutions may be a little difficult. To do this, the company has had to explain in detail the business model and how the simpler model is more economically beneficial for them. “The most concerning issue is the low literacy rate of the local farmers. It is quite a hassle to make them understand the scientific fish farming techniques. However, our team has been constantly trying to deliver the required knowledge in the simplest version possible. We are supplying improved quality fish seeds, fish feed, and aqua medicines to the farmers at very reasonable rates. Also, we are providing end-to-end support from nursing to harvesting, and helping them find a better market where they can sell their fish. We have set up model fisheries in almost all the districts of Assam so that farmers can come and see how they can benefit from scientific farming which includes semi-intensive and intensive aquaculture systems,” Razaqul adds. Razaqul has put it all on the line for farmers who have continued to suffer because of their strict adherence to archaic methods. It was this deep regard for premium customer service that birthed the idea for an aqua solution startup.

Today, there are several entrepreneurs that also claim to have the solution to the problems local farmers face. The difference that Aqua Blue Global Aquaculture brings to the table – compared to other companies – is a genuine interest and concern for the people with real lives and real problems. Aqua Blue Global, headquartered in Jagiroad, Morigaon, offers their services in entire Assam and also covers other North East India states like Nagaland, Arunachal Pradesh, Meghalaya, Manipur, and Tripura. Their vision is to create a ‘One shop-One stop’ solution model so that farmers don’t need to be clueless while finding their inputs. Aqua Blue Global, which started with Rs 30 lakhs investment, had a turnover of Rs 6.5 crore in the last financial year. Currently they’ve about 30 hectares of fisheries of their own. The innovative entrepreneur believes the difference is evident in the fact that he is not out to make a quick buck, but cares about improving his services to, and lives of, the locals. “Yes, the last year has been a significant year for aqua solutions startups. We have seen so many new emerging aqua solution startups in the market. We always welcome ventures with a similar vision to collaborate with us. Startups

like IIMCP-incubated Jolkuwori, Mahabahu Fisheries, Assam Fisheries, Ayat Fisheries and more have collaborated with us to plan and implement better schemes for fish farmers.

I strongly believe mutual sharing of ideas help in planning growth strategies for the future and at the same time boosts networking with people from every region possible,” he says. One mantra the company wholeheartedly follows is to keep customers happy with good quality service. “For us, customer satisfaction comes first. That is the spirit that has helped us gain so many loyal customers from all across the northeast region. More than ten thousand farmers partnered with us last year and were able to draw more benefits compared to the previous years of their business,” Razaqul says. Although there have been many challenges along the line that may have directly tested their resolve and dedication to impacting the lives of farmers and the market as a whole, Razaqul says these challenges have not deterred him in his struggle towards sustainability in farming. His impact can be measured by studying the level of growth he has been able to achieve. “We are focusing on two different aspects of growth. The first one is providing a proper knowledge base and teaching techniques of fish farming over monetary aid. The second is to generate employment. “Nowadays, people are running behind corporate jobs without even considering the opportunities in farming. Our aim is to open up the door of possibilities for youngsters to start farming on their own, an avenue with which we’ll be able to provide employment to many people,” he adds.

Despite the many stellar accomplishments all these years, Aqua Blue Global plans to take every individual part of its business even further by creating more specialised units targeted at addressing the problems they face. For Razaqul, the goal is to build an online hub for farmers to interact and share ideas on how to move the industry to greater heights. “I am more than happy to announce that very soon we are launching an online ecosystem exclusively for the fish farmers, aquapreneurs, and aqua traders of India. I am positive that this will be a revolutionary step in the aqua business sector. We have also recently set up a modern technology known as Re-circulating Aquaculture System (RAS) under Aqua Blue Global Aquaculture Solutions Private Limited in association with the department of fisheries, government of Assam,” he concludes.

Assam: Modern Integrated Fish Landing Centre’ to come up in Cachar

<https://www.sentinelassam.com/north-east-india-news/assam-news/modern-integrated-fish-landing-centre-to-come-up-in-cachar-554019>

"An Integrated Fish Landing Centre will come up in Cachar district at an estimated cost of Rs 25 crore under Pradhan Mantri Matsya Sampada Yojana (PMMSY). Additional Deputy Commissioner, Cachar, Kamal Baruah visited the fishery proposed project site along with other officials of line departments such as PWD (Road), PWD (Building), APDCL, PHED, DAO, BDO, Veterinary, Soil Conservation, WRD, etc for detail feasibility study of the site located at

Silcoorie Ghungor under Borjalenga Block in Cachar on Tuesday. This place is identified by the Fisheries department, Cachar for a Modern Integrated Fish Landing Centre worth Rs.25 crore under PMMSY in order to provide various facilities to the fishers and fishermen community which will be a notable fisheries project for the welfare of fishing community as well as fish farming community. Minister for Fisheries, Parimal Suklabaidya at whose initiative the new project is coming up, said a well-developed fishing hub can look into the proper development of all the connected facilities in terms of quality assurance of the landings, its hygienic handling, pre-processing, packing, transportation and marketing.

“Proper availability of infrastructure and accessories, including quality ice, dry ice, and cold slurry units would help maintain the quality of the landed catch,” he quipped. Suklabaidya pointed out that fish being a highly perishable commodity, requires well-developed, efficient landing and handling facilities and distribution channels. “The new ambitious project of the Fisheries department is a right step towards the promotion of responsible fisheries. It will help in improving the infrastructure facility, maintaining the quality of the landed catch and thereby improve the overall value of fish and fish products,” he said. Sharing his reaction, Additional Deputy Commissioner, Baruah said, “Nowadays fishery business is not confined within a particular community as it is being taken into industrial line due to development of recent technology and has become an employment generation avenue.” Further elaborating on the project taken up by the Fisheries department, ADC, Baruah said, “As the project site has vast potential, all the technical departments are requested to co-operate and provide valuable inputs for making the fisheries project a successful one since the people of the entire area as well as other parts of the district will be benefitted by this project.

Ultimately a fisheries hub will come up with the fishing community and fish farmers getting proper facilities with hygienic condition for improving their socio-economic lot. Speaking on the occasion, District Fisheries Development Officer, Rafiqul Haque said, “The proposed project will come up at Silcoorie, Ghungor of Borjalenga Block under PMMSY and it will offer all kinds of facilities such as integrated fish auction hall, wholesalers and retail outlet, ice plant, cold storage, parking facilities, water supply, etc to the people involved in fishery business. More than 1,000 people will be running their businesses daily at this centre by availing all kinds of modern facilities. There will be a sea change in the fisheries sector.” Haque revealed that around 10-15 tonnes of fish will land at the centre whose market value will be worth Rs.20 lakh, stated a press release.

Assam: The deterioration of the lake harmed the livelihoods of several hundred fishers who have depended on it for generations

<https://www.downtoearth.org.in/news/water/how-assam-s-deepor-beel-is-perishing-from-concretisation-waste-dumping-78870>

"Deepor Beel, a perennial freshwater lake and the only Ramsar site in Assam, has shrunk around 35 per cent in size since 1991. It is now spread across 4,014 hectares. The waterbody once attracted exotic birds and tourists and offered livelihood to the fisherfolk. But heavy encroachment for railway line construction and other development projects as well as proximity to a waste dumping yard have robbed it of its ecological health. Situated on the outskirts of Guwahati, the state capital, the wetland shelters over 200 species of birds, of which 70 are migratory. Threatened habitats, littered lake A 24-hectare garbage dumping yard lies to the east of the lake in Boragaon. Birds and animals feed on rotten flesh and waste from the site, littering the waterbody and threatening their lives. The lake was listed as a biologically and environmentally threatened habitat in November 2002 and declared a Ramsar site. Three years later, the dumping yard came up in its vicinity. Huge mountains of solid waste are turning the picturesque lake into a stinking drain, said CHD Phukan, a Guwahati-based environmentalist. The biodiversity has been impacted but the authorities have made no efforts for its revival, he added. "The wetland is dying and nobody is bothered."

The expert attributed the pollution to lack of waste segregation at the origin. Guwahati generates around 550 tonnes of waste every day and inadequate measures of its disposal have been taking a toll on the health of the beel. Endangered species such as greater adjutant stork in Assam have been forced to feed on toxic waste and dead carcasses instead of fish, rats and snakes, its usual prey. This further threatens the existence of these species. In 2017, 26 greater adjutant storks were found dead in the garbage dump raising an alarm. Following this, the National Green Tribunal had issued a notice to the Assam government seeking an explanation. Concrete factories, houses and warehouses built illegally on the wetland damage the ecology. The laxity of the administration in taking action against culprits sustains the menace, experts pointed out. In 2014, the then Assam Chief Minister Tarun Gogoi inspected the lake and ordered immediate measures to remove encroachments from the notified site. But not much has been done to conserve the waterbody and land sharks continue to make inroads.

Rail track impacts wildlife A railway line passing through the bird sanctuary has also been posing a danger to the wildlife in and around the lake. The Rani Reserve forest and Garbhanga hills to the south of the lake, are the habitat of the Asiatic elephants. But the broad-gauge single railway line has served as a death bed for several elephants over the years. At least 14 jumbos were killed crossing the railway track till 2014 between Rani Reserve Forest and Deepor Beel. Four corridors are used by the elephants to cross the track for bathing and feeding on the aquatic plants in the wetland. In 2019, the railways had decided to construct a double railway through the lake. The project was stalled after stiff resistance from environmentalists and locals who stressed that the move would increase the mortality rate of wildlife. The construction could have increased the death toll of elephants and other wildlife species, besides increasing the human-animal conflict, according to Narayan Sharma, assistant professor, Department of Environmental

Biology, Cotton University. He did an extensive study on the lake in 2018. “The wetland is already on a ventilator and any further disturbance would push it to extinction,” he added. In June this year, the state government proposed the realignment of the single railway line.

Lost livelihoods The deterioration of the lake harmed the livelihoods of several hundred fishers who have depended on it for generations. The government has banned fishing in the core area of the lake. Many from the finishing community have been forced to migrate, said a local fisher. “The government has turned a blind eye to the encroachments and pollution in the lake while solely blaming the fishers for its destruction.” The locals use traditional methods of farming, which are not dangerous for the wetland, said Sharma, adding that their surveys have shown the extent of impact on fisherfolk. Discharge from a local oil refinery has been further polluting the water and inducing kerosene-like smell in the fish, he added. The local population have complained to the administration about the stench from the polluted lake but to no avail. Government officials, however, claimed they were taking stern action against encroachers. “The state government is serious about saving Deepor Beel and have already urged the railways for the realignment of the railway line to save wildlife,” said a senior government official on condition of anonymity. The authorities are also planning to segregate waste at the source to ensure it doesn’t pollute the lake, he added.

Assam: Guwahati City’s only wholesale market of imported fish in the doldrums

<https://www.sentinelassam.com/guwahati-city/guwahati-citys-only-wholesale-market-of-imported-fish-in-the-doldrums-552220>

"The only wholesale market of fish (imported from other States) in Guwahati is presently in the doldrums following the COVID-19-induced lockdown since March 2020 — besides many other factors. Its brunt is being felt by both the wholesalers and the retailers. However, this is despite the fact that the demand for fish (of various varieties) has not at all slowed down. In fact, there has been a noticeable rise in the demand for fish during this typical pandemic time when the people were compelled to stay indoors as per the Corona SOPs (Standard Operating Procedures). The market was hit the hardest when it remained closed for four to five months during the initial phase of the Corona-induced pandemic. Its effects are being felt today too. What is more, the pandemic situation forced many retailer fish sellers to leave the business. This has also adversely affected the daily as well as the overall business in the sector.

Mentionably, both the wholesalers and the retailers enjoyed roaring business in the pre-Corona days. This only wholesale imported-fish market in the 'Gateway to the Northeast' — under the GMC (Gauhati Municipal Corporation) — is run by the 'Brihatar Guwahati Paikari Maas Besa Kina Samabai Samity Limited'. Located at Lakhara, the market complex has 59 stalls; even as 35 more stalls are being constructed in the proposed extension part of the market. Following Court's

order in 2015, this market was shifted from the Borsola Beel area — opposite the SAI (Sports authority of India) Stadium in the New Field Complex in Paltan Bazar. Talking to The Sentinel here on Friday, the Samabai Samity's secretary — Kajal Paul Chowdhury said, "Before the pandemic in 2020, 10 to 14 trucks loaded with fish of various varieties from Andhra Pradesh. However, for the last 24 months, the import quantity has drastically come down. Presently, only five to six trucks arrive Guwahati daily.

"We used to supply the imported fish to many of our retailers on credit. However, the majority among such retailers are yet to refurbish their balance amounts. Many retailers have even left the business as they have been facing loss, and were finding it rather tough to make the both ends meet. This has sharply hit us below the belt. The punch was the hardest during the first phase of the pandemic." Providing details, Paul Chowdhury added, "The main issue is that though we provide the imported fish to the retailers on credit yet we must pay on a daily basis to the companies or firms that supply those items. If we fail to do so even for a single day, the firms in Andhra Pradesh, not only stop their consignments but also of the other fish-supplying firms of that State. This impasse continues till we clear our dues." Paul Chowdhury further said, "We didn't get any relief package from the government during the initial phase of the pandemic. Owing to the COVID-19-related SOPs (Standard Operating Procedures) during the second lockdown, we could not transport our fish to the markets as the drivers of the vans and other small goods-carrying vehicles faced issues from the administration. Many were fined for various reasons. And, this factor seriously hampered the business... the drivers and also the vehicle owners started giving a second thought on their business related to the imported fish market. Many even withdrew from the sector.

"The business has also come down as the retailer fish sellers now procure very limited items. This is because, they cannot sell fish in the evening owing to the COVID SOP." When asked if the Guwahati and suburb markets are being captured by the retailers of local fish varieties, Paul Chowdhury said, "The wholesale selling points of local fish are at Uzan Bazar and Hatigaon Bhetapara. I don't think that the sellers of local fish have been benefitted due to this typical COVID situation. The selling hours are the same. We look forward to the new SOPs from September 1; and expect good days hoping that we will get to feed the evening markets then. We further expect that the communication issues will also get resolved after the new set of SOPs are announced." With reference to the imported fish consignments from other States, the secretary of the Samabai Samity Limited enumerated, "A truck carries 1,200 kg of fish. Some consignments also reach Guwahati via the rail route. On a daily basis, such import of fish of different varieties are from Delhi, Kanpur, Kolkata, Secunderabad, and Indore. "However now, there is no import of the sea fish varieties from Goa and Kerala due to a number of reasons besides the COVID-19 pandemic scene.

""Our wholesale market caters to the customers in Kamrup (M) and Kamrup (rural) districts and also Meghalaya. Some of the imported fish reach our market in Guwahati also from Goalpara. In Assam, our imported fish consignments are transported to the markets in Rangia, Mangaldoi, Chaygaon and Byrnihat — from where a significant portion gets transported to the various selling points in Meghalaya."" He added, ""Wholesale fish markets are located in Goalpara, Barpeta, Nagoan, Tezpur, Tinsukia, Silchar, and Karimganj. The presently imported fish varieties are Rohu, Bhakuwa, Kos, and Rup Chanda."" The prices of imported fish in general have come down by 20 to 40 per cent, pointed out Paul Chowdhury.

Assam: Govt mulls creating 2,000 ponds for fish production

<https://www.eastmojo.com/assam/2021/08/27/assam-govt-mulls-creating-2000-ponds-for-fish-production/>

"Assam fisheries minister Parimal Suklabaidya on Thursday said efforts must be made to create 2,000 ponds under the Pradhan Mantri Matsya Sampada Yojana in order to make the state self-sufficient in fish production. The ponds will measure one hectare each, an official release said. Suklabaidya asked the Fisheries Joint Secretary cum Director M K Debnath to identify the required area of land in consultation with deputy commissioners and district fisheries development officers. The minister sought a detailed report on the progress of the work within two months. Debnath said a preliminary survey has been carried out regarding availability of land in different districts for the proposed ponds.

Assam: Rehabilitate affected fishermen around Deepor Beel

<https://www.sentinelassam.com/guwahati-city/rehabilitate-affected-fishermen-around-deepor-beel-551666>

"The Departmentally Related Standing Committee (DRSC) of the Assam Legislative Assembly has asked the Fishery Department to rehabilitate the families whose livelihood has been affected after 4.10 sq km of Deepor Beel was declared as wildlife sanctuary. The committee submitted its report during the recently-concluded budget session of the Legislative Assembly. The committee, in its report, said that there were 14 villages (1,200 families) around Deepor Beel Wetland. Most of these families are directly or indirectly dependent on Deepor Beel for their livelihood. More than 850 economically weak families belonging to Scheduled Caste (SC) and

Scheduled Tribes (ST) are entirely dependant on fishing at Deepor Beel for their livelihood. But, due to declaration of an area of 4.10 sq km out of the total area of the Deepor Beel as Wildlife Sanctuary, it has led to conflict of interest among various government departments and due to lack of a conflict resolution mechanism, fishermen are losing their livelihood.

The committee opined that as the Assam Fisheries Development Corporation Ltd. (AFDC Ltd) was the only management authority of the Deepor Beel, the rest of the part of Deepor Beel could be handed over to the AFDC Ltd. by the government for development and management so that the Corporation could take alternative measures of rehabilitation, food and nutrition and security of the fishermen around Deepor Beel by introducing modern practices of aquaculture and development activities. The committee also recommended the AFDC Ltd. to prepare a master plan for restoration of environment and ecology of the Deepor Beel and water retention to keep the operational area of fish, wild birds and animals along with the economic uplift of fishermen. Deepor Beel is a freshwater lake located on the outskirts of Guwahati city. It is also listed as a Ramsar site. People living in villages near Deepor Beel mostly depend on fishing for their livelihood.

Assam: Illegal sand mining a threat to the shrinking Chandubi lake

<https://india.mongabay.com/2021/08/illegal-sand-mining-a-threat-to-the-shrinking-chandubi-lake/>

"For the unsuspecting, this would appear to be any other normal grazing land. But the reality is that we are now walking on land that was actually part of the lake until just a few years ago," says Sarzen, a local guide, referring to the Chandubi lake in the northeastern state of Assam. A herd of cattle and a group of local people doing their washing chores are in a nearby stream. The lake itself seems far away. The shrinking of the famous Chandubi lake, located in the southern part of Kamrup district with Barduar Reserved Forest to its north and Mayang Hill Reserved forest to its south, has been rapid. According to a study conducted by the Assam Remote Sensing Application Centre (ARSAC), in 1954, Chandubi lake or wetland had a water-spread area of 481.19 hectares, but in 1967-68, it decreased to 392.61 hectares. In 1997, it further decreased to 203.20 hectares and in 2007, the area had become 186.52 hectares – almost 40 percent less than it was 50 years ago. The study used Survey of India toposheet and satellite imagery covering the period between 1911 and 2007. The study also noted that the depth of the lake reduced to 3 metres from 8 metres during the recent period.

At present, the lake has visibly reduced further in size and depth. Chandubi lake was formed as a result of an earthquake in 1897 when parts of land along the present Assam-Meghalaya border sank and led to the formation of the lake. Located at the foot of the Garo Hills, the lake is a biodiversity hotspot with a surrounding forest area and the Kulsi river flowing in close vicinity.

It is home to dozens of fish species including some critically endangered species such as Nandhanl and ornamental fish such as phutiki-puthi. The Kuls connection The Kuls, a southern tributary of the Brahmaputra, surrounds Chandubi lake and even has a connecting water channel (locally known as lokeiyadar) with the lake, making it a perfect habitat for the world-famous Gangetic river dolphins. The 2.5 km long spiralling channel, apart from being a migratory channel for fishes, also helps in maintaining a balance in the water level of the lake. The dolphins often frequent the confluence of the lokeiyadar and the Kuls river, known as the lokaiyamukh, to feed on the migratory fish. But recently, according to local residents, in the places in the river where earlier more than 20 dolphins were sighted, at present, only 2-3 dolphins are being seen. Illegal sand mining While Chandubi lake's close proximity to Guwahati is a boon for tourism, it has its demerits too. Rapid urbanisation so close to an ecologically sensitive biodiversity hotspot impacts it negatively.

The demand for sand from the Kuls river has increased over the last few years. What started decades ago, as a small enterprise for the employment of local youth, has now taken a mammoth form with hundreds of illegal sand mining operations running in the Kuls river. "The peak mining season also coincides with the fish spawning season which is hampering the fishing grounds in Kuls river. Due to decreasing fish production in the river, a major shift in the livelihood of the mainstream fishing communities towards sand mining has been observed in Kuls, during my study period, which is further increasing the pressure on the river," said Sunny Deori, Senior Biologist at Wildlife Institute of India, Dehradun, who has done her Ph.D. research on Ganges dolphin ecology in Kuls river. Rampant mining using motor pumps has led to excessive draining of the riverbed and as a result, the normal flow of water in the river has also been affected.

"This has led to the water level of the Kuls river becoming significantly low and at a time when water from the river should have flowed into the Chandubi lake, the reverse is happening. Water from the already shrinking Chandubi lake is flowing out through the connecting channel into the Kuls river," says Sarzen R. Mego, a local environmental activist. According to a study published in the WWF Review 2018, removing sediment stores and altering sediment transport, which can occur with sand mining, will promote physical changes in a river channel. In rivers with deeply incised channels, greater water volumes are required before rivers overtop their banks and hence floodplain inundation occurs less frequently. As a result, floodplains are no longer able to fulfil their important ecological and social roles. The impacts of the incision may spread beyond a river's banks. By deepening the base of the river the banks and surrounding permeable areas drain to this lowered level, hence the groundwater level can also decrease, affecting groundwater availability and recharge.

Demands for a dam Some locals are now demanding that a dam should be built at the point where the connecting stream (lokeiyadar) merges with Kulsī so that water from the Chandubi lake does not flow out through the channel into the river. “Unscientific sand mining in Kulsī is a major reason as the Kulsī river has become deeper and water from the lake is flowing out through the connecting channel. A dam needs to be built on the channel so that water outflow stops from Chandubi lake,” said Matiram Rabha, a local artisan and environmental activist from the Chandubi area. But building a dam to prevent water from the lake flowing out into the river has its own demerits and might not be a sustainable alternative according to experts. “Blocking the connectivity with the mainstream river channels by building dams will actually cause floods. With the disappearing connectivity of rivers with wetlands and lakes, the prey resources of Ganges dolphins will further reduce not only in rivers but also in the wetlands because the entire process of hydromorphology is connected to each other.

The life history of many fishes is associated with such migrations from lakes to rivers and back or else the population will decline,” Deori said. “The plankton abundance (lower trophic level of aquatic system or the food source of fishes) is decreasing and significantly less, compared to Brahmaputra or Subansiri which are other hubs of Ganges dolphin in Assam,” she further added. Chandubi lake is getting shallower “There are multiple reasons for Chandubi lake drying up. One reason being the growth of aquatic plants and weeds in the lake because of which the lake itself is getting shallower and water holding capacity of the lake has reduced. The lake needs to be cleaned but the government has not done anything in this regard so far,” said Rabha. “Also there used to be multiple underground water streams acting as feeders for the lake which have lost connection after the deposition of sediment in the lake and it becoming shallower,” he further added. The growth of wild vegetation in the lake and the surrounding catchment area according to the experts is a major issue and needs to be addressed.

“If the catchment area is not properly conserved then sediment deposition happens in the lake and thus the water holding capacity of the lake lessens. Wild vegetation has grown in the lake since it has got a platform of sediment to grow,” said Jayanta Kr Sharma, an independent researcher and freelance environment consultant based in Guwahati. “Catchment area treatment in the short term can be done by installing sediment traps at the points from where water from the surrounding high areas inflows to the lake. This can be done with locally available materials with community participation. Most of the wetlands are managed by various government departments but a community-based approach in an institutional way is not seen and it has become the need of the hour,” he further added.

Assam: Fish worth Rs 5 lakh killed by miscreants in Jamugurihat

<https://www.sentinelassam.com/north-east-india-news/assam-news/fish-worth-rs-5-lakh-killed-by-miscreants-in-jamugurihat-548957>

"Miscreants killed fish worth Rs 5 lakh at Jamugurihat. According to information, the fish in the fishery of Panchajanya SHG, Jamugurihat were allegedly killed by miscreants by adding poison in the water of the fishery on Friday night. The SHG mainly deals in fish. The members of the SHG have lodged an FIR at Jamugurihat PS in this connection.

Assam: Wetlands need protection

<https://www.sentinelassam.com/editorial/assam-wetlands-need-protection-548093>

"The green signal given by Union Home Minister Amit Shah to the North East Space Application Centre (NESAC) and the Indian Space Research Organization (ISRO) to conduct a joint study during the monsoon on the scope of diverting the water of the Brahmaputra to the 5902 sq km wetlands in Assam which cover over 5900 sq km area, is very big news. Assam's both valleys comprise a large number of wetlands – fresh-water lakes (beels), ox-bow lakes (era-suti), marshy tracts and pukhuris, which together constitute an amazing and unique ecosystem. Leaving aside the area occupied by rivers, Assam has over 3,500 wetlands as identified by Assam Remote Sensing Application Centre a few years ago. Of these again, 861 are ox-bow lakes or cut-off meanders (era-suti). All these, in addition to the several hundred marshlands, had originally provided vital space to the rising waters of the Brahmaputra, the Barak and their 100-odd tributaries during the monsoon months. But with time, a sizable portion of these wetlands have been encroached upon, mainly by the migrants of erstwhile East Bengal or East Pakistan and present-day Bangladesh.

In urban areas like Guwahati, Jorhat, Tinsukia, Bongaigaon, Nalbari, Nagaon, Morigaon and Silchar etc, rapid and unplanned urbanization, coupled with encroachment by land-hungry indigenous people have led to such a situation that there is no space left for the rain-water of residential areas to flow out. In Guwahati, the rapidly deteriorating status of Deepor Beel and the impending death and disappearance of Barsola Beel, Sarusola Beel, Silsako Beel and Bondajan are enough to comprehend the situation. The unfortunate story in Assam is that successive governments, public leaders, political parties, intellectuals, NGOs, academic institutions and universities – all have miserably failed to look at the wetlands of the state with due seriousness and urgency. They have all failed to realise the importance and positive contribution of wetlands towards the natural ecological system in particular and overall human development in general. There is little appreciation among the educated section in Assam that apart from providing space for diverse life forms, apart from fish, fuel and fibre, apart from trapping pollutants and removing toxic residues, these wetlands also help in reducing flood intensity by storing surface water.

The Ramsar convention held in 1971 in Ramsar city of Iran is said to be a landmark event in the history of mankind in modern times for wetland conservation. Among all countries of the world,

the Netherlands has set one of the best examples of arresting systematic degradation of wetlands and conserving them. Covering 16 per cent of the globally important wetlands, more than half of the land of the Netherlands is today reclaimed wetlands. Among the states of India, Assam probably can claim to be a state of wetlands. But then, there is only one Ramsar Site in Assam, that being Deepor Beel, which is probably the most threatened wetland in the entire country. It is however heartening that Assam Chief Minister Dr Himanta Biswa Sarma has shown keen interest in protecting the wetlands and exploring the possibility of utilizing them for flood cushioning during the monsoon months by diverting excess water of the Brahmaputra to them. It is also very important that the North Eastern Space Applications Centre (NESAC) – a joint initiative of the Department of Space (DOS) and the North Eastern Council (NEC) – has been roped in to conduct a pilot project in this regard. NESAC has already prepared a river atlas of Assam, in which all the major and minor rivers entering Assam have been mapped. In addition, NESAC has also prepared land resources inventory maps of Assam, which cover mapping of land use land cover, erosion areas, drainage, and water bodies.

Needless to reiterate, land and water resources are the keys to attain food, water and environmental security, and Assam is lucky that the man at the helm of affairs now understands and appreciates these aspects with due seriousness. What could probably be also launched alongside the proposed pilot project is a systematic drive to evict without any consideration all kinds of encroachers from all wetlands, so that more space could be created for the Brahmaputra and its tributaries to push in excess water during the monsoon months.

Assam: Rs 10-crore gene bank to boost Assam fish yield

<https://timesofindia.indiatimes.com/city/guwahati/rs-10-crore-gene-bank-to-boost-assam-fish-yield/articleshow/84311878.cms>

"Assam has set a target to increase fish production to five lakh metric tonnes by creating a gene bank worth Rs 10 crore, said fisheries minister Parimal Shuklabaidya on National Fish Farmers' Day on Saturday. Recognising unmatched hardships and perseverance of the farming community, Suklabaidya thanked the farmers for adopting latest technologies like Biofloc and Cage Culture to increase production. "Assam is making steady progress in the fish farming sector since 2016 with production attaining 3.93 lakh metric tonnes. The fish production would increase up to five lakh metric tonnes with the creation of the gene bank, for which the government has spent Rs 10 crore," the minister said at Jungal Balahu Fish Farm at Raha in Nagaon district on Saturday. The state government is implementing the five-year Gene Bank for Indigenous Fish (GBIF) project. Assam is the first northeastern state to attain self-sufficiency in fish seed production with 951.9 crore fish seed fry in 2019-20, and it is supplying these to the neighboring states. The project, which is being implemented through the College of Fisheries,

Raha, under Assam Agricultural University, aims at conserving germplasm and restoring Assam's endangered fish species.

“Unlike in the past, fishing is no longer a neglected sector with Prime Minister Narendra Modi according topmost priority to this sector,” he said, adding that the led Government in Assam has been making concerted efforts to make use of the vast water resources of the state to increase fish production. Suklabaidya said many youths who have come back to the state due to the Covid induced lockdown have taken up fish farming by constructing individual and community ponds with Government subsidy. “Of the 12,000 individual and community ponds, 10,000 ponds have been constructed,” he added. Nagaon Deputy Commissioner Kavitha Padmanabhan, said the fisheries sector in the district is making good strides and the district has attained self sufficiency on the fish production front.

Assam: Asia's second largest wetland Sonbeel in Karimganj faces crisis

<https://www.sentinelassam.com/north-east-india-news/assam-news/asias-second-largest-wetland-sonbeel-in-karimganj-faces-crisis-545384>

"Sonbeel – the second largest wetland in Asia -- located under Ratabari constituency of Karimganj, is facing acute water crisis in this monsoon. It is drying and sinking, reducing the water to an unprecedented level. Such a phenomenon has not occurred in recent memory, observed the local people. Looking at this worrying scenario of the lake spread over 3458.12 hectares on land, fishermen who depend on it for their livelihood are quite flummoxed, unable to understand what next is writ on their fate. People in general are worried at the minimal supply of fish in local markets. Sonbeel is known for varieties of fishes which are not only fresh and tasty but also nutritious. Around 35,000 families have their sustenance from the fresh water tectonic lake. There are fishermen who catch fish and sell them in markets. A good number of them are boatmen who take the local and outside visitors around the scenic and beautiful lake for a view of the nature around for entertainment. Some others are agriculturists. This way or the other they live with nature.

The gradual sinking of water quite naturally has raised the question about the very existence of the lake. Various species of fishes of the lake are endangered due to rise in toxic level and their shrinking habitats. According to Dr Debashis Kar, Professor of Life Science, Assam University, Sonbeel is home to 69 species of fishes, belonging to 49 genera, 24 families and 11 others. 84.2% of them are of fresh water group and rest of the peripheral class. Chief Minister Himanta Biswa Sarma has already announced to make Sonbeel a tourist resort and include it in the map of sight- seeing visiting places like Malegarh as reported earlier. During winter, migratory birds flock in hundreds attracted by the aquatic creatures of the lake. Moreover, the beauty of lake is

further enhanced by trees which are locally known as 'Izoil.' From all consideration, this rich biodiversity of Barak Valley's survival depends on Rain God.

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.

Assam: Regular fishing planned at Dighalipukhuri to prevent fish deaths

<https://www.guwahatiplus.com/guwahati/guwahati-regular-fishing-planned-at-dighalipukhuri-to-prevent-fish-deaths>

"The Assam Fisheries Department plans to allow fishing at regular intervals in Dighalipukhuri to prevent a rerun of the mass death of fish reported over the weekend from the scenic lake. On Sunday, June 27, the Department fished out over 600 kgs of dead fish from the lake in Guwahati after locals reported finding dead fish floating on the surface. Officials rushed to the spot to find hundreds of dead and asphyxiated Rohu, Bhokua, Mirika, Common Carp, Silver Carp, Tilapia and other species of fish at the site. Assam Fisheries Officials probing the incident said that Dighalipukhuri has become overcrowded with big fish and their population density has become unsustainable due to the lack of fishing for over the last five years. In 2016, around 5000 fish roe

were released into the lake as part of a conservation plan. On Sunday, officials were quick to determine that the water at the lake has been stagnant for a long time due to the closure of all activities under COVID-19 containment protocols. This led to the accumulation of surface algae, preventing saturation of oxygen from the air to the water. Assam Fishery Department officials found that dissolved oxygen depletion, coupled with high organic load, were the main reasons behind the staggering fish deaths.

An official stated that the dissolved oxygen (DO) levels at the lake were found to be 2 ppm (parts per million), against the desired range of 5 to 10 ppm. After Sunday's incident, the Assam Fishery department has deployed a speed boat to run randomly over the surface of the lake during evenings and night to dislodge algae cover and increase oxygenation. Arrangements have also been made for artificial showers through fire tenders to aerate and increase oxygen levels in the water. A senior official of the Assam Fishery department told G Plus, "The investigating officials have given us long and short term suggestions to prevent such incidents in the future. We will check the pond for more dead fishes and will have to ensure fishing at regular intervals." The official refused to comment on why no such measures were taken despite the Fishery department having a conservation project in Dighalipukhuri he added, "We can only give advice. These are policy matters and follow-up steps are taken as ordered only." The department is mulling to hand over the fish culture project in the waterbody to the National Federation of Fishers Cooperative Limited (FISHCOPPED).

Assam: Drop in oxygen level kills hundreds of fish in Guwahati pond

<https://www.nationalheraldindia.com/national/drop-in-oxygen-level-kills-hundreds-of-fish-in-guwahati-pond>

"Ecological degradation, leading to depletion of dissolved oxygen level in a pond in Guwahati, has claimed the lives of hundreds of fish, Assam Fisheries Minister Parimal Suklabaidya said on Sunday. Around 400 fish species weighing around 600 kg were found dead in the Dighalipukhuri tank in Guwahati since Saturday night and the minister has directed Fisheries Department officials to visit the site and ascertain the exact cause of the mass death. An official statement said that officials, after examination of the collected samples of the dead fish and the water body, found that dissolved oxygen depletion in the tank, coupled with high organic load, were the causes behind the deaths of fish. "Fish mortality was due to sudden dip in oxygen level and high organic load in the tank. Departmental officers after examination found deaths of fish not due to poisoning but environmental degradation," Suklabaidya said in a tweet. The department, as a short term measure, increased the oxygen level in water by showering water through pump and creating wave action through mechanised boats, the statement said. The centuries-old Dighalipukhuri pond, which is more than 500 metres long, has boating facilities and is a popular tourist spot in Assam's main city of Guwahati.

Assam: Fish production rises over 33 per cent in 4 years

<https://www.outlookindia.com/newscroll/assams-fish-production-rises-over-33-per-cent-in-4-years-official/2109312>

"Assam is on its way to become self-sufficient in fish production as the state's output in fisheries in the last four years has increased by over 33 per cent to 3.93 lakh metric tonnes in 2020-21, an official said on Friday. The fish production in the northeastern state was at 2.94 lakh metric tonne in 2016-17, it said. Currently, demand for fish in the state is around 4 lakh metric tonne per annum as against a production of 3.93 lakh metric tonne. "There was a yawning demand-supply gap of 42 per cent in 2015-16 and it has come down to 0.7 lakh metric tonnes in 2020-2021," Fisheries Development Officer Pratul Deka said. Per capita fish consumption rose from 8.5 kg per annum to 11.88 kg in the state, he said.

Fish seed production has increased from 5,678 million to 9,886 million in the same period, witnessing a 74.11 per cent growth. The state currently has 12,610 ponds, covering 1,523.74 hectares and 4,029 community ponds spread over 468.1 hectares. More than 2,000 hectare of areas have been brought under new ponds, he said. According to the official, 521 fish seed hatcheries have been built under various schemes for the period between 2016-17 and June in 2021-2022. Livelihood support has also been extended to 20,000 fishermen, he said. A draft state fishery policy is also being finalised which will boost the sector in a big way, the official added.

Assam: Ponds to be Geo-Tagged

<https://www.guwahatiplus.com/assam/ponds-in-assam-to-be-geo-tagged>

"All ponds in Assam are set to be geo-tagged under the government's new scheme 'Ghare Ghare Pukhuri Ghare Ghare Maach'. Geotagging is the process of adding geographical identification data to a particular location. The decision was taken during a review meeting by Assam Chief Minister Dr. Himanta Biswa Sarma with Fisheries Department officials in the presence of Fisheries Minister Parimal Suklabaidya on Tuesday, June 15. Further, a roadmap has been drawn to increase fish feed through the setting up of new production plants and skill development of youth. An initiative to develop large tanks or ponds in every village, to be owned and maintained by the local community, has also been launched. It was also decided in the meeting to increase fish breeding and rearing in water bodies across the state.

Assam: Step up fish production to ameliorate farmers' economic lot, says Parimal Suklabaidya to FDOs

<http://northeastindia24.com/assam-step-up-fish-production-to-ameliorate-farmers-economic-lot-says-parimal-suklabaidya-to-fdos/>

"Minister for Environment and Forest, Fisheries and Excise, Parimal Suklabaidya asked the District Fisheries Development Officer and Fishery Development Officers (FDOs) of Darrang district to expedite the implementation of schemes meant to ameliorate the lot of the fish farmers. Reviewing the different Central and State schemes at the conference hall of Orang National Park, Minister Suklabaidya directed the FDOs to expedite the construction of rearing ponds, finfish hatchery, integrated fish farming, community ponds and livelihood support schemes under PMMSY to augment the production of fish and the income of farmers. "We have to increase fish production and the income of fish farmers through the various schemes meant for their welfare," he quipped. Suklabaidya said the state will have to step up fish production through blue revolution to become self sufficient and to put a halt to fish imported from other parts of the country. He said the state is blessed with innumerable ponds, wetlands and water bodies and fish of different varieties can be reared and bred. "The state has vast water resources potential and this must be harnessed scientifically to the optimum level to attain self sufficiency on the fish production front," he added. The Minister also told the FDOs to see to it that no fish is caught during the breeding season and action should be taken against the offenders. The meeting was attended by Director, Fisheries, Nirmal Kanti Debnath, MLA, Ganesh Limbu, former MLA, Gurujyoti Das, among others.

Assam: Fish out of Water: Condition of Moran Fishermen

<https://www.sentinelassam.com/north-east-india-news/assam-news/fish-out-of-water-condition-of-moran-fishermen-542152>

"The ongoing COVID-19 pandemic and restrictions imposed to contain the spread of the deadly virus have been harsh on most people. Businesses and industries and small entrepreneurs have been badly hit. In Assam's Moran, a group of 20 self-employed hardworking youths who have been earning their livelihood through fish farming is now going through very difficult times. The condition of the youths who took to fish farming is nothing better than fishing in troubled water. The youths started fish farming in 2013 and became self-reliant. But unfortunately, the coronavirus pandemic and the subsequent restrictions imposed to tackle it

pushed them into an utter helpless state. Presently, a partial lockdown, imposed by the government to check the deadly virus infection, is in place.

""After we started in 2013, we were able to earn a decent amount of money and our business has been doing well. Till last year we kind of managed. But now it has become extremely difficult. We do not have a market to sell the fish. How much can you go on by selling at discounted rates. We need proper markets to earn something. We have not been able to buy the feed,"" one of the youths said. The youths informed that they could not buy feeds for the fishes due to the partial lockdown. Selling of fish has also become a challenging task for them because of the COVID restrictions. The youths said that the ongoing situation has brought about frustration and anxiety. They have now appealed to the government for some relief to them.

Assam: Fishery officials conduct drive against illegal trading of fish in Cachar

<https://assamtribune.com/assam/fishery-officials-conduct-drive-against-illegal-trading-of-fish-in-cachar-1093909>

"Following an from the Director of Fisheries, Assam, officials of the Department, on Monday carried out drive against alleged illegal trading and marketing of fish in Fatak Bazar Fish market and other fish markets of Silchar in order to check the alleged illegal import of fish from Bangladesh and other places. Adhering to the Covid protocol, the Fishery Development Officer Dibyajyoti Debnath, Ganesh Bora, Sevok Handique and Sandip Mishra (Fishery Demonstrator) accompanied by police personel under the supervision of Mr. Rafiqul Hoque, Cachar District Fishery Development Officer in-charge carried out the drive. Fishery Development Officer Ganesh Bora informed in a release issued to the media that the in the drive a total of 109 kg of fish (Specifically Ari, boali and pabda) were seized and brought to the Sadar police station from the whole seller namely Nazir Hussain, Rana Das, Zakir Hussain and Suman Dutta which was further handed over to the concerned whole seller after proper verification of required documents. However, out of this, a 9 kg of Pabda fish was sold on auction basis with a total value of Rs 1700 as the concerned whole seller was not able to furnish any documents. Further the fish sellers were made aware about the same and strict order was given to avoid any such illegal activities, Bora said.

Assam: Lakhimpur DC prohibits catching and killing of fish

<https://www.sentinelassam.com/north-east-india-news/assam-news/lakhimpur-dc-khageswar-pegu-prohibits-catching-and-killing-of-fish-535832>

"With the onset of rainy season, the spawning or breeding season of all kinds of fish and similar aquatic living beings has started. Despite this, it has been observed that unabated catching of fishes in the district is going on using net with small and fine meshes which is against Assam

Fishery Rules, 1953. Under such circumstances, synchronizing with the order of the Fishery Department, Government of Assam, imposing ban on catching fishes as specified under Rule 23A (1) and use of net as specified under Rule 23(1) of Assam Fishery Rules, 1953 issued on March 30, District Magistrate cum DC of Lakhimpur, Khageswar Pegu prohibited catching and killing of fishes, tortoise in the district until July 31 through an order served by exercising his powers conferred under 144 CrPC. With view to control the unabated catching of fishes in the district during the breeding season and to safeguard the fishes and spawn, he declared total prohibition in using Borjal, Mohajal, Fasijal with meshes less than 7cm Bar/14cm mesh under section 23 of Assam Fishery Rules. Fishing nets having hole less than 7cm square gaps and other instruments are also banned as per the order. Further, the District Magistrate prohibited the fishing and catching of breed fish (fish carrying eggs and sperms) including Rahu, Catla (Bahu), Mrigal, Mali (Calbasu), Chithal, Kharia, Puthi (Mukusal), Gharia and Kuhu (Ganius). Prohibition is also promulgated with regard to catching and killing by any method of fish for any purpose, including consumption and selling of undersized fish of the Rahu, Catla, Bahu, Mrigal, Chithal, Kharia, Pithia, Gharia species, below 23cm in length and Mali, Gonia, Kuhu or Bhangana species, below 10cm in length. This order has come into force across the district with immediate effect and will remain in force until 31st of July.

Assam: The struggles of a “river people”

<https://www.sapiens.org/culture/mising-river-people-assam-india/>

"One night when we were making dinner, I asked Jeuti (a pseudonym), "What is the meaning of the word Mising?" As we smoked fish over a fire, the light flickered across the cane walls of her home. "Mising means man (mi) of the water (asi)," Jeuti replied as she blew into the fire. She held her saador, a shawl-like garment, away from the flames. Stray hairs flew from the middle-aged woman's tightly coiled bun. Jeuti, her immediate family, and her extended kin live in a house built on bamboo stilts (a saang ghor, in Assamese) on a char, a semi-stable river island, on the Brahmaputra River in the Northeast state of Assam in India. They are part of the Mising community, which identifies itself as "Indigenous" (bhumiputra) and "tribal" (janajati). Historically, the Mising, a community of around 700,000 people, have inhabited areas close to the Brahmaputra, earning them the label of "river people" by those who live on the mainland. Outsiders see the river as an unpredictable force—one that constantly brings in silt, disrupting the lives of the people who make their homes near it. The Mising, accordingly, are often portrayed by outsiders as people isolated from the rest of "civilization," living temporary, fluid existences.

The Mising people I met when I first came to this area a few years ago, such as Jeuti, also used the term "river people" to describe their community. But to them, it meant something different. It pointed to how the river had guided their community's migrations over the centuries and

remained integral to their identities. The Mising have adopted some religious and lifestyle practices of the majority Assamese Hindu population over the centuries since their waves of migration from the eastern Himalayan mountains to the plains of the Brahmaputra River Valley around the 13th or 14th century. However, in many ways the Mising remain rooted in distinct ways of life connected to other cultural groups living along the Brahmaputra River in the hilly regions of the adjacent Indian state of Arunachal Pradesh and the mountains of Tibet. Since the 1950s, the Mising have been fighting for political recognition, land allocations, and cultural and linguistic freedom as part of a broader tribal autonomy movement in Assam.

The Mising involved in this movement assert that their belonging in Assam has connections to cultures and regions woven together by the Brahmaputra River and its tributaries, which cut across contemporary postcolonial state boundaries in India. The Mising's way of life and identity increasingly face threats from several directions: conservative political movements led by Hindu nationalists who attempt to categorize them as either Hindu or tribal, the destructive effects of climate change, and state-led development projects such as dams that disrupt the river's flow while generating energy for people outside of the community. When I started conducting research for my doctorate in anthropology in the char region, I came to realize that if I wanted to understand what it meant to be Mising, then I needed to understand what the river meant to this community. The state of Assam, where Jenti's family lives, has a population of about 36 million people.

In the 2011 census, 62 percent of the population was counted as Hindu, 34 percent as Muslim, 4 percent as Christian, and less than 1 percent as Sikh, Buddhist, Jain, and other religions. About 12 percent of the population in Assam are also members of Scheduled Tribes, the term used in the Constitution of India to demarcate tribal communities and accord them socioeconomic protections in employment and education, similar to affirmative action measures elsewhere. The question of who counts as tribal and/or Indigenous—and who deserves the rights of citizenship—has long been a contentious one in India, where diverse linguistic, religious, and cultural traditions reflect complicated histories of migration, colonization, and displacement. In many parts of the world, European colonial categorizations of “Natives” and “tribes” coded Indigenous communities as being biologically and socioeconomically inferior to colonizers. In India, British colonizers often built on precolonial Hindu caste hierarchies and assumed tribal populations to be isolated groups living in “primitive” conditions.

Moreover, British colonial administrators understood tribes through imperial race science, a pseudoscientific set of beliefs that justified racial hierarchies and mapped race categories onto people's physical attributes and geographic locations. In Assam, these distinctions were based on specific facial traits that communities in what is now Northeast India were seen to share with neighboring Asian countries such as China and Tibet. These categorizations also distinguished

between the “plains tribes” that lived in the flat, lowland areas of the Brahmaputra River Valley and the “hill tribes” that lived higher up in the mountains. As a result, several migratory communities in Assam were forced to identify as either plains or hill tribes. In reality, they often claimed belonging to both of those landscapes. With the 19th-century discovery that the Brahmaputra River Valley’s soil fertility was suitable for tea cultivation, colonial administrators made further distinctions between plains and hill tribes. Plains communities were put to work managing and providing labor to lucrative tea plantations and other agricultural ventures, while hill communities were seen as less economically significant. In 1944, British colonial administrator Robert Reid summed up these assumptions about tribal differences in Assam, writing of hill communities: “Neither racially, historically, culturally, nor linguistically have they any affinity with the people of the plains or with the people of India proper.” These invented distinctions were further solidified in the decades following independence in 1947, when states in Northeast India were carved out without regard to the multiple identities that mattered to communities who identified as tribal and/or Indigenous. This history has shaped the Mising deeply.

Though they are today categorized as a Scheduled Tribe of Assam and often seen by outsiders as a plains community, in their lived experiences, Mising people’s understandings of tribe and Indigenousness cross this binary of hills and plains—like the river itself. In doing so, the Mising emphasize cultural and religious similarities with present-day tribal communities in the hills of Arunachal Pradesh while asserting their need for tribal autonomy in Assam. In recent years, with Hindu nationalism gaining ground in national and local politics in India, questions over citizenship and belonging have grown more contentious. That’s because Hindu nationalists tend to equate being Indigenous to India with being part of the Hindu religious majority. This simplistic framing excludes many other groups in India’s pluralistic society, including the Mising, who make claims of Indigenousness based on different place-based notions of belonging. The long history of marginalization faced by the Mising and other peoples in the Northeast has come to the forefront again recently because of the Citizenship Amendment Act (CAA), which was passed in 2019 by Prime Minister Narendra Modi and his ruling Bharatiya Janata Party government.

The amendment provides all individuals from minority religious communities in Muslim-majority countries the right to claim citizenship in India except for Muslim migrants, a move that is in line with Hindu nationalist thinking. To be Mising is to be made and unmade by the river. After the CAA was passed, protests erupted across India. Protestors challenged the way the act framed India as a Hindu homeland—particularly the assumption that citizenship should be grounded on religion. Although the CAA did not specifically target the Mising, community members are apprehensive that the act signals a political trend toward increasing Hinduization. And tribal communities also know that their marginalization by the Indian state goes beyond

religion and extends to historical constructions of tribes as racial “Others.” The Mising community does receive some government protections; it is already listed as a Scheduled Tribe and has a Mising Autonomous Council. But the Mising have been unsuccessful so far in receiving the more protective Sixth Schedule status—a constitutional provision that helps tribal communities access resources while ensuring protections for their distinctive cultural practices. Mising community members worry that their increasingly difficult lives on the chars and their demands for Sixth Schedule status will continue to be overlooked by the state.

Although I grew up in Assam, the everyday uncertainties faced by the Mising people living on the chars were far from my own childhood, most of which I spent living in a boarding school in Southern India. Unlike Jeuti’s family, my upper-caste Hindu family remained at a safe distance from the fluctuations of the Brahmaputra River. (The news of flooding in Assam was seldom even covered by national media outlets, though I sometimes received reports during monthly calls from my parents.) My close encounters with the river began when I started fieldwork. I lived in Jeuti’s home, which she shared with her husband (a former headmaster at the local school), one of her adult daughters, and her eldest son’s family. After returning from working in the fields at the river’s edge, Jeuti’s extended family members would gather at her house to talk, eat smoked meat, and drink *apong*, a beverage made from fermented rice. From these conversations, I started to understand that to be Mising is to be made and unmade by the river. The chars where Jeuti’s family live form in areas where the river’s channel decreases in width; the silt from floodwaters accumulates in these spots, forming heavy deposits of sediments. During the monsoon months of June and July, some of these chars become submerged while others emerge anew.

These cyclical patterns—made more unpredictable due to climate change—determine everyday life and food availability in this agricultural community. Often, communities have to migrate seasonally when the monsoon floodwaters wash away their chars. Jeuti’s char is relatively permanent and located in the Lakhimpur District. It was formed from silt carried by the floodwaters of the Subansiri River, a northern bank tributary of the Brahmaputra. The community has a population of around 1,400 people, according to the last census in 2011. People from this community often travel to adjacent towns for work, to buy groceries, or to meet other family members. When flooding is at its peak, they have to travel about 10 kilometers by foot, then take a ferry for about two hours one way to reach the nearest town. When the floodwaters arrive, homes on the chars can be swept away entirely. In recent years, projects to engineer the Brahmaputra and its tributaries in the Greater Himalayan region for development purposes have further intensified the risks of flooding. Since the early 2000s, Mising and other riverine communities have been protesting the construction of the Lower Subansiri hydropower project, which they claim could increase flash flooding and further disrupt downstream areas in the region of Lakhimpur. Recently, author Juwel Pegu, a member of the Mising literary association

called the Mising Agom Kebang, expressed to me why the struggles faced by Mising people today are different from those faced in the past: “We always lived by the river and felt the floods.

But it also gave us food and a life that could sustain the crops our ancestors grew. Now the river gives less and less, floods more, has more sand deposits that bury crops. Plants have disappeared. Pigs, hens, and ducks have become difficult to rear.” He continued: “Moreover, with rising government initiatives that tell us to follow North Indian ideas of Hinduism that we cannot relate to, our culture is at risk.” Interwoven into the Mising’s story of cultural resilience is a story of environmental change. Many of these changes have been driven by state-led interventions to shape the river and the lives intertwined with it. These state interventions rarely align with the desires and assertions of local communities. The Mising community members I know agree that what’s needed is a systematic governmental and legislative plan that grants their community the autonomy and resources to thrive in precarious river environments. This would mean acknowledging how the Mising themselves define tribe, Indigenoussness, and belonging—not as constrictive categories but as things that shift and change with the river’s flows.

Assam: Ban imposed on use of fishing nets in Sivasagar

<https://www.sentinelassam.com/north-east-india-news/assam-news/ban-imposed-on-use-of-fishing-nets-in-sivasagar-532136>

"The Deputy Commissioner (in-charge) of Sivasagar, Pronab Jit Kakoty vide an order issued on April 1, 2021 under Section 144 CrPC, 1974 and in accordance with the Assam Fishery Rules, 1953 as well as the Assam Fishery (Amendment) Rule, 2005, has enforced ban on use of certain fishing nets of different mesh and size during the breeding season of fishes starting from April 1 to July 15, 2021 (both days inclusive). As per the order, prohibition is imposed upon the use of borjal, mahajal, fasijal, bhorjal or any type of such nets with meshes less than 7 cm bar or 14 cm mesh in any proclaimed fishery or so during the period. Further, ban is also imposed on the use of borjal, mahajal, bhorjal or fasijal or any other nets with meshes less than two and a half inches square during the period in any proclaimed fishery or so. Moreover, restriction is also imposed on catching or killing of breed fishes (fishes carrying eggs) of the following species, namely, Rahu (Catla), Mirika (Mrigal), Mali (Calbasu or Koliajara), Chital, Khorla, Pithia (Mahasul), Ghorla and Kuri (Gonius) during the breeding season of fishes beginning from April 1 to July 15 in any proclaimed fishery or so. This order has come into force with immediate effect in the entire district and will remain in force for a period of 60 days from the date of issue of the order or until further order. Any violation of this order will be punishable under Section 188 of IPC.

Assam, Meghalaya, Andaman & Nicobar Islands: To experience heavy rainfall

<https://weather.com/en-IN/india/news/news/2021-03-31-assam-meghalaya-andaman-nicobar-islands-in-for-heavy-rainfall>

"5-Day Nationwide Forecast Under the influence of the cyclonic circulation over Southeast Bay of Bengal and adjoining south Andaman Sea, a low pressure area has formed over the same region. The associated cyclonic circulation extends up to 5.8 km above mean sea level, and is likely to become more marked over North Andaman Sea and neighbourhood during the next 24 hours, as per the India Meteorological Department (IMD). This system will cause widespread rainfall with thunderstorms, lightning and gusty winds over Andaman & Nicobar Islands during the next four days. Isolated heavy to very heavy falls are also on the cards over the Islands during March 31-April 1. Fishermen are also advised not to venture into Southeast Bay of Bengal and adjoining South Andaman Sea on March 31, and over the Andaman Sea and adjoining areas of Bay of Bengal on April 1-2. Meanwhile, strong lower level south-westerlies from the Bay of Bengal and other favourable meteorological conditions are set to bring fairly widespread to widespread rainfall with thunderstorms, hailstorms, thundersquall and lightning at isolated places of Northeast India on March 31-April 1, with maximum activity on March 31. Accordingly, isolated heavy falls are expected over Assam, Meghalaya, Nagaland, Manipur, Mizoram and Tripura on March 31, and over Arunachal Pradesh during March 31-April 1.

These conditions may also cause landslides and inundation of low lying areas at isolated places over south Assam, Meghalaya, Tripura and Mizoram during March 31-April 1. 3-day total precipitation of 50 mm to 120 mm is possible over Arunachal Pradesh and adjoining areas from Wednesday to Friday. A trough and cyclonic circulation also persist over Southern India, which will bring isolated to scattered rain with lightning over Kerala in this period. Lastly, a fresh western disturbance could affect the Western Himalayan Region from Sunday onwards. Dry weather is likely over Central, Western and Eastern India in this period, and over Northern India from Wednesday to Saturday. As for mercury levels, heatwave conditions are possible in isolated pockets over East Uttar Pradesh, Bihar, East Madhya Pradesh, Chhattisgarh, Rajasthan, Maharashtra, Jharkhand, West Bengal, Odisha and Telangana on Wednesday, and in isolated pockets over Maharashtra, Odisha and Telangana on Thursday. However, the maximum temperatures are very likely to fall by 3-5°C over the plains of Northwest India during the next two days, leading to the abatement of heatwave conditions over Rajasthan. Although, another heatwave spell is expected over the plains of Northwest India from April 3. The maximum temperatures will be below normal over Northeastern India in this period due to rainfall, near-normal or slightly below normal over Eastern and Northern India from Thursday onwards, and slightly higher than average over Western and Southern India in this period.

Dust-raising strong surface winds (speed reaching 30-40 kmph) are very likely to prevail over Rajasthan, Haryana, Delhi, West Uttar Pradesh, Punjab, north Madhya Pradesh, East Uttar

Pradesh, Jharkhand and Gangetic West Bengal during March 31-April 1. 2-Day Regional Forecast Wednesday 1) Heavy to very heavy rain is likely at isolated places over Andaman & Nicobar Islands. Heavy showers are expected at isolated places over Assam, Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Mizoram, Tripura and Sikkim. 2) Widespread rain/snow and thunderstorms are possible over Arunachal Pradesh, while just widespread rains and thunderstorms have been forecast over Assam, Meghalaya, Nagaland, Manipur, Mizoram, Tripura and Andaman & Nicobar Islands. 3) Fairly widespread rain/snow and thunderstorms are on the cards over Sikkim. 4) Scattered rain and thunderstorms are likely over Kerala and Lakshadweep. 5) Isolated rain with lightning is possible over Karnataka. 6) Heatwave conditions are likely in isolated pockets over East Uttar Pradesh, Bihar, East Madhya Pradesh, Chhattisgarh, Rajasthan, Maharashtra, Jharkhand, West Bengal, Odisha and Telangana. 7) Maximum temperatures could rise above 40°C in some places of south Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Chhattisgarh, West Bengal, Odisha, Jharkhand, Andhra Pradesh, Telangana, Karnataka and Tamil Nadu. Thursday 1) Heavy to very heavy rain is likely at isolated places over Andaman & Nicobar Islands, while just heavy showers are expected at isolated places over Arunachal Pradesh and Sikkim. 2) Widespread rain/snow and thunderstorms are on the cards over Arunachal Pradesh, while just widespread rain and thunderstorms are possible over Assam and Meghalaya. 3) Fairly widespread rain/snow and thunderstorms are likely over Sikkim. Fairly widespread rain and thunderstorms are on the horizon over Nagaland, Manipur, Mizoram, Tripura and Andaman & Nicobar Islands. 4) Isolated rain with lightning is possible over Kerala. 5) Heatwave conditions have been predicted in isolated pockets over Maharashtra, Odisha and Telangana. 6) Maximum temperatures are likely to be above 40°C in some places of south Rajasthan, Gujarat, Maharashtra, Chhattisgarh, West Bengal, Odisha, Jharkhand, Andhra Pradesh, Telangana, Karnataka and Tamil Nadu.

Tamil Nadu and Assam: Nine fishermen stranded in Arabian Sea

<https://timesofindia.indiatimes.com/city/trichy/nine-tamil-nadu-and-assam-fishermen-stranded-in-arabian-sea/articleshow/81471096.cms>

"Nine fishermen on board a deep sea multi-day fishing vessel were stranded in the Arabian Sea and are awaiting help after their boat developed a technical snag. Activist P Justin Antony of International Fishermen Development Trust said that the issue has been taken to the notice of the union fisheries minister, Indian coast guard, navy and the chief minister's office. The nine fishermen include four from Kanyakumari and five from Assam. The Kanyakumari fishermen have been identified as Surling 60, Sajin 32, Sujin Kumar 19, and Kejin, 26, all from Thoothoor. The activist said that the fishermen went fishing in the multi day fishing vessel bearing registration number TN-15-MM-384 from the Cochin harbour on February 25. On Wednesday, the engine suffered a technical snag and could not be fixed as an important component was

damaged off the Lakshadweep Coast at a distance of 270 nautical miles (500km) from Cochin. With no other boats close to them for help they informed the owner of the boat Benziger through satellite phone in the boat. A fisheries department official said that their boat is stranded beyond the Lakshadweep.

“Their nearest land is Agatti Island in Lakshadweep that is 70 nautical miles (130km) away. We have informed the Coast Guard, Chennai, to help them and are awaiting a positive response,” the official added.

Assam: Parimal Suklabaidya Inaugurates “Macher Mojlish In Silchar; Govt. To Home Deliver Fish

https://www.barakbulletin.com/en_US/parimal-suklabaidya-inaugurates-macher-mojlish-in-silchar-govt-to-home-deliver-fish/

"Some middlemen are taking away a huge chunk of profit by acting as a broker between the fish producers and buyers. As a result of which the price of fish is inflating more than necessary. The state's Fisheries Department has now started a retail counter called 'Machher Majlish' in Silchar to bring the fish prices under control by eliminating middleman. State Fisheries Minister Parimal Suklabaidya inaugurated the counter himself on Thursday afternoon. He was accompanied by Silchar MLA Dilip Kumar Paul, DIG Dilip Kumar Dey, District Magistrate Kirti Jalli and others. The Minister himself gifted fishes like boal, katla and chital etc to the guests. Initiative has been taken to home deliver fish to the houses of people through 'Fishery on Wheel' method with the help of retail fish shops. Initially, three traders were provided with bikes and car to deliver fishes home. People can buy fresh fish at fair price by calling 8876411355 sitting at their home. Although the system will function limitedly in the initial stage, the government has plan to develop it in the future. This will provide job opportunities to the local youths as well as create an environment to deliver good quality fish at home.

Speaking to media, Parimal Suklabaidya said, “Like in agriculture, incase of fishes too the middlemen have been cheating producers for a long time and are selling them at exorbitant prices in the market for their personal gains. We have decided to break this chain and send fishes directly from the producers to the buyers. It will benefit the producers and the buyers will be able to eat good fish at affordable prices. Fishes will be sold at a controlled price, so there will be no black marketing. There is no fixed price for fishes in the state yet. We have plans to fix price of fishes based on areas. The fish which is being sold at Rs 500 per kg in Fatak bazar market can be sold at the retail counter at Rs 350 by us. This will effect the whole market and in turn the price of fishes will start falling slowly. Intermediate brokers won't be able to cheat anymore.” A few days ago, Parimal Suklabaidya said that fish was being smuggled from Bangladesh to India and

there was a possibility of smuggling illegal goods to India intermingled with them. Reiterating this, he said, “Fish production in our state has increased so much that now there is no need to import fishes.

However, in some areas it is seen that imported fishes are being sold at very low prices. The fishes have entered India and are being sold in different parts of Cachar district at a much lower price than what is being sold in Bangladesh. We have already contacted the Bangladesh government and talked to the police in the three districts of the Barak Valley. Strict steps will be taken in the future to prevent this.” District Magistrate Keerthi Jalli said, “It is said that no one can beat the intelligence of Bengalis. The reason behind this is that Bengalis eat fish. The initiative taken by the State Government today will not only hand over high quality fish to the people but will open many avenues of livelihood. The youths will get involved in this noble initiative and find new ways of earning. In addition, the producers will get a lot of profit. I would like to thank the government for this.” In their speeches, MLA Dilip Kumar Paul and DIG Dilip Kumar Dey lauded Minister Parimal Suklabaidya and the State Government.

Assam: 22 major fishery schemes to be implemented in Nagaon

<https://www.sentinelassam.com/north-east-india-news/assam-news/22-major-fishery-schemes-to-be-implemented-in-nagaon-521806>

"Nagaon fishery department has taken up 22 major fishery schemes in different parts of the district to increase the region's fish production. A high-level fishery department source said that the proposed schemes include construction of huge fisheries, upgradation of existing low-lying areas and installation of fish feed mills. ""Till now works of 12 of the proposed 22 major schemes have already been started. We hope all these works will be completed within the next couple of years,"" the source said. According to the source, the proposed schemes would cost nearly Rs 10 crore and nearly half of the cost would be sanctioned as financial assistance to the beneficiaries. With more than 35,000 MT production per year, Nagaon is at the top of the list of fish producing districts in the State. The district's annual fish requirement is nearly 22000 mt. Nagaon has nearly 6,000 hectare artificial ponds and 8,000 hectare low-lying natural fish areas. According to official record, a natural water body produces 350 kg per hectare area. It is almost 850 kg in case of an artificially erected pond.

Nagaon district fishery officer R Barman said that proposed major schemes have been taken up under the Prime Minister's Matshya Sampad Yojana and implementation of the schemes might do a lot in making the district independent in fish production. However, alleged large-scale corruption, coupled with unholy nexus between politicians, middlemen and bureaucrats, stand in the way of proper implementation of government sponsored schemes in the field. ""Many times it is seen that fish farmers actually working in the rural belts are kept far away from these

schemes. Works shown are done only in office files," said Manjit Hazarika, a Deudhar farmer. Hazarika's Deudhar, 7 KM from Nagaon district headquarter, is known for Sapekhati beel where Rs 2.25 crore had been spent under several fishery department schemes and NREGA. "Our Sapekhati beel is still a hyacinth-filled pond of dirty stagnant water without any sign of these implemented schemes," he alleged.

Assam: Bihu spirits high as people throng fish markets on uruka

<https://theshillongtimes.com/2021/01/13/bihu-spirits-high-as-people-throng-fish-markets-on-uruka/>

"The fish markets of Assam were chock-a-block from the wee hours of Wednesday as people braved the winter chill and inflated prices to happily take home the essentials for the uruka feast. From moderate to huge, there were fish of various sizes, some as heavy as 45 to 50 kg or more, and finding takers during the day. The Bihu mood could be gauged from the scene at Uzanbazar, one of the oldest fish markets of Assam, where hundreds of sellers flaunted their catch from rivers and nearby fisheries/wetlands to woo buyers from the city's outskirts, while some had even dropped by from neighbouring Meghalaya. "Thankfully, sales have unexpectedly been better than last year (when the CAA movement had a bearing on the Bihu mood and sales). Last year was disastrous as the COVID lockdown hit our livelihoods hard," said a fish seller at the Uzanbazar market. While there was a wide variety of fish spread out on the tarpaulins across various sections arranged specially for the uruka sales, chitol outnumbered the rest. "I have run out of chitol stock by noon itself. Most of the varieties ranged between 5kg and 6kg and sold for Rs 800-900 per kg. Now I have a limited stock of bhokua (catla) fish," another seller said. Curd/cream and traditional delicacy sellers from places like Hajo and Bezera in Kamrup district were also camping on the fringes of the fish market from as early as 3 to 4am to convince buyers to take home the items for breakfast the next morning. Some petty vegetable sellers also brought along ducks, another Bihu specialty, for sale as well.

"The ambience this time is a little different. It's like getting all the Bhogali special items in one place. It saves time apart from the rare chance to buy fresh items from rural areas," said a resident of the locality. In other markets, be it Ganeshguri, Kolongpar (Narangi) or Beltola, the footfalls were lower in the morning but picked up as the day matured. Meanwhile, in a move to lessen the burden of high prices, FISHFED has reportedly procured about 5000kg from cooperative societies for sale through its outlets at discounted rates.

Assam: Educated fish farmer of Darrang in Assam coming forward to fulfill local fish demand in Bhogali market

<https://www.apnnews.com/educated-fish-farmer-of-darrang-in-assam-coming-forward-to-fulfill-local-fish-demand-in-bhogali-market/>

“Bhogali Bihu” is at our door step and every festival loving Assamese people wouldn't disagree that the feast on the Uruka night will be incomplete without the delicious dishes made with local variety of fishes. The Bhogali feast would turn even better if the “Kolothy” of big size local “Chital” fish could be added in the list of dishes. The high demand of local variety of fishes could be fulfilled only due to the hard work of the local progressive fish grower like Nayanmani Saharia of Outala Besimari village under Kalaigaon Development Block of Darrang district . “ I am eagerly waiting for the Uruka bazar to supply variety of local fishes including around two quintals of Chital each not below five kilo in size . I am expecting a reasonable price of Rs 650/700 per kilo of Chital.” said Nayanmani while talking to this news paper . Nayanmani is one such graduate youth in the state who has already proved that with little technical knowledge , dedication and hard work one can easily earn more than a first class government officer can earn. He has successfully overcome the common belief that only government job is the assures means of livelihood. During the year 2009-10, Nayanmani was selected as a beneficiary for construction of a new pond of 0.40 hectare under the Rashtriya Krishi Vikash Yojana (RKVY) implemented by Department of Fisheries, Government of Assam.

This was the beginning of a new endeavour for Nayanmani. “ Subhash Dutta, Fishery Demonstrator of District Fishery Office helped me in availing the government scheme and had taught me all the technical aspects of scientific fish farming”. Being a visionary youth, Nayanmani started doing short term fish culture practice since year 2012-13. The package of practice for short term fish farming came up only recently from Assam Agriculture University. Encouraged after achieving good return from the new pond constructed under RKVY through Fisheries Department, he thought of expanding the fishery business. As such, he expanded his farm size from just 0.40 hectare to 2.40 hectare during the year 2015. He is now also involved in integrated pig cum fish culture, poultry farming, goat rearing on a commercial basis. He is now producing 6000 Kg of fishes per annum from his farm with an annual turnover of Rs. 10 lakhs. His annual turnover from pig and poultry is about Rs 2.0 Lakhs. “As days passed by, I have got more ideas in fish business and to deal in the fish market. There is more profit in short term fish culture than in long term fish culture practice”. Nayanmani said. Nayanmani with his self confidence and vision he transformed adverse period of COVID induced lock down into a golden opportunity, With the necessary support from District Fishery Office, he sold about 1500 Kg of fishes in one month at an average price of Rs 200.00 per kilogram.

His turnover in one month during the lockdown was nearly Rs 3,00,000.00. An entrepreneur with equal social responsibilities , Nayanmani thinking about the livelihood standard of his fellow local fish farmers he took the lead to apply for a cluster-based project to the District Fishery

Office, Darrang. With a 12-member group lead by Nayanmani Saharia as the Secretary, the group is now known as Nabarupa Meen Palak Gut. This group is one of the Farmer Producer Group (FPG) under World Bank aided Assam Project for Agri-Business and Rural Transformation (APART) for the year 2020-21. "I am thankful to Jyoti Prabhat Duarah, Fisheries Development Officer for his kind cooperation and helping me to coordinate the Farmer Producer Group or FPG under APART. All the members of the my FPG are now determined to achieve fish production of 5000kg per hectare under APART". Under the able guidance of Mr Duarah (FDO, Darrang), we have learnt many new things apart from fish culture; like community procurement process which involves inviting Request for Proposal for supply of inputs, preparing of Comparative statements and selection of bidders for supply of inputs, issuing of supply order by FPG etc."

Similarly Fisheries Development Officer, Jyoti Prabhat Duarah has observed "A government aided project can be successful and sustainable only if the right beneficiary is selected, and the attitude of the farmer to adopt and replicate the technology. In this case, Nayanmani and his team has so far proved to be the right choice. " Nayanmani has appealed to every educated unemployed youth to start fish scientific cultivation on a commercial basis for a sustainable livelihood instead of hankering after the government jobs with very limited earning opportunities .

Assam: Community fishing inside KNP for Uruka feast prohibited

<https://www.sentinelassam.com/north-east-india-news/assam-news/community-fishing-inside-knp-for-uruka-feast-prohibited-520723>

"The decade-long tradition of community fishing inside Kaziranga National Park (KNP) has been banned this Magh Bihu as it poses a threat to the park's safety, security and biodiversity. A source in Nagaon administration on Tuesday said that the local administration and the forest department would ensure constant vigil in the national park area to stop all kinds of fishing in the water bodies inside the park on Uruka. Community fishing on Uruka in the water bodies of the national park is a traditional custom. Till last year, the local administration as well as the park authority allowed villagers to do community fishing on that day. A day before Uruka, thousands of fishermen gather inside the national park for fishing. People from neighbouring districts queue inside the national park to purchase fish on that particular day. "For most of the well-to-do families of the State, a fish from Kaziranga is an unavoidable item of the Uruka feast because of its taste and quality. The park's fish has a separate market in Guwahati and Dimapur. This is for the first time that fishing on Magh Bihu Uruka is officially prohibited," said a local Koliabor villager. Major water bodies inside the national park where community fishing is done include Diphooloo river and three water bodies- Potahi, Roumari and Sitolmari. On Monday, Nagaon administration imposed ban on trafficking any fishing

equipments, gathering of people in the banks of the water bodies under Section 144 CrPC. Those found involved in such activity will 'be punished as per law'.

Assam: Farmers take up climate-smart aquaculture in abandoned lands

<https://www.deccanherald.com/science-and-environment/assam-farmers-take-up-climate-smart-aquaculture-in-abandoned-lands-936127.html>

"When Karmeswar Deka, a farmer in Bogibari village situated on the outskirts of Guwahati in Assam, decided to dig a pond in his 3 bigha (roughly 1 acre) derelict land in 2007, he was hopeful of a good additional income. He, however, was not aware that the decision to convert the abandoned land in the village into more than 200 ponds by him and other villagers would change their lives and improve the environment too. Deka, who is into paddy cultivation, now earns an additional income of about Rs 60,000 to 70,000 every year by selling fish. "Apart from providing an extra income, the groundwater level in our village has improved dramatically since the ponds were dug. As a result, the problem of water shortage both for drinking and irrigation has reduced," Deka told DH. Several ponds have come up within one-kilometre radius at Bogibari since 2007 when seven youths of the village mobilised the villagers and encouraged them to convert their abandoned land and water bodies into ponds and take up "climate-smart" fish farming.

After failing to secure government jobs, the youths — Jyotish Talukdar, Binay Kumar Das, Amulya Deka, Kanak Pathak, Prabhat Talukdar, Ratan Jaishi and Umesh Chandra Das — formed an NGO called Kalong-Kapili and started fish farming. "We started with 20 ponds and today there are over 200 ponds in the village. The villagers now produce 5,000 kg of fish per hectare," said Jyotish Talukdar, director of Kalong-Kapili. According to Talukdar, it was possible because of the technical help and training provided by the Assam fishery department and the loans of Rs 50,000 provided to each farmer by Assam Gramin Vikash Bank as part of the Umbrella Programme for Natural Resource Management of National Bank for Agriculture and Rural Development (NABARD). Groundwater recharge "When we started, we did not think that fish farming will also make such a positive impact on the environment. The villagers had to dig 80-85 feet to lay a tube well before the project was initiated. Depleting groundwater deteriorated the quality of water available. But after the ponds were dug, the groundwater got recharged so much that now water is available 30-35 feet beneath.

The abandoned water bodies used to cause artificial floods in the village but now this water is being channelised for irrigation purpose," Talukdar said. Apart from farming of fish like rohu, bhokua (katla), the NGO started a project for replacement of bottom-dweller fish by freshwater prawn. The villagers have also been encouraged to adopt composite farming including duck rearing, poultry, beekeeping, horticulture and mushroom production. More than one lakh

families in at least 100 villages in six districts (Kamrup, Morigaon, Nagaon, Hojai, Dima Hasao and Karbi Anglong) have adopted this economically and environmentally sustainable livelihood model. "At the same time, we are making sure that only the abandoned land is converted for fish farming and not the land being used for paddy cultivation," said Binoy Kumar Das. Dhrubajyoti Sarma, managing director of Assam Apex Cooperative Fish Marketing & Processing Federation Ltd told DH that the climate-smart fish farming projects have improved livelihoods and environment significantly. "Earlier, people used to dump wastes at the abandoned land. These were not fit for any other cultivation too. Now, with the increase in income, most households have pucca houses, motorcycles and some own cars too," Sarma said.

Assam: Community fishing banned at Assam Ramsar site

<https://www.thehindu.com/news/national/other-states/community-fishing-banned-at-assam-ramsar-site/article33478646.ece>

"The Kamrup (Metropolitan) district administration has prohibited community fishing at Deepor Beel, a wetland on the south-western edge of Guwahati and Assam's only Ramsar site. The prohibition order under Section 144 of the Cr.PC underlines the possibility of community fishing on January 3 and will remain beyond the mid-January Magh or Bhogali Bihu that is preceded by mass fishing in many parts of the State. "Some people from the villages around and adjoining Deepor Beel Wildlife Sanctuary such as Keotpara, Mikirpara, Paspara, Azara, Tetelia, in tandem with people from various fringe parts of Guwahati city are likely to venture out to organise community fishing on January 3, 2021 and even after that also," said an order from Deputy Commissioner of Police (West), Guwahati. "And whereas such ventures are absolutely illegal under the Wildlife (Protection) Act, 1972, which will also cause irreparable as well as irretrievable damage to the ecosystem of the sanctuary as presented by the divisional forest officer (Guwahati Wildlife Division)," said the order effective from January 1-31. District officials said the order was necessary to prevent fishing, excavation and construction in and around the wetland that has been shrinking over the years. Deepor Beel was designated a Ramsar site in 2002 for sustaining a range of aquatic life forms besides 219 species of birds.

A Ramsar site is a wetland designated to be of international importance under the Convention on Wetlands on February 2, 1971, in the Iranian city of Ramsar on the Caspian Sea shore. According to hydrological experts, the area of the wetland was about 6,000 hectares in the late 1980s. Satellite imagery has revealed that its area has shrunk by at least 35% since 1991. Deepor Beel officially has an area of 4,014 hectares or 15.5 square miles. "One of the reasons the wetland is in a precarious state is that it is losing connectivity with small rivers like Kalmoni, Khonajan and Basistha that used to flow via the Mora Bharalu channel through Guwahati," said Bibhav Talukdar of green group Aaranyak. Expansion of the city, encroachment upon the natural channels through Guwahati and from the hills around, and a municipal waste dump at Boragaon

almost on the edge of the wetland were the other factors, he added. Assam had 3,513 wetlands and a majority of them had water with low turbidity, officials said.

Assam: How the Brahmaputra is eroding away lives and livelihoods in Assam

<https://www.newslaundry.com/2020/12/16/treacherous-river-how-the-brahmaputra-is-eroding-away-lives-and-livelihoods-in-assam-2>

"Every year, like clockwork, images of Assam drowning in the swollen Brahmaputra flood the Indian media. Every year, the response to the disaster is reduced to a statistical exercise, the tabulation of lives and livelihoods lost, crops and wildlife consumed. Sometimes ecological devastation as both cause and consequence of the disaster enters the discourse. But the stories of ordinary people who bear the brunt are rarely told. Or, when told, they are forgotten as soon as the news cycle moves on. Another year rolls around and the story is repeated. It's almost the same elsewhere in India: the human suffering and how it's tied to economic and ecological causes and consequences of a calamity is often overshadowed by a focus on statistics and debates seeking to assign blame. To help rectify this, Newslaundry travelled in Assam and Bengal to get a sense of how the lives of common folk have been upturned by two of the deadliest natural disasters to hit the country in 2020 – the Brahmaputra floods and the cyclone Amphan – which together took at least 221 lives.

In Assam, where floods devastate usually the same marginalised people year after year, we visited the six worst-affected districts, covering about 1,300 km along both banks of the Brahmaputra as well as the world's largest river island, Majuli. In Bengal, we focussed the coverage on the Sundarbans, the mangrove delta wrecked by Amphan. In the northeastern state, one of the major problems facing the disaster-hit people is river erosion and the resultant landlessness. Assam has lost 4,270 sq km of land – more than Goa's total area – to river erosion since 1950, and 2,500 villages have been wiped out. At least 3,800 sq km of the eroded land was “highly productive farmland, according to a draft report prepared five years ago by the state's environment department, which identified continuous changes in the Brahmaputra's course as a key reason. The report pointed out that “costs associated with both flooding and the erosion of land have been rising as it has also triggered migration, causing conflict over land...and posed a threat to general economic development. Yet, it is only this year that erosion has been pushed to be considered a natural calamity, so that populations affected by it are entitled to state compensation. “Funds allocated under the Disaster Damage Repairing Scheme do not reach the erosion-affected people, according to a report in NENow. In fact, the state government does not even have “any account of the number of displaced people, especially in lower Assam. To get a picture of how erosion has wrecked the lives and livelihoods of ordinary people, take the example of Hesuli Pothar, a village of about 90 families in Dhemaji district towards the border with Arunachal Pradesh. Tucked away a 25-minute drive away from the highway to Arunachal,

Hesuli has been ravaged by ever intensifying floods in the past six years. It shows: damaged houses and barren silted farmlands punctuate the village's lush green landscape of paddy fields. For a people dependent for livelihood primarily on agriculture, the loss of farmland has landed a heavy blow. "You see this river? Here's where my land was, rued Rekha Gogoi, 34, a member of the local panchayat, nodding in the direction of a stream that cuts through the fields. It has newly branched off the Jiadhhal river, a tributary of the Brahmaputra, in a phenomenon known as braiding.

"There's no trace of my field anymore. This arm of the Jiadhhal river has washed it all away. It came through our village only this year. I feel sick every time I look at it. We have a little land left across the river, but there are patches of sand there where nothing grows. It has been months since this happened but we still haven't been able to come to terms with it. The new stream hasn't just washed away Rekha's farmland, it has made future uncertain for her family. "We were completely dependent on this land. We would grow food for ourselves and to sell in the market. Now that it's gone I don't know what we will do. I have two daughters, aged nine and 12, to raise and educate. So, we have to find some solution for their sake. Paddy fields across the stream are only partly silted and, hence, cultivable for now, but the farmland along the near bank will be barren for at least two years given the amount of silt and sand deposited by the floods. Once, there was a silver lining to the floods: the fertile silt they left behind replenished the fields. Now, in significant part because of climate change, the silt is mostly sand. "Our trees are starting to dry up as well, especially bamboo, Rekha said.

"We used to grow bamboo we needed in our village but for the last few years we have been buying it from outside. Our trees and crops are not suited to this sandy soil. The precarious situation of Hesuli's villagers is no accident of nature. For at least four years, they have pleaded with the administration to repair an upstream embankment on the Jiadhhal. But to no avail. This year, the river tore through the embankment, submerging the village and birthing a new stream. "If the embankment is fixed, it will save about 40 villages in this area from being flooded so severely every year. Also, this new stream will be diverted and the soil will get rejuvenated in a few years. But there has been no response from the government so far. We live in fear that one day our entire village will be washed away, Rekha said. Assam has a network of 423 embankments built over the last six decades, but nearly 300 are past their use-by date and can no longer withstand the surging waters. At least 180 of the embankments were breached this year alone. Nearly 150 km away in Gohpur district, Pradeep Mili has lived what Rekha only fears. Pradeep, 34, resides in Borphalang village with his father, wife, and two children. The family was compelled to move to Borphalang in 2008, when their ancestral village, Lohitmukh, 17 km away in Sonitpur district, was washed away by the flooded Brahmaputra.

“There were around 600 of us in Lohitmukh. A few of us moved to this village but I don't know what happened to most of the people, many of whom I grew up with, after the village was washed away. It was right on the bank of the Brahmaputra. In the flood season, we would always stay alert since there was nobody to tell us when the river would suddenly grow fierce. Every year it would take a little piece of our land and then, almost overnight, we lost everything. Pradeep and his family arrived in Borphalang with just the clothes on their backs. They were put up by some families in the village for a few months, until Pradeep had made enough, mostly working odd jobs, to buy a piece of land. But living in Borphalang came at a price. “This village is underwater for six months. For three of those months we have to leave our home and live in a tent on the embankment. I cannot work my land either, so I sell our chicken and goats, and do odd jobs to make ends meet. My house is submerged within two days of the flooding, so I must remain vigilant constantly, especially at night. I don't trust the river, there's no telling when it will take everything away again. His seemingly perpetual tussle with the river has taken a heavy emotional toll. “How do I even put it in words? I live in a constant state of stress.

All that remains of my ancestral village is sand, my animals die every year, my farm is barely cultivable. There's a heaviness on my chest I can't get rid of. I have to deal with loss every year, Pradeep said. “But what use is talking about it? It is not like we will get any help from the government. People hit by natural calamities in Assam are entitled to be compensated for the loss of homes, fields, and livelihoods. A family that loses its home in the floods is entitled to Rs 95,100 from the State Disaster Response Fund, for example, and a farmer should get Rs 12,200 per hectare to desilt their farmland. Similarly, fisherfolk are meant to receive Rs 1,500 a month under the PM Matsya Sampada Yojana during the “lean period, from April 1 to July 1, when fish breed and they are not allowed to work. A scheme to compensate fisherfolk for loss of work in the flood months as well is on the anvil, according to Rakesh Kumar, secretary of the fishery department.

In reality, few people receive any compensation, mainly because their claims are mired in bureaucratic red tape. The lack of state support means it's a hard life for Pradeep in Borphalang. But he can't afford to leave. “I would rather stay here than be landless, he explained. He may be fighting a losing battle. The Brahmaputra is eroding more land by the year, according to the 2015 draft report. “Continuous braiding and accompanying erosion has expanded the river bed area significantly, the report noted, “from around 3,870 km estimated between 1916 and 1928 to 6,080 km in 2006. Another government report pointed out that “the width of Brahmaputra has increased up to 15 km at some places due to bank erosion. It has also constantly braided and changed its path. Ceaseless erosion of the river banks has profound ecological and economic consequences, of course, but in Biswanath Ghat Purni Gaon, it threatens cultural heritage as well. Several of the temples that this village in Biswanath district is famous for sit precariously

on the edge of the river, as do a few houses. It seems only a matter of time before the rest of the bank is eroded and the structures are washed away.

Most of the houses lie beyond the usual flood line, but the river is inching closer and turning more hostile. “The floodwaters rise further and further every year, said Tritho Das, 35, who has lived in the village all his life. “We have also noticed that the island in the middle of the river and our own bank are being eroded, bit by bit. The river is widening and siltation is increasing, making it shallower and muddier than it used to be. This is alarming for the villagers, most of whom are engaged in fishing for livelihood. In fact, nearly 80 percent of them depend on the river for both food and income. Tritho Das has fished in the Brahmaputra for 17 years, as his father and grandfather did before him. The river is his sole source of livelihood. He cannot fish during the flood months and is not permitted to during the “lean period. For loss of work during the lean period, the fisherfolk are due compensation, but neither Tritho nor his father has ever received it. “The loss of depth, at least in this area, means the quantity and size of the fish has declined a lot over the years, he said. “We get only small fish now, and the daily catch fetches just about Rs 200 as against Rs 600 in the past. It's the same kind of fish but they are smaller as the bigger fish seek out deeper waters. Most go into the Kaziranga National Park area.

It is just across from us but we aren't allowed to fish there. In Dokhimpath Koibotro too, fisherfolk whose lives and livelihoods are threatened by the encroaching river haven't received any help from the government. Dokhimpath Koibotro is a village on the edge of the Majuli river island, which has shrunk from about 800 sq km about a century ago to less than half the size. In fact, onboard the ferry to Majuli from Nimati Ghat in Jorhat, the erosion along the Brahmaputra island is clearly visible. Diganto Das, 48, from Dokhimpath Koibotro, is a witness to the damage erosion has caused to the island and its people. “Over the years, Majuli has shrunk because of erosion. If erosion continues at this same rate, which it will, where will we live? Majuli isn't one or two villages, there are hundreds of villages here. Where will we all go? When floods wash away our houses, we get no help from the government to rebuild them. How can we blindly trust that they will rehabilitate us properly in the future? Diganto's neighbour, Phukan Das, 52, who is a fisherman as well, has to pay for rebuilding his home every year.

It's a struggle every time, not least because he can't fish for several months every year and the compensation he's entitled to is never paid. “Our houses are made of only mud, wood and bamboo and they are washed away every year when there are floods, he said. “And it takes 50,000-60,000 rupees to rebuild a house. Pralap Pegu, a farmer in Borphalang, hasn't ever been compensated either. “Despite taking my bank account number every year, the government has never once compensated me. The relief material doesn't reach us either. I tried working a job in the town for a while because the money was better, but I had to return to look after my family, animals and my home during the six months that our village is under water. If the government

only helped the village develop an irrigation system, it would make life easier for them, Pralap said. Then they could work their land in winter when it isn't underwater. And getting drinking water during the flood season, when the wells and borewells are submerged, would fulfil their “essential need. In 2005, Diganto saw a neighbouring village, home to about 2,000 people, get washed away entirely, and he fears Dokhimpath Koibotro Gaon may be next. “People whose houses were washed away built changes along the raised roads, he said, referring to bamboo stilt houses.

“When floods arrive, they take their belongings and cattle to the embankment and wait it out. There has not even been a whisper about rehabilitation for those people. At least 70 villages on Majuli have been decimated by erosion and most of the villagers don't or can't afford to leave the island. So while the island is shrinking, the population either remains the same or increases. Has he thought about leaving the island which is shrinking before his own eyes? Diganto laughed. “This is my birthplace. All my ancestors were born here, he said. “And even if I wanted to leave, there is no way I could. I don't have the money to just walk into Jorhat town and buy a piece of land. I have to take all my struggles in stride and survive. This is my land, and I shall die here.

Assam: Fish production in Assam has gone up by 27% in 4 years

<https://timesofindia.indiatimes.com/city/guwahati/fish-production-in-assam-has-gone-up-by-27-in-4-years/articleshowprint/79484644.cms>

"Assam's fish production has gone up to 3.73 lakh metric tonne (MT) in 2019-20 from 2.94 lakh MT during 2015-16 a rise of 26.87% in four years. As such, the state has bagged four top honours in the fisheries sector, including the “best state title among hilly states. State fishery and forest minister, Parimal Suklabaidya, while addressing the media on Sunday, said the achievements of Assam in the fisheries department is all courtesy the Sarbananda Sonowal-led government as it has brought in revolutionary changes. “Assam has almost reached self-sufficiency which was clearly reflected during the lockdown period, the minister added. The minister also informed that the fish seed production of the state currently stands at about 9,519 million seeds (fry stage) as against 5,678 million during 2015-16 an increment of 67.65%. He also briefed about various schemes Ghare Ghare Pukhuri Ghare Ghare Maach, Chief Ministers Samagra Grammya Unnayan Yojona, among others that the central and state governments have launched to support fish farmers and bring about complete transparency in trade. The minister said Rs 185 crore of fish has been sold since the outbreak of the pandemic which helped to provide the people protein and made fish farmers economically stronger. He added that the Assam Apex Cooperative Fish Marketing and Processing Federation limited (Fishfed) has started hygienic and systematic fish marketing in Guwahati and a yearly average of 45,000 kgs of fishes are being sold. “During the first phase of lockdown (10/10/2020 to 28/06/2020), Fishfed sold a total of 43,983kg of fishes worth around Rs 1.41 crore, the minister said.

Assam: World Fisheries Day 2020 observed in a befitting manner in Cachar

<https://www.sentinelassam.com/north-east-india-news/assam-news/northeasts-first-ever-cow-hospital-in-dibrugarh-assam-512855?infinitemscroll=1>

"World Fisheries Day is observed every year on 21st November to demonstrate solidarity with fisher folk, community, fish farmers and concerned stakeholders throughout the world. The Department of Fisheries, Cachar also organised the day at zonal level combining three districts of Barak valley at the Office of the Fishery Development Officer, Cachar and observed the day in a befitting manner. District Development Commissioner, Jessica Lalsim graced the occasion as a chief guest. Speaking on the occasion, District Development Commissioner, Cachar Lalsim said, ""On World Fisheries Day my congratulations and best wishes to Fisheries Department and fish farmers of the three districts of Barak Valley. Under the leadership of Minister Fisheries, Barak Valley has improved manifold in fish production. During lockdown also there was no shortage of fish for citizens, although there was no import of fish from Andhra Pradesh during those days. The government is coming up with a slew of schemes to augment production of fish to make Barak Valley self sufficient in fish production.

Today as we inaugurate PMSSY schemes, Fisheries Department as well as fish farmers must pledge to ensure the objectives of the scheme is fulfilled"". She highlighted the fish farmers on the importance of fisheries in the present scenario. Prasanta Dutta, District Fisheries Department Officer, Karimganj, Harun Rashid Mandal, District Fisheries Development Officer, Hailakandi, LI Singh, District Agriculture Officer, Cachar, Subodh Das, nominee of Fisheries Minister were also present in the meeting. In the meeting nominee of Fisheries Minister described different fisheries technology as well as government schemes for enhancing fish production as he has been associated with fish farming for last 10 years. During the event, KCC sanctioned letters were distributed among the fishermen and fish farmers in the presence of branch manager and other bank officials of North East Small Finance Bank and Punjab National bank. District Fisheries Development Officer, Cachar, Rafiqul Haque described the objectives and significance of celebrating World Fisheries Day and explained about the government support in terms of different schemes to achieve the goal of ""Atmanirbhor Assam"". The progressive fish farmers namely Amaresh Das and Sajol Das from Palonghat block were felicitated. 10 numbers of KCC sanctioned letters were also distributed to fish farmers from various blocks. In the meeting, 200 numbers of fish farmers and self help groups were present.

Assam: Assam bags best state award in fisheries

<https://timesofindia.indiatimes.com/city/guwahati/assam-bags-best-state-award-in-fisheries/articleshow/79285065.cms>

"Assam has bagged four top honours in fisheries sector from ministry of fisheries, animal husbandry and dairying, including the "Best State title among the hilly states and north eastern region for top performance in fisheries sector in last three years from 2017-18. Odisha has been named the best state in marine state category and Uttar Pradesh in the inland state category. Also, Assam Apex Cooperative Fish Marketing and Processing Federation Ltd. (FISHFED) has bagged Best Quasi Government Organization award, Nagaon district the best district award and Amal Medhi of Nalbari district has bagged the best fish farmer award in Hilly States and North Eastern States of India category. State fisheries department commissioner and secretary Rakesh Kumar will be receiving the award on behalf of the state government on November 21 at the function at AP Shinde Symposium Hall, NASC Complex, Pusa in New Delhi, which will be attended union minister of fisheries, animal husbandry and dairying, Giriraj Singh, minister of state Pratap Chandra Sarangi, union secretary (fisheries), Dr Sanjeev Kumar Balyan, and other dignitaries from central government. The award carries Rs 10 lakh prize money, a certificate, a shawl and a memento.

"The selection was through very competitive matrix ranking procedures encompassing 25 different criterion and Assam scored the highest points in terms of performance. The performance was evaluated for three years from 2017-18 to 2019-20, Kumar told TOI. During the three years, the state has recorded high degree of utilization of funds received from centre under different schemes, World Bank and state government and submission of utilization certificates. The state has also scored high points in meeting targets in fish production and fish seed production. In the last three years, the state's fish production has increased from 3.27 lakh tonnes in 2017-18 to 3.37 lakh tonnes in 2019-20. Similarly sales of fish within and outside the state have also increased during the three-year period. State fishery and forest minister Parimal Suklabaidya's PRO Sailendra Pandey said, "Assam's Nagaon district has also bagged the best district award under the category of Hilly States and North Eastern States of India.

Amal Medhi of Nalbari district has won the best fish farmer award under the category of Hilly States and North Eastern States. Pandey added, "Also, Assam Apex Cooperative Fish Marketing and Processing Federation Ltd. (FISHFED) has been named the Best Quasi Government Organization under the category of Hilly States and North Eastern States of India. Nagaon district fisheries development officer Ramendra Ch. Barman will receive the award on behalf of the Nagaon district administration at the same function, which carries a cash award of Rs 3 lakh, while the award for best fish farmer award carries a cash award of Rs 1 lakh. The Best Quasi Government Organization carries a cash award of Rs 5 lakh.

Assam: Baghjan blowout affects fish diversity of Maguri-Motapung

<http://www.assamtribune.com/scripts/detailsnew.asp?id=nov1020/at064>

"Even after five months of the Baghjan blowout, the fish diversity of the Maguri-Motapung wetland ecosystem remains severely affected – corroborated by a drastic decline in its fish diversity, with some species completely wiped out. Not just diversity, the presence of fish in the wetland has also come down substantially, as borne out by low volume of catches post the disaster. This in turn has badly impacted livelihood of local fishermen. This was the observation of the NGT-appointed committee probing various aspects of the Baghjan gas well blowout in its latest assessment report of the environment and biodiversity of the affected landscape. "The pollutants from the blowout incident seriously affected the breeding season of fishes. The *Mystus* species was found in gravid condition, but from last March to July end, no fish seedling of the species was found in the (Maguri-Motapung) beel which clearly indicated that their breeding cycle was impacted, the report submitted to the NGT on November 3 stated. Besides, the report added, sudden change in body colour was also noticed for different fish species. "The dead fishes were full of mucous layer with a different kind of smell. The WII (2020) mentioned significant increase of the PAH in the water of Maguri Beel that caused death of different fish species, it said. The report also mentioned that the damage to the biodiversity and the environment would be long term and that those would have to be assessed over a long period of time. As per the report the planktons have noticeably declined in the Maguri-Motapung Beel. In a study during the June-July period this year only 11 species of phytoplankton and 13 species of zooplankton were recorded from the site that reported a rich phytoplankton (61 species) and zooplankton (210) diversity not so long ago. It was also assessed that Maguri has 87 species of ichthyofauna, out of which only 22 species were found in the survey.

Stating that the team recorded 35 varieties of dead fish species belonging to 13 families, the report said that among the dead species, 22 species were under lower-risk near-threatened category as per IUCN status. The report further said that a recent study by the same team in October 2020 revealed that some of the prominent species namely *Ompok pabo*, *Nundus nundus*, *Ailia coilia*, *Pseudeutopius atherinodes*, *Channa aurantimaculata*, and *Danio rerio* were completely wiped out from the Maguri-Motapung wetland area which is also part of the greater Dibru Saikhowa National park ecosystem. Apart from the wetland, the nearby ponds were also affected due to drastic fall in dissolved oxygen level in water. "On June 26, 2020, it was noticed that heavy toll of fishes were coming to the upper surface of water for oxygen. They exhibited lethargic and irregular body movement. Large number of fishes died on the very next day and it continued till June 28, 2020, the report said. According to the report, a majority of the fishermen who earned on an average minimum Rs 2,000 per day had to stop their main occupation up to three months, causing heavy financial loss to the local fishing community. In this major river dolphin habitat, sighting of the aquatic animal has also come down drastically, with just two numbers observed on October 18 along the river stretch from Sobha Nallah (River Dangori) to Kalmi Nallah (River Dibru). "The same team had observed 13 numbers of the river dolphins at

Koliapani Ghat on June 30, 2020. It was mentioned in the preliminary report that encounter rate of Gangetic River Dolphin in the area has decreased by 89 per cent post the blowout and also the death of an individual, it added.

Assam: No buyers, markets closed how Covid hit livelihood of women potters in this Assam village

<https://theprint.in/india/no-buyers-markets-closed-how-covid-hit-livelihoods-of-women-potters-in-this-assam-village/527215/>

"The festive season is under way in Assam. People are coming out in both urban and rural areas, getting over fears of Covid-19 amid a decline in cases. There is movement in marketplaces and restaurants. Traffic has increased too. But for two rural communities in the state's Kamrup district, the struggle to sustain traditional livelihoods is making it hard to remain hopeful. Women potters and fishermen from the Hira and Kaibarta communities in the lower Assam district have been severely hit during the pandemic, with uncertainty looming over their future. Kanuri Hira of Tarigaon village, situated about 44 km from Guwahati near Chaygaon tehsil in Kamrup, is worried about not having warm clothes and enough to eat as winter approaches. The 70-year-old has been making earthen pots as part of her family tradition for decades. However, with no orders since the lockdown, the septuagenarian has been grappling with challenges to stay afloat. "Nothing is the same, and I doubt we will be having business as usual. The government should help us with some winter clothes and food. My grandchildren are not getting proper food, Kanuri said. The women potters of the native Hira community make earthenware using ancient techniques and special 'Hiramati', a sticky dark clay found in some parts of the state a centuries-old art. Men are not engaged in this household industry.

"We used to live by selling earthenware. During lockdown, we could not fetch the clay to make pottery, and even if we make some now, where would we sell those? It has been tough for our community as we have never done any other work before, she added. Kamini Kaibarta and her younger sister Jamini could not manage to catch fish last week when it rained heavily. But she has now asked neighbourhood women from her Kaibarta community, which is primarily engaged in fishing, to join them and make a fresh effort. "This is how we are surviving sometimes a fish or two, and in the daytime we go out to collect leafy greens and kosu (taro). If it's affordable, we may also buy pulses. Since the Covid crisis, we have been forced to sell the small fish for Rs 15 to Rs 30 in other villages what would otherwise fetch us Rs 200 a kilo, said 60-year-old Kamini. Having exhausted their savings, these villagers are making do with food from resources of their own environment.

The Hiras and Kaibartas of Tarigaon The Hiras and Kaibartas are among the Scheduled Caste communities in Tarigaon. The Hiras, who are found mostly in the lower Brahmaputra valley

districts of Kamrup, Goalpara, Darrang and Nagaon, make up nearly 30 per cent of Tarigaon's 250 households. Unlike the Kumars, the Hiras make clay pots using their hands and not the wheel. The women shape the pottery using a wooden log or 'pitoni'. The pots are carefully dried in the sun and then under shade, after which they are decorated and set aside in batches for firing using different techniques. Tekeli, koloh, horiya (pitchers), different sizes of saru (earthen cooking vessels), mola (earthen cups), saki (traditional lamps) and fooldani (flower vases) are among the various products made by Hira potters. A small saru costs anywhere between Rs 20 and Rs 100. "Most of what was made before the lockdown has not been sold yet, said Kanuri Hira. A vast majority of Tarigaon's poor population belongs to the Kaibarta community. One of the earliest settlers of Assam, the Kaibartas are primarily occupied in fishing.

However, there are social restrictions on Kaibarta women in some places on selling fish. With markets closed, these fishermen and women have to contend with selling their fresh catch in nearby villages at low prices. **Impact of the pandemic** During the nationwide lockdown, the households in Tarigaon availed 5 kg rice under the Pradhan Mantri Gareeb Kalyan Anna Yojana, and the womenfolk received Rs 500 per month for three months under the Pradhan Mantri Jan Dhan Yojana. The villagers both men and women were engaged in road construction work under the public works department (PWD) when the restrictions were eased. Many continue to work for daily wages. "At present, work is under way for 15 RCC (reinforced concrete) bridges in the area besides road repairing and construction of new roads. The women get Rs 300 as they have their meals at home, and the men are paid Rs 350 for an 8 hours shift, said a government official, who did not wish to be named. "For NREGA projects, the daily wage has been increased to Rs 190 from Rs 183. Currently, road construction work is on in few revenue villages, he added. "People in Tarigaon village from the Hira and Kaibarta communities are now engaged in farming and daily labour activities. So are those from the Muchi community in adjacent Simolubari village, said Krishna Karma Kalita, the 81-year-old Gaonburah (village head). The Muchis are known to make traditional Assamese musical instruments. 'Young ones act carefree' As far as the pandemic's impact is concerned, Tarigaon has reported only two Covid cases so far. Asked why people in the village are moving around without masks and not maintaining physical distancing, Kalita said it is the youngsters who have to be constantly reminded.

"The young ones act carefree. They have to be told to wear masks and not step out so often, he said. **Finding new means of livelihood** Even as the two traditional livelihoods are affected, some in the village have abandoned their regular occupation to sell fish in the open market. "I used to be a tailor, stitching uniforms for kids, but with schools closed during lockdown, I got no orders and was forced to shut business. Now, I sell fish in Chaygaon bazaar and manage to earn about Rs 350 a day, said 45-year-old Mased Ali. Ali's friend Syez Ziarul Haque used to be a tent dealer in Chaygaon town, but now sits alongside to sell fish. "There were no big weddings since March and no one required to hire a tent. I had to leave business. We buy fish from the wholesale

market but often have to sell it for loss, said Haque. While Ali wants to get back to tailoring, Haque said he has no such plans until next year.

Assam: Wetlands undergoing rapid degradation, says study

<https://nenow.in/north-east-news/assam/assams-wetlands-undergoing-rapid-degradation-says-study.html>

"Wetlands of Assam undergoing rapid degradation in the face of anthropogenic pressure and climatic change, revealed a latest study. The study conducted by ICAR-Central Inland Fisheries Research Institute through its Guwahati Regional Centre on the vulnerability of beels of the State found that the degradation was affecting spawning and reproductive behaviour of fishes. The study, conducted in the beels of Dhubri district during 2018-19, was done under a research project 'Impact of climate change in inland fisheries and development of adaptation strategies' by a team comprising Dr BK Bhattacharjya, BK Das, UK Sarkar, D Debnath and Sona Yengkokpam. "The study focused on vulnerability of beels, their users and the fishes in them. It showed that due to natural factors like climate change, siltation and encroachment, Sara Beel was converted into a seasonally open beel from a perennially open one. This beel had a connection with the Gaurang river 20 years ago, The Assam Tribune quoted BK Bhattacharjya, principal scientist and head (acting) at ICAR-CIFRI Guwahati Regional Centre as saying. The study revealed that over the past 30 years, about 70 per cent of the beels experienced reduction in water-spread area.

High level of siltation, encroachment, detachment of marginal areas due to construction of roads, etc., caused reduction in the water-spread area from the original area, mostly in the dry season. "As a result, spawning and reproductive behaviour of the Indian major carps have been impacted. Flood in Assam during the rainy season is as severe a problem for the fisheries sector as waterless-ness during the dry season, which makes a wetland all the more vulnerable. "As per information available, most of beels of Assam experienced major flood in 1988, 2014, 2017 and 2019, he said. To cope with the impact of climate change and for promoting sustainable wetland fisheries, various adaptation strategies were identified by the scientists. These are temporary pre-summer enclosures, deep-pool refuge, autumn stocking, submerged branch pile refuge, and floating aquatic macrophyte refuge (jeng/katal). "Enclosure aquaculture in the form of pens and cages can not only prevent fish from escaping during flood, these structures can be shifted to deeper areas of the wetlands in case of reduced water depth during the dry season, making these technologies climate-resilient.

Enclosure culture technologies are simple but useful tools for producing stocking material (advanced fingerlings) and table fish that potentially can improve socio-economic condition of beel fishers, he said. Bhattacharjya said introduction of exotic fishes in natural water bodies

from nearby ponds and culture fisheries could take place due to natural disasters like flood, which potentially can affect ichthyofaunal biodiversity in those water bodies. “Majority of the beels of Assam reported exotic fishes like *Cyprinus carpio* (common carp), *Ctenopharyngodon idella* (grass carp), *Hypophthalmichthys molitrix* (silver carp), *Hypophthalmichthys nobilis* (bighead carp) and *Piaractus brachypomus* (pacu). “Surprisingly, Pacu, a highly invasive species locally known as ‘Rupchanda’, was reported in a few beels (like Hakama beel) that threatened small indigenous fishes of that wetland, Bhattacharjya added. Worryingly, there has been a decrease in fish catch per person per day in a majority of the beels as compared to the past 30 years. “With increase in population, the number of fishermen has also increased causing reduced catch per capita. But the phenomenon could also be attributable to the degrading nature of the fish habitats in terms of reduced water-spread area, pollution, loss of riverine connection, etc., and reduced number of fish species in the beels studied, he said.

Assam: Total of 170 beneficiaries were selected for inputs for fish culture

<https://www.sentinelassam.com/north-east-india-news/assam-news/total-of-170-beneficiaries-were-selected-for-inputs-for-fish-culture-505738>

"A total of 170 beneficiaries were selected for inputs for fish culture under Borjalenga block cluster here on Monday. Under the Assam Agribusiness and Rural Transformation Project 2019-20, a World Bank funded project, six numbers of Farmer Producer Groups were formed for providing financial assistance in the form of fish feed, fish seed and other essential fish culture materials, stated a press release. A total of 24 metric tonnes of fish feeds and other inputs were distributed by Minister for Fisheries, Parimal Suklabaidya in the presence of Deputy Commissioner, Cachar, Keerthi Jailli, DFDO, Rafiqul Hoque, Nodal Officer, Agriculture Department, Ranjit Sarkar, Block President, Borjalenga, Subodh Das and GP President, Irongmara. The objective of the Assam Agribusiness and Rural Transformation Project is to 'add value and improve resilience of selected agriculture value chains, focusing on smallholder farmers and agro-entrepreneurs in targeted districts of Assam'.

Assam: National Fishery Development Board to set up regional centre

<https://timesofindia.indiatimes.com/city/guwahati/national-fishery-development-board-to-set-up-regional-centre-in-assam/articleshow/78558068.cms>

"The National Fisheries Development Board will set up its regional centre in Assam at an initial investment of Rs 50 crore, which among other facilities will have a state-of-the-art Brood Bank that would be a game changer for the fishery sector in the entire northeastern region. Assam fishery minister Parimal Suklabaidya in his announcement on Twitter said, "With the first initiative towards the establishment of regional center for National Fisheries Development Board, Northeast India & especially Assam moves a step closer to take the production, trade & research for the development of the sector to another level. He also tweeted that state cabinet on Wednesday has approved 30 bigha of government land at Amingaon for setting up this regional centre. Commissioner and secretary of the state fishery department Rakesh Kumar said that this centre in the state will be the second of its kind focusing on fresh water fish species after Odisha.

"This proposal has been lying since 2014 but due to persistent follow-ups from this government, we are all set to have the regional centre of National Fisheries Development Board here, Kumar said. He said that hatcheries here at present do not have good quality of seeds and are not resistant to many diseases as a result of which mortality rate is very high. "With this centre coming up, we will get a state-of-the-art brood bank that will offer quality seeds, which means quality products. This is going to change the entire scenario in fishery sector not just in Assam, also in entire northeastern region, he said. He added that the centre will also benefit the fish farmers in a big way by providing training on new techniques as well as demonstrations. "Initially National Fisheries Development Board will invest Rs 50 crore and they will start work as soon as the state government issues the notification, Kumar said. For long the primary focus of the Hyderabad-based National Fisheries Development Board has been on coastal states having coastal fisheries only.

Manipur, Nagaland, Mizoram, Assam, Meghalaya and Bangladesh: Barak: Our economic and ecological security

<https://www.thesangaiexpress.com/Encyc/2020/9/15/Barak-Our-economic-and-ecological-security.html>

"The Barak is the second largest river in the North East Region after the Brahmaputra. Barak has a length of about 900 kilometres out of which 564 kilometres fall in India and it runs through Manipur, Nagaland, Mizoram, Assam, Meghalaya and Bangladesh. Veorii is the Proumai name for Barak and it originates as a small stream in the midst of the lofty hills covered by the thick forests of the Liyai village in the Proumai country. This stream is later joined by Deirii stream and Makhan stream as it flows down south through the Biiso valley. The Khiiri stream joins the Barak before reaching Karong. Interestingly, a small stream originating from T Khullen flows towards the North to join Barak as Barak takes a turn towards the North and flows into the Maram country. After crossing the Maram country the Barak flows southwards into the

Zeme, Liangmai and Rongmei territories of Manipur and Nagaland. As it runs further south it passes through CCP and Jiri district and enters the plains of Cachar in Assam.

Finally, it flows into Bangladesh to join the Brahmaputra and Ganga. Barak changes its name as it flows down the territories different communities. The Marams called the Barak Mbii Karii, the Zemes Mbeuki, the Liangmais Mbiuki, the Rongmeis Ahu, the Hmar Tuiruong and so on. Some of the salient features of Barak are as follows. 1. Wildlife of Barak: Barak is said to be the second richest river in terms aquatic biodiversity. Barak is home to more than 2000 aquatic species of fishes. The highly endangered Siamese Crocodile, Susu Dolphin and Smooth coated Otter. Barak is not only a haven for aquatic species but is also a home to many mammals, reptiles and birds. The thick lush green forests of Chakha- Rienta forest, the Piulong forest, Tousem- Phoklong forest, Chingkou- Makoi forest are some of the important catchment forest of Barak and its tributaries. The bamboo brakes and tall grasses along the bank of Barak is the favourite roosting place of the migratory bird called the Amur falcon. Some of the important tributaries of Barak are Irang, Makru, Jiri, Leimatak/ Aga etc. 2. Waterways: Barak provides excellent and cheap water ways for transportation mainly for the people living in the Barak valleys. 3. Economy: The fresh water fish of varied species provide an excellent source of income for the poor people living along the course of Barak.

The fresh water fish also has high nutritional values. Fishing industry of Barak river is a thriving business. The Fishing industry provides jobs to many people and also earns a huge revenue for the Assam Government. Fishing in the upstream of Barak is an important source of income for the people living in the catchment areas. Angling, throwing nets, laying traps, throwing spears, using fish stupefying leaves and barks are some of the traditional methods practised by the tribal communities. Fishing is not only a source of income but also leisure activity. 4. History and Legends: Barak is not only rich in the aquatic life but it is also very rich in myths and legends. Many tribes of Manipur, Nagaland, Assam have their migration histories, folktales, legends and folksongs linked with Barak. Tribal myths and legends praise Barak river as gentle, benevolent and human friendly river, hence, as the legends go many streams and rivers joined Barak. According to the tribal myths and legends beautifully curved cosmic formations are believed to be the Barak river and its tributaries. Threat to Barak: Today, Barak, the most important river is at the brink of becoming a dead river. More than half of its aquatic animals and fishes have become extinct and many species are struggling to survive due to excessive human intervention. The water flowing in Barak is not only drying up but has become highly polluted by human activities.

It is alarming to see Barak being polluted right from the source area. The chemical effluents flowing into Barak from the Steel factory in Senapati town and the human waste produced by the Senapati denizens have become a serious threat to the health of Barak. Fishing in Barak and its

tributaries by using detonators, chemicals, electric currents have led to destruction of many aquatic species and the river ecosystem. One serious threat to Barak was an attempt to Construct a mega dam known as the Tipaimukh Dam on Barak river at Tipaimukh in the early the part of the eighties. However, now, due to strong public protest in India and Bangladesh the Project has been abandoned. If the construction had gone ahead many precious aquatic wildlife could have been wiped out and huge cultivable land areas could have been submerged. Another serious threat to the health of Barak is the Unregulated timber extraction by timber mafias in the Catchment areas of Barak tributaries. Heavy timber extraction has contributed in hastening the drying up of water in the Barak river. We, the tribal people who have benefited from the Barak river system have completely failed to realise the importance and benevolence of Barak. If we had followed the sustainable practice of forest management practised by our forefathers or had timely sought the intervention of the experts to help us manage our forest, we could have saved the rich natural heritage which we have inherited from our ancestors.

We must also be aware that Clean air is the basic right of every human being as enshrined in Article 21 of the Indian Constitution. No individual, group of people or Company should be allowed to indulge in any activities which can destroy the source of clean air and also pollute the environment and rivers. As responsible citizens we must not fail to point out and report all the illegal activities to the authorities for immediate necessary action. Barak has nurtured us and still has many good things to offer us. Barak offer us a good life, sound economy and a clean environment, provided we are ready to adopt sustainable methods of utilising our rich natural resources. We must also remember that the first step to conserve Barak is to conserve the catchment forest of its tributaries. If we continue with our undmindful habit of destroying our forests we will only be contributing towards the drying up of Barak and adding on to the woes and miseries to the sufferings of the people who face devastating floods every year. One significant thing we need to know is that, the health of Barak reflects the life of those who depend on it. If the Barak is healthy it is evidence of the healthy symbiotic relationship between the river and the people. However, on the other hand if Barak is drying up and the fishes are disappearing it shows that the people have become thoughtless and indigent. This bond between man and river applies to every river. Some Ecosystem services Barak can provide are:-

1. Clean and cool environment
2. Clean drinking water
3. Stable riverine ecosystem
4. Enhance Cultural and Esthetic values
5. River Rafting
6. Angling
7. Boating
8. Traditional and recreational fishing
9. River tracking
10. River Camping
11. Healthy food supply, and the list goes on.

Of late, the Barak Heritage Foundation an NGO based in Senapati has come up with a brilliant idea to conserve Barak and its tributaries. It is an idea whose time has come.

This noble needs to be emulated by every village and town which are situated along the Barak. Here are some activities recommended for immediate implementation in order to conserve Barak river.

1. Identify catchment forest of Barak and its tributaries and motivate the villagers to

declare them as Community Reserve or Village forest reserve. 2. Announce rewards and incentives for those villages which diligently conserve forests. 3. Set up ""Watch Barak Volunteers"". 4. Check Pollution activities polluting Barak. 5. Press Manipur Government to carry out resource mapping of Barak and its tributaries at the earliest.(Identification and documentation of flora, fauna and aquatic species) 6. Provide modern sewerage system and solid waste disposal system in the villages, towns and cities to prevent the wastes from flowing into Barak. 7. To tell the state Forest Department to immediately stop issuing permit for extraction of timbers from the catchment forest of Barak and its tributaries. The writer is former Lok Sabha MP (Manipur Outer Parliamentary Constituency)

Assam: Baghjan oil well blowout singes fields, fish – and livelihoods

<https://morungexpress.com/assams-baghjan-oil-well-blowout-singes-fields-fish-and-livelihoods>

"For more than 100 days, the fire raged, a tall blaze of angry orange that killed the fish in ponds and streams, destroyed homes and turned to ash the green farmlands around the Baghjan oil field in Assam's Tinsukia district. The fire at an Oil India Ltd well that started with oil and natural gas gushing out uncontrollably on May 27 and went up in flames on June 9 was controlled on Sunday, said reports. But the trauma will take much longer to subside, said residents of the area around the oil field that has 17 oil wells and five gas wells. The sight of the flames that coloured the skies saffron and the sound of the blaze have led to people in Baghjan village complaining of disorientation, sleepless nights and confusion. "It was like hearing 100 helicopters constantly over my head, said Manoj Hazarika who hasn't slept properly in weeks.

The tales find wide echo in the village of nearly 500 residents, many who earned their living fishing, tilling their fields, some with betel nut trees, and working in the tea gardens close by. It is a village ruined, said locals, estimating that several homes have been completely burnt and about 500 hectares of land destroyed. Kajoli Hazarika, whose home is just about 200 metres from well no 5 which caught fire, added that the area has also been experiencing frequent tremors since the blowout in June. ""When the massive fire burnt a huge amount of oxygen in the periphery, an air vacuum was created. This resulted in sudden air movement and created minor local tremors, an OIL official explained. The scientific explanation does little to comfort Kajoli Saikia, who recounts in vivid detail the day it all began. It was 10:30 am on May 27, she was going about her usual household chores when a series of "earthquakes and a strange, viscous rain began. A massive sound followed, forcing the villagers to step out of their homes to figure

out what was happening. “The tin roof of my house, the windows and doors began to shake, Saikia said. In a couple of days, the fish in ponds and streams were dead and ashen white, added Prakash Hazarika. He said he has seen cows and goats giving birth to dead calves and kids, fish dying and birds struggling to take flight.

A carcass of a cow at the edge of a wooded area is a sign of the ravages the fire has wrought. The “strange rain described by locals was oil and natural gas pouring down on the houses, fields and water bodies around the oil field. Thirteen days later, it turned into an inferno. Dilip Mala, a labourer who was working at a construction site rushed to attend to his pregnant wife Sumitra, when he saw fire engulf the surrounding areas. There was chaos and panic, he said. Villagers rushed to get hold of whatever belongings they could from their homes and fled. He said he did not think the fire could be controlled but firefighters were able to douse the flames before they could spread further. Two firefighters died in the process due to burns and injuries while on duty. But the gas well fire continued to spew flames into the air, a tall, narrow blaze that contaminated the waters and fields and changed the micro climate of the area. The picturesque village, with tea gardens all around and the oil field in its vicinity, lies in the Maguri Motapung wetland area. Maguri is home to numerous species of birds, including migratory birds, and animals and a critical fisheries resource for the area. As their parents and others come to terms with their losses, children can be seen looking for fish swimming in the waters. But there are none to be seen. Lumps of crude oil have settled in the streams flowing into the wetland, killing the fish and posing a danger to humans and animals who drink water from it.

A bamboo hut bears mute witness to the desperation of the times. A bed and broken fishing nets are a reminder of what was once a bustling home. Locals in the area said 15-20 such huts in the area have been burnt or abandoned since the blowout. “The damage to the ecosystem has been grave and largely irreparable, the ultimate impact of which will be felt in terms of ecological imbalances and lost livelihood opportunities, said a statement by Wetlands International South Asia, an NGO dedicated to the conservation and sustainable management of wetlands in South Asia region. “The fact that this accident has taken place when the world is reeling under the impact of COVID-19, signaling our broken relationship with nature, is striking. The Dibru-Saikhowa National Park, a designated biosphere reserve on the banks of the Brahmaputra and home to tigers, wild horses and other animals, is close to the blowout site. Hoping to pick up the pieces of their lives, the villagers have gathered around the deputy commissioner’s office in Tinsukia, about 40 km away. For more than two weeks, they have been staging a sit-in to demand better shelter and future of their children, and justice for those who have lost their lives. Kajoli Hazarika, for instance, said she has received compensation of Rs 20 lakh plus Rs 30,000 along with 11 other families whose properties were completely ravaged in the fire. But that is just not enough for the more than six acres of farmland that has been reduced to ashes. She said

she doesn't know what to do with the money – buy land, make a house or find an alternative livelihood. Prakash Hazarika echoes her distress.

“Even after compensation, what will I do anywhere else. My life is here. Here I can sustain myself by fishing and other activities. Anywhere else, I will be a misfit. I am worried about my two children and their future, he said. The Assam Pollution Control Board had issued a closure notice to the Baghjan Oil field in June on the grounds that OIL had been operating without obtaining prior consent to establish and operate from the Board. Arnab Kishore Bordoloi, an OIL engineer, lost his life due to high voltage electric shock on September 9, 2020. Two OIL officials were suspended for alleged negligence of duty at the gas well site, while a show cause notice was sent to John Energy Pvt Ltd, the outsourced private operator of the well.

Assam: Nets, traps and hooks for fishing

<https://www.thehindubusinessline.com/blink/shoot/assamese-nets-traps-and-hooks-for-fishing/article32576874.ece/photo/1/>

"Fishing is serious business and an age-old tradition in Assam, aided by a wide range of nets, traps and baits made of bamboo and cane. Assam's natural wealth has given it many rivers, tributaries, wetlands (beel), swamps and ponds. This makes fishing an integral part of Assamese culture. The people of the state have mostly non-vegetarian food habits, rice and fish curry being a favourite combination. Instead of buying fish from the marketplace, many in Assam like to fetch it from nearby ponds and rivers. They also practise a variety of fishing techniques using a wide range of nets and gear. Most of the gear is made with bamboo and cane, and sold at the haats (weekly markets) in villages and small towns. Villagers, especially, are adept at fishing and they sell a part of their catch at the markets. The choice of fishing gear and technique depends on several factors: Season, shape of the waterbody and the type of fish, for instance. In Assam, community fishing is a tradition that sees villagers gather around a beel with nets and traps. On an ordinary day, people from over 20 villages come together for fishing. During festivals, the number of people can grow to thousands. This is when one gets to see the whole gamut of nets and traps in use (see illustrations) polo, jakoi, juluki, koilengi jal, saloni and so on. Community fishing is especially popular in the days following floods a common occurrence in Assam during monsoon and harvest. Men, women and children take part in it enthusiastically. On the eve of Magh or Bhogali Bihu, the harvest festival celebrated in January-February, villagers enjoy a feast dominated by dishes made with fish from the wetlands. The varieties of fish, big and small, available in the region are innumerable, but among the more popular are borali (a kind of catfish), xol (snakehead murrel), puthi (a small freshwater fish) and bhangan (small fish of the

carp family). Fishing is not just an Assamese tradition. It is also a lifeline for the village craftsman whose only income comes from the sale of fishing gear.

Assam: APART takes Initiative to Popularise Freshwater Prawn Culture

<https://www.guwahatiplus.com/daily-news/apart-takes-initiative-to-popularise-freshwater-prawn-culture-in-assam>

"Under the World Bank aided Assam Agri-Business and Rural Transformation Project (APART), the Department of Fisheries, Assam has started freshwater prawn polyculture demonstrations with the technical support of World Fish, Malaysia. The demonstration will be taken up in 80 beneficiary ponds covering 21.54 hectares in 3 districts, namely Kamrup (M), Nalbari and Goalpara. Minister of Fisheries, Government of Assam, Parimal Suklabaidya, formally released the prawn seeds and distributed inputs during the function held in Bagibari Village of Kamrup (M) on August 31. "The net annual profit from 2.0 Bigha carp polyculture is 1.30 Lakh, where the expected annual profit of Polyculture of Freshwater prawns with Carps is about 1.80 Lakh, where the additional profit by stocking freshwater prawns in 2.0 Bigha water area is about 0.50 Lakh, said the minister, explaining the project to the gathering present. Freshwater prawn farming is an environmental friendly aquaculture farming system and Assam's agro-climatic condition is suitable for freshwater prawn production.

Carp-prawn farming will flourish in a big way and will boost the confidence of the rural youths, mainly the migrated labours due to COVID pandemic for coming forward in freshwater prawn-fish polyculture system, the Minister added. Carp-prawn polyculture is practised based on the principle that the food materials available in the water body are fully utilized, waste is minimised and profit per unit area is increased. In this practice, the culture of prawns is done along with fishes in the ponds. The freshwater prawn has a very high market value, is preferred by consumers in Assam besides having good export potential. Traditional farming of freshwater prawn is practised in different parts of the country in a very limited area relying on riverine seed collections and seeds from natural resources. Commercial freshwater prawn seed production in many the coastal states have now made it possible to expand the freshwater prawn farming in different parts of the country. Giant freshwater prawn (*Macrobrachium rosenbergii*) is introduced in the APART Project demonstrations along with Catla, Rohu, and Grass Carp in polyculture system.

Assam: All About Aquaculture in Assam and Government Subsidies Provided to Fish Farmers

<https://krishijagran.com/agripedia/all-about-aquaculture-in-assam-and-government-subsidies-provided-to-fish-farmers/>

"The province of Assam in the northeastern region of India has a superb sub-tropical atmosphere for the expansion and improvement of fresh water fish culture in the state. Fish farming assumes a significant part in sustenance as well as in the provincial economy of the State. The state infers an amazing open door for improving the provincial economy through the improvement of small scale fish farming. Major push is required towards creating more awareness and improvement of the skill sets of the fish farmers and their farming practices so that later on they would be in a situation to extend their exercises with money made accessible locally. Fish farming using technology is new for the farmers in Assam and given proper training and accessibility to new techniques and money, fish farming is surely bliss in the region. Assam's fishery resources and allocation: Assam is blessed with more than 2.86 lakh ha of different water resources. Different water resources include ponds, rivers, tanks, beels etc. The state also has 2 major river systems namely Brahmaputra and Barak along with their tributaries. More than 90 percent of people in Assam eat fish and the fish market is on a rise. The fisheries sector acts as a major force behind the socioeconomic development of the state. Fish production and related activities can create a lot of employment opportunities, specially for the rural Assam.

The total number of freshwater species found in Assam is more than 200 and the fish production level of the state for the fiscal year 2016-17 stands at about 3.07 lakh MT. The basic horizontal expansion strategy is achieved through formation of new ponds and lakes and through recovery and redesigning of the existing ones. Then again push on vertical development is given through efficiency upgrade with selection of improved and progressed culture practices and better maintainable administration practices. Current condition of development and administration of resources: Despite the fact that the assets potential for fish creation is high, scientific fish cultivation is being rehearsed impressively in a little segment. Fisheries systems have been embraced in a portion of the beels and low-lying zones which has expanded the production to around 1600 kg/ha/Year. Riverine fisheries systems in the state are currently under no or very minimal intervention, however the revenue fisheries , which covers the rivers and beels are leased out to interested individual or societies; are under the supervision of Assam Fisheries Development Corporation Ltd.

**Assam Government Schemes: States Own Priority Development Programme (SOPD):
Major schemes under SOPD includes:**

""MatsyaJagaran- GhareGharePukhuriGhareGhareMaach"" : This scheme is focusing on people keen on taking up fish culture through development of new ponds in a proper area with a mission to extend fish culture region and production of more fish through scientific farming, creation of independent work opportunity and financial upliftment. Seed Bank Programme: Building new ponds for seed rearing (fish). This Programme is focusing on those cultivators that are keen on pursuing fish seed raising business through development of new raising tanks or

ponds in a reasonable land with the goals of making fish seed accessible as fingerlings, extension of fish seed raising territory, financial upliftment of the rural individuals and making independent work openings. **Majuli Development Programme** This scheme includes 2 sub schemes namely Seed Bank Programme and Fish Cum Pig Culture in the existing pond after renovation. Seed Bank Programme targets for an area coverage of 4 ha and expects an annual turnover of 6 lakh fingerlings which will benefit nearly 28 individuals. Fish Cum Pig Culture in the existing pond after renovation scheme is targeted to those farmers who have prior experience with pig husbandry. The individuals must be willing to take up this dual system of fish farming i.e. pig and fish together in the same system. The scheme specializes in the utilization of the same space in a more efficient way and also emphasizes an increase of income per unit area and reducing the cost of the overall fish farming process.

Assistance to women self help groups (SHG) for production of other value added fish products: In spite of the fact that locals of Assam prefer fresh fish, there is always a market for “ready to cook items along with other fish items such as fish pickle, wafers, balls, dry fish and so on particularly for the urban territories. Fishery department of Assam has started this building program in collaboration with Central Institute of Fisheries Technology (CIFT), Cochi and College of Fisheries, Raha for interested ladies and groups. This scheme is proposed to help chosen women SHGs with the goal of strengthening women entrepreneurship in the fisheries field along with women empowerment. This scheme greatly promotes the value added fish products in the market. Nearly 15 women SHGs will be selected by the District Fishery Development Officers.

Training of scheme beneficiaries and farmers: Before availing the above mentioned schemes, most of the farmers are using old techniques in their farming. With improvement and asset usage, the fish production and the pay can be expanded to a significant degree. In order to instill a creation program on a scientific basis, building the capacity of the farmers is exceptionally fundamental. This scheme is planning on building the capacity of the farmers and the scheme recipients by implementing scientific procedures and providing guidance and knowledge. Around 450 farmers are focused under the plan.

Assam: Dams and embankments worsen floods

<https://indiaclimatedialogue.net/2020/08/31/dams-and-embankments-worsen-floods-in-assam/>

"In the second half of August, the waters have started receding after the latest round of floods in Assam. After killing over a hundred, displacing millions and damaging crops and property worth billions, they leave behind a deposit of sand rather than fertile silt on farmland. All residents know they will struggle to make ends meet before the inevitable next round of

floods. For centuries, people living close to the many rivers of the Brahmaputra basin have learnt to live with minor floods. They built their houses on stilts to let the floodwaters flow below and they profited from the fertile silt left behind when the floodwaters receded. But in recent decades, floods have become a cycle of disasters due to a combination of climate change, ill-planned dam building and embankments that stop minor floods but fail with the bigger ones. The most important effect of climate change that affects the flood cycle is fewer rainy days during the monsoon, but heavier rainfall in those days.

Add to this faster snow melt due to higher temperature in the glacier region where most of the rivers originate, either in Tibet or in India. This combination means all the rivers are already carrying more water during the summer due to snow melt, and then come the huge water pulses caused by very heavy rainfall over a short period of time. This year, the problem started even before the monsoon reached Assam. After devastating the southern districts of West Bengal – including Kolkata – and adjoining parts of Bangladesh on May 20, Cyclone Amphan petered out in the Brahmaputra valley that takes up most of Assam. That means all the moisture the cyclone retained fell as rain in the valley. The flooding started at once. Heavy early monsoon rains that added to woes were expected, but the flooding became disastrous – as it has been doing every year in recent memory – due to two kinds of ill-planned engineering, dams and embankments. Dams hold back or divert almost all the water in almost all the rivers of the basin now. Flood control is one of the stated reasons for building dams. But in recent years, dam managers have been forced to open the gates every monsoon to save the structures – and that leads to a more ruinous flood pulse than would have occurred otherwise.

Stopping silt The other huge problem with dams is that they stop silt. Being the youngest mountain range in the world, the Himalayas are still crumbling, and rivers flowing down from this range carry the crumbling rocks in the form of very fertile silt that used to rejuvenate the farmlands of south, southeast and east Asia for centuries. This is why the floodplains of the Ganga-Brahmaputra-Meghna, Arawaddy, Chao-phraya, Mekong, Pearl and Yangtze rivers have provided the world's most fertile farmlands. Not any more. With the silt stopped behind dam walls, floodwaters only scour out the riverbanks without building fresh land with the silt. On top of this erosion, the rushing floodwaters scoop out sand from the riverbeds and spread them over farmland, making the soil infertile when the water recedes. See: Brahmaputra leaves a desert behind. This imbalance between erosion and silt deposition in recent decades has now been documented from 1988 to 2015, through satellite imagery analysed by the Assam government's Brahmaputra Board. It found 798 sq. km had been eroded, while 208 sq. km of fresh farmland had formed through deposition.

The Chinese government has built and is building four hydropower projects on the Yarlung Zangbo, as the Brahmaputra is called in China. It claims that three of the four are run-of-the-river

projects that don't hold back any water. But they do hold back silt. On the Indian side, the big dams on the anvil right now are the Dibang valley and Lower Subansiri projects. Plus, at least 168 agreements have been signed between the state government of Arunachal Pradesh and dam building companies. This in a situation where floods have been significantly worsened by release of water from Ranganadi, Kopili and Doyand projects. Engineers from India's Central Water Commission, who manage the Kurichu dam in Bhutan, have also opened the floodgates, resulting in submergence in western Assam. Unkept promises The current Assam government vowed to oppose big dams just after it was voted to power. But since then, it has done nothing to keep that promise. See: New Assam government vows to oppose big dams. “In 1980, the government started planning big dams. Earlier, the animals knew how to escape the floods and the people knew how the river behaves, said Mirza Zulfiqur Rahman, visiting research associate at the New Delhi-based Institute of Chinese Studies.

“Now, the government has invested so much into interventions that the people have lost their traditional methods to cope with the river. “These infrastructures don't improve the situation because the people continue to suffer; this is just a political play. The core problem with the government is that it does not have a holistic understanding of the ecological landscape. Any solution you introduce to the river basin without studying the ecology of the area will be unsuccessful. Add to the dams the ad hoc building of embankments in an effort to control floods. For decades now, Assam has suffered because embankments keep getting damaged or washed away altogether whenever a large flood occurs. Allegations of poor planning, corruption and shoddy construction are as old as the embankments. Still, the authorities' default option every year is to build more embankments while they repair and strengthen old ones, only to see them washed away again. And again. Rahman points to another negative effect of embankments – they cannot stop the floodwaters from submerging the land, but they do stop the floodwaters from receding back into the rivers.

So the land remains waterlogged much longer than it did earlier. “Before the embankments were built, the floodwater had space to come and go, he said. “But now it cannot go back. This waterlogging means more diseases and a loss of farmland. Overall, Rahman says, “In the past 60 years due to the embankments, the floods have become worse. The Assam government feels it has a solution for everything and does not require consultation or advice. The government only talks to engineers and not to social scientists. The local communities have no environmental democracy. They cannot make any decision on the river. There are successful ways to control floods. The commonest is to drop boulders at an angle next to the riverbank, so that the flow is diverted. When done properly, it works, reduced erosion along the town of Dibrugarh and Dhubri are proof. Another way is to drop permeable screens. They trap silt, which prevents erosion. In some of the smaller rivers of the basin, residents have traditionally used bamboo fences as permeable screens.

Assam: Govt takes various measures to make State self reliant in fish farming

<http://www.newsonair.com/News?title=Assam-govt-takes-various-measures-to-make-State-self-reliant-in-fish-farming&id=397855>

"In Assam, many youngsters are engaged in fish farming of late in a bid to attain the objective of the Aatma Nirbhar Assam. The Commissioner- Secretary of Fishery department Rakesh Kumar said that the state government has taken various measures to make Assam self reliant in fish farming. Mr. Kumar said that 180 crore rupees worth local fish is sold in the state during past few months and 1200 vendors are associated with fish trade. 600 members of the Ramgaon Unnayan Samiti at Darrang district are involved in fish culture in 65 bigha areas under Blue Revolution apart from other activities. The annual income of the samiti is gradually increasing due to their efforts. The Department of Fisheries is also undertaking a Cage Aquaculture project at 15 wetlands in the state.

Assam: Flood situation continues to improve; 1.43 lakh affected in 15 districts

<https://www.outlookindia.com/newscroll/assam-flood-situation-continues-to-improve-143-lakh-affected-in-15-districts/1909860>

"Flood waters continued to recede in Assam, even as over 1.43 lakh people are still reeling under the deluge across 15 districts, an official bulletin said on Wednesday. Goalpara district remained the worst-hit with more than 86,500 lakh people affected, followed by Morigaon and Bongaigaon, the Assam State Disaster Management Authority (ASDMA) said in its daily flood report. Till Tuesday, over 1.95 lakh people were hit by the calamity in the 15 districts, which also include Dhemaji, Biswanath, Baksa, Nalbari, Chirang, Kokrajhar, Kamrup, Nagaon, Jorhat and Sivasagar, it said. At present, 270 villages are under water and 21,476.19 hectares of crop areas have been damaged across Assam, ASDMA said. The total number of people losing their lives in this year's flood and landslides stood at 136. Authorities are running 51 relief camps and distribution centres in six districts, where 3,105 people have taken shelter, the report said. The mighty Brahmaputra river is flowing above the danger mark at Dhubri town and Nimatighat in Jorhat district, it said, adding, erosion has been witnessed at different places of Udalguri and Sonitpur districts. A total of seven camps out of the 223 at Kaziranga National Park and one out of the 40 at Rajiv Gandhi Orang National Park have been affected by the deluge, ASDMA said. Altogether 153 different animals have lost lives in the calamity so far, while 172 others were rescued at Kaziranga National Park, the bulletin said.

Assam: Job cards, the sole hope for Assam's flood-hit

<https://www.thehindu.com/news/national/other-states/job-cards-the-sole-hope-for-assams-flood-hit/article32243037.ece>

"Goalpara, one of seven aspirational districts in the state, is seeking turnaround from COVID-19 and flood. Dharmeswar Banai of Pub Zira village was one of some 10,000 migrant labourers who returned home in eastern Assam's Goalpara district, mostly from southern and western India after the nationwide lockdown was clamped on March 25. Not keen on migrating again for work, he applied for a job card at the central screening centre before the combination of flash flood from the adjoining hills of Meghalaya and a major breach in an embankment on the Brahmaputra devastated the district. Brittle embankments add to flood woes in Assam. He is among 1,041 such applicants given job cards with a skill test over the past couple of months. Mr Banai's village was spared the kind of damage that Sujit Hajong's village Dhamor Reserve, about 60 km west, suffered. The latter lost his entire paddy crop on about 5 bighas of land, as did most of some 800 families in his village. Assam has since May 22 lost 109 people to several waves of floods affecting 56.72 lakh people across 5,309 villages and damaging crops on 2.58 lakh hectares. Twelve of the dead were from Goalpara district where 4.70 lakh people almost 46% of the total population. "I have lost the entire investment of toil and money for the year. There are hardly any jobs because of this corona and lockdown.

The government has promised Gandhi (Mahatma Gandhi National Rural Employment Guarantee Scheme) work, and the job card I have is the only hope now, said Mr. Hajong. Goalpara has a total of 142,803 job card holders. Assam floods affect around 15 lakh people in 23 districts. Most of Goalpara's job card holders are not sure when they would be engaged in Rural Development (RD) projects. "Such work will have to wait till the flood season is over, it seems, said Aftabul Ambia, member of district's Takimari Zilla Parishad. But RD works such as Prime Minister's housing scheme and MGNREGS have begun in dryer areas, district authorities said. "We made job card application form available for the returnees upon arrival at the central screening centre. Many of them already had job cards, and 1,041 of the 3,500 non-card holders who applied were issued fresh ones with 287 already being engaged, Goalpara's Deputy Commissioner Varnali Deka told *The Hindu*.

Community projects "We formed a committee that created a database of skills of the returnees so that RD jobs provided can match their skill sets, she said. The standard operating procedure issued by the Panchayat and Rural Development Ministry lists a slew of jobs. But an assessment of the ground situation has made the district authorities focus on a few community projects such as fish farming ponds, plantations, peripheral farm bunds and Prime Minister's rural housing scheme. Used PPEs washed up in Assam floods, raise concern over COVID-19 spread "The double blow of COVID-19 and floods impacted several innovative employment generation and educational projects. Still, as an aspirational district, we did better during the lockdown in health and nutrition and other sectors than in February this year, Ms. Deka said. Goalpara, one of seven aspirational districts in Assam, has been among the worst flood-hit districts.

Assam: Supporting Communities Affected by Floods

<https://reliefweb.int/report/india/supporting-communities-affected-floods-assam>

"Lives and livelihoods of communities across South Asia have been devastated by the recent floods, adding to the miseries of people already dealing with the COVID-19 pandemic. In India's northeastern state of Assam, more than 30 lakh (3 million) people across 2,300 villages are reeling under the wave of floods with over 100 deaths reported already. In some parts of the state, these challenges have been compounded by the outbreak of seasonal vector-borne diseases, including Japanese encephalitis, and the African swine flu. The Indian Red Cross Society (IRCS), which has been on the frontline of the nationwide COVID-19 response since March, has been providing vital support to the flood-affected communities with the support of the ICRC. More than 1,500 Red Cross staff and volunteers are on the ground providing relief across 21 districts of Assam.

Distribution of tarpaulin sheets and relief items began immediately after the advent of the floods and till now, 13,600 flood-affected people have received support. The tarpaulins – provided by the ICRC – were pre-positioned at the IRCS Assam State Branch in anticipation of the recurring tragedy in the state. Diganta Bujarbaruah, General Secretary, IRCS Assam State Branch, said, "This year, 50,000 tarpaulins were pre-positioned for 50,000 families across 12 zones across the state so that people can receive help immediately without delay. The risk is inherent in the current COVID situation, but the courage volunteers have shown in the field is remarkable. Red Cross staff and volunteers are making their way through the flood waters carrying tarpaulin sheets, dry food, drinking water, mosquito nets, hygiene kits, and other relief items. On a good day, these teams are able to set off on non-motorised boats – the only mode of transport to reach villages that have been completely cut off – and distribute aid to people taking shelter on the embankments and roads. Primarily from the farming and fishing communities, their homes and cattle sheds are submerged – with no trace of the few belongings they used to own. Unsurprisingly, the biggest worry people have at present is their children's health and safety. The shelters have barely enough space to practice physical distancing and hygiene-sanitation have taken a backseat in the wake of the floods.

A close second is the wellbeing of the cattle – a steady source of income for their households that is now left vulnerable in the absence of adequate roof and fodder. In some areas, there is little room to manoeuvre the regular boats. Undeterred by this constraint, Red Cross teams have continued with the distribution on banana rafts made by locals. It means more number of trips to cover the affected areas as the rafts allow for some relief material to be carried with just two people on board. The task, however, is less daunting when villagers are ready to give a hand and help push the rafts.

Assam and Bihar: Six Dead, Over 55 Lakh Affected in Floods

<https://thewire.in/environment/assam-bihar-flood-update-imd-alerts-kerala>

"Six people died in Assam and Bihar on Wednesday due to floods which have affected over 55 lakh people in the two states, while heavy rains lashed parts of Kerala inundating low lying areas and partially disrupting rail and road traffic. The India Meteorological Department (IMD) issued a red alert for Kerala's high-range Idukki district with a forecast of widespread extremely heavy showers. However, a fresh spell of rains brought relief to the national capital from the sultry weather but caused waterlogging in low-lying areas, affecting traffic movement, electricity and water supply. Kuldeep Srivastava, the head of the IMD's regional forecasting centre, said, "The monsoon trough will be close to Delhi-NCR from Tuesday evening to Thursday. "During this period, southwesterly winds from the Arabian Sea and easterly winds from the Bay of Bengal will reach Haryana, Delhi-NCR, West Uttar Pradesh and northeast Rajasthan, he said, adding that under the influence of these systems, heavy to very heavy rainfall will occur over these areas.

In Assam, three people drowned in floodwater and close to 17 lakh people across 21 districts remained affected by the deluge despite an improvement in the flood situation across the state, according to an official bulletin on Wednesday. Till Tuesday, more than 19.81 lakh people were suffering due to the deluge across 21 districts. A daily flood report of the Assam State Disaster Management Authority (ASDMA) stated that one person each drowned in Barpeta, Kokrajhar and Kamrup districts. With this, the total number of people losing their lives in this year's flood and landslide across the state has gone up to 133, of whom 107 were killed in flood-related incidents and 26 died due to landslides. The ASDMA said that over 16.55 lakh people were hit by floods in Dhemaji, Lakhimpur, Biswanath, Darrang, Baksa, Barpeta, Chirang, Bongaigaon, Kokrajhar, Dhubri, South Salmara, Goalpara, Kamrup, Kamrup Metropolitan, Morigaon, Nagaon, Golaghat, Jorhat, Majuli, Sivasagar and Dibrugarh districts. Goalpara is the worst-hit with over 4.19 lakh affected people, followed by Morigaon with more than 2.63 lakh people and South Salmara with around 2.50 lakh people hit by the deluge. At present, 1,536 villages are inundated and 92,899.95 hectares of crop area has been devastated across Assam, the ASDMA said.

The death toll due to the flood in Bihar rose to 11 with three fresh fatalities while the number of people affected by the calamity reached close to 40 lakh, the state disaster management

department said. All the three deaths were reported from Darbhanga district, it said. The number of people affected by the floods, caused by heavy rainfalls in catchment areas along the Indo-Nepal border, has now reached 38.47 lakh. Residents of nearly a thousand villages across 12 districts of Bihar have been hit by the calamity. Heavy rain forecast in north Bengal

Meanwhile, heavy rain has been forecast in all north Bengal districts, which got a day's respite from the continuous showers that lead to a flood-like situation. Little or no rain was recorded in the 24 hours till 8.30 am in the region, where heavy downpour has caused flooding of low-lying areas in some districts, including Jalpaiguri and Alipurduar. The meteorological department has warned of heavy rain or moderate thunderstorms in Darjeeling, Kalimpong, Jalpaiguri, Alipurduar, Coochbehar, North Dinajpur and South Dinajpur districts till Friday morning.

Assam: Fishfed sells fish worth Rs 180 cr in lockdown

<https://www.indiancooperative.com/co-op-news-snippets/assams-fishfed-sells-fish-worth-rs-180-cr-in-lockdown/>

"East Mojo quotes Assam chief minister Sarbanand Sonowal saying The Fishfed cooperative federation of primary fishery cooperatives of Assam, sold fish worth Rs 180 crore during the first two phases of lockdown. The chief minister said Assam has ramped up its fish production by 4 percent and is able to supply fish to north eastern states. Sonowal was speaking in a program to distribute appointment letters to 12 fishery development officers (FDOs) under the state govt.'s fisheries department in Guwahati. The chief minister said Assam has demanded Rs 1000 crore out of the Rs 20 thousand crore allocated for the fisheries sector by the Centre in the Rs 20 lakh crore economic stimulus package.

Assam: Darrang youth quits private job to concentrate on fish farming

<https://nenow.in/north-east-news/assam/assam-darrang-youth-quits-private-job-to-concentrate-on-fish-farming.html>

"The COVID-19 pandemic has left many jobless across the country, thereby aggravating the unemployment scenario. However, there are still many hardworking and determined educated youths who have become a ray of hope for several jobless youths, showing them the way to become self-reliant and earn more than their earlier jobs. Rituraj Bhagawati of Balipota village under Lakhimpur Panchayat in Darrang district is one such youth quit his earlier job as a medical representative against a monthly salary of more than Rs 30,000 to turn himself as a scientific fish grower and earn more than Rs 6 lakh over a year. He hails from the village where fish farming has been practised traditionally and there are a couple of successfully run community fisheries like Lakhimpur Meen Mahal and Suri Pukhuri Meen Mahal. Even Rituraj's father practised fish production traditionally.

However, Rituraj was interested in this traditional way of fish farming as its outcome was very limited. But things changed for him when he met Jyoti Prabhat Duarah, Fishery Development Officer of Darrang after one of their traditional ponds was selected for fish polyculture demonstration under World Bank aided Assam Agri-Business and Rural Transformation Project (APART). “The meeting with Duarah was the turning point of my career. He motivated me for scientific fish farming and I left my medical representative's job where I had been engaged since 2013 to devote myself completely to fish farming with new scientific methods, said the 30-year-old Rituraj while speaking to North East Now. Rituraj's father owned two ponds. During 2019-20, one of the ponds was selected for fish polyculture demonstration under APART. Rituraj was selected as the beneficiary along with 14 others and a Farmer Producer Group (FPG) was formed. He was also selected as the secretary of the group. “The inputs were supplied to the beneficiaries through the community procurement process. Proper stocking of carried over seeds, feeding of formulated feed and application of lime and other inputs resulted in the flourishing of his pond with the stock of fishes, Duarah said.

“Due to the high demand for local fishes during the lockdown, I partially sold about 600 kg of fishes to various vendors, he said. “I earned Rs 1.2 lakh by selling fishes from my pond sponsored under APART. Further, during final harvesting, I sold 500 kg of fish and earned Rs 1 lakh from the same pond, Rituraj added. “If a youth having his own plot of land can invest Rs 1 lakh from the preparation of the pond to other expenses and spend 4-5 hours a day looking after it, he can easily earn Rs 6-7 lakh per year from a pond of two bigha area, he said. Rituraj has also created job avenues for three local youths. “I have invested in the construction of two more tanks of around one-and-half bigha and one bigha in size on my parent's land through whatever savings I had from my service life, he said. “Following guidance from officers like Jyoti Prabhat Duarah, technical expert Prakash Kalita, fishery demonstrator Sasanka Baruah and fishery demonstrator Dipankar Sarma of the District Fishery Office, Darrang, I have started fish seed farming in these new tanks. Three local youths have been engaged, the fish farmer added. “I was encouraged to apply to the District Fishery Development Officer, Darrang, for a license as a fish seed grower and trader, he said. “After obtaining a license, I have successfully sold approximately 270 kg of fry (fish seed smaller in size) of Indian major carp from my new tanks, generating gross revenue of Rs 1.1 lakh within a few months, he added. “From the second harvesting of seeds, I sold about 400 kg of advanced fry and fingerlings, earning about Rs 1.2 lakh, he further said.

Assam: Becomes self-sufficient in fish production

<https://www.eastmojo.com/assam/2020/07/25/assam-becomes-self-sufficient-in-fish-production-cm>

"Announcing that the state has become self-sufficient in fish production by increasing its production more than 4% in the last four years, Assam chief minister Sarbananda Sonowal said that the state produced 3.35 lakh metric tonne of fish in 2019-20. Sonowal also said that FISHFED, a state-level cooperative federation of primary fishery cooperatives of Assam, sold fish worth Rs 180 crore during the first two phases of lockdown. "Apart from becoming Atma Nirbhar (self-reliant) in fish production, we are being able to supply fish to other northeastern states and we have the capacity to become the biggest producer and exporter of fish in the country, CM Sonowal said while taking part in a programme to distribute appointment letters to 12 fishery development officers (FDOs) under the fisheries department. He also informed that Rs 20 thousand crore were allocated for fisheries sector by the Centre in the Rs 20 lakh crore economic stimulus package announced by Prime Minister Modi in the aftermath of COVID19 lockdown to revive country's economy.

Proposals worth Rs 1,000 crore have already been submitted to the Centre by Assam government for deriving maximum benefit from the Rs 20,000 crore allotted to fisheries, he said, adding: "Altogether 28,000 MSMEs in the state have already derived benefits from Rs 3 lakh crore stimulus provided to MSME sector by the Centre. Citing example of Vietnam, where fishery and agriculture officials work in close tandem with the farmers, Sonowal urged the new appointees to utilise their academic knowledge in practical field through a friendly approach towards the fish farmers. "There is greater demand in international market for fresh water fish vis-a vis sea fish and therefore, newly appointed FDOs must commit to the cause of capturing the global market through state's fish in the spirit of 'Vocal for Local' mantra of Prime Minister Modi, he added

Assam: Floods: 104 dead, 40 lakh affected as rising Brahmaputra river water continues to wreak havoc

<https://www.timesnownews.com/india-for-assam/article/assam-floods-worst-flood-in-years-consumes-97-lives-affects-40-lakh-people-in-27-districts/623093>

"At least five more people succumbed to the devastating floods in Assam on Friday, taking the flood-related death toll to 76. The authorities have confirmed that this year's flood is worse than last year's as it has surpassed it in terms of people affected and deaths. The flood situation in Assam is getting worse by the day as it has engulfed 28 out of the 33 total districts in the state. Standing crop in over 1.3 lakh hectares of land has been destroyed by the flood. As per the current assessment, the condition of Assam due to floods is more alarming than last year, confirmed the ASDMA. The authority has set up around 303 relief camps and 445 relief distribution centres. - Around 39,79,563 people in 3,218 villages and localities across 28 districts in Assam are affected - The authorities have set up 748 relief camps in 24 districts where 49,313 people are taking shelter The Assam floods have consumed the lives of 76 while 26 others have died in landslides in the state, added the official. Meanwhile, villages in

Dibrugarh and Chirang have submerged after the water level of Brahmaputra river rose following incessant rainfall in the regions. While speaking to media about Chirang's condition, State Minister Chandan Brahma said, "More than 100 villages affected due to flood here. Over 2,500 people shifted to 20 relief camps.

Animals have also been moved to safer locations." Yesterday, Assam Chief Minister Sarbananda Sonowal paid a visit to Kaziranga National Park to inspect the recent deaths of five rhinos, two wild buffalos, five wild boars, two swamp deer, one porcupine, and 61 hog deer died due to various reasons including drowning and vehicle hits. The incidents of vehicle hits occurred on a national highway that passes beside the park. Sonowal visited the park's submerged areas using a speed motorboat and took stock of the situation. During his one and half hour ride, he witnessed the animals that were taking shelter on highlands constructed by the state government. Sonowal said the highlands were built within the park to ensure the protection of wildlife during floods. He thanked people living in adjoining areas of the UNESCO World Heritage Site for extending help to the forest department in ensuring the protection of animals. The poachers usually increase their activities during every flood.

Assam: Becomes self-reliant on fish production amid Covid-19 pandemic

<http://newsonair.com/Main-News-Details.aspx?id=393383>

"Assam has almost become self-reliant on fish production. Talking to AIR News, Commissioner-Secretary in the Fishery department Rakesh Kumar said that during the Covid-19 pandemic period, the state has produced sufficient quantities of fish to fulfil the local needs. Mr. Kumar said that youths who returned to the state from outside during lockdown are engaged in the fishery sector. He said that Assam is exporting fish to other North Eastern states. Mr. Kumar added that the Pradhan Mantri Matsya Sampada Yojana would further help the state in fish production. He said that a cluster wise action plan is being prepared to implement the scheme in Assam.

Assam: Man Helps Creates Jobs For Migrants Who Returned Amid Pandemic

<https://www.ndtv.com/india-news/coronavirus-assam-man-helps-creates-jobs-for-migrants-who-returned-amid-pandemic-2260391>

"A 42-year-old social worker in Assam's Golaghat district is helping youngsters, who were left without jobs or shelter in the country's metros because of the coronavirus lockdown, create livelihood opportunities back home by setting up fish farms, offering hope of a sustainable future in villages. The need to develop economically viable work in villages and smaller towns has been accentuated by the continued rise of COVID-19 cases across the country. The rising cases mean that many migrants who returned home may not be able to go back to their city jobs

anytime soon, leaving them to grapple with the challenge of finding a means of livelihood in a place that had few opportunities to begin with. "I will not go back (to the city) and try to work in the villager itself. I am from a family of farmers so I will have to see what I can do," a young man in a yellow T-shirt told NDTV. This is where Parikshit Dutta, the working president of the Rhythm Agricultural Group, an NGO, has stepped in as a changemaker by creating jobs in villages.

In the weeks following the Covid-driven migration, Mr Dutta has trained at least 60 young men in pisciculture and helped them set up fisheries where they use the advanced biofloc technology that allows to farmers to grow a huge number of fish in a small space, and fast. "Something had to be done for the youngsters who had come back. We thought of helping by starting fisheries. We have given small fish and fishing nets to them and helped them start a co-operative. For these youth, who once had to migrate in search of a job, this is a new lease of life back home," Mr Dutta said after lighting a lamp and offering prayers on the start of a fishery. The group of men trained by Mr Dutta has been provided with 50,000 small fish and five fisheries have been opened till now. "We, the youth, have had a mindset that nothing can be done here in the village and so we go out. But now, these fisheries have inspired us. It has allowed us to think that we can do lot of things for ourselves in the village itself," a bespectacled man in a blue T-shirt told NDTV. Recently, Assam Chief Minister Sarbananda Sonowal had directed the Fisheries Department to create employment opportunities under a central government scheme for youths returning to the state due to the COVID-19 outbreak and bring about a "blue revolution". He had and instructed officials to set up "fish landing ports" on the banks of Brahmaputra and Barak rivers, create "fish farmer-producer groups" for better market linkage and expand its reach to fish markets in neighbouring states. Assam has registered more than 14,600 Coronavirus cases with 568 fresh cases reported Thursday. Some 27 people have lost their lives to the highly infectious disease in the state, which has 5,423 active cases.

Assam: In pictures: 'Mad floods' amid a coronavirus lockdown in Assam's Dibrugarh

<https://scroll.in/article/966018/in-pictures-mad-floods-amid-a-coronavirus-lockdown-in-assams-dibrugarh>

"A popular radio artist, knee deep in water in his living room, strumming his guitar and singing an Assamese tune about the Brahmaputra's "mad floods, has captured the imagination of many on the internet. The video was shot last weekend in Upper Assam's Dibrugarh as water from the Brahmaputra spilled into the city after days of relentless rain, flooding streets and shops and homes and offices. A mad flood had submerged the tea town. Dibrugarh town is no stranger to floods, thanks to its peculiar low-lying location on the south bank of the river. Yet, residents say they had seldom seen a deluge as bad as this year. Many of the city's arterial roads were waterlogged entirely or in parts for nearly five days until Sunday evening. As the roads became

unmotorable, out came the fishing boats that usually lurk around on the banks. The situation, residents said, was even worse in the countryside. “This is perhaps the worst flood in years, said Neepjyoti Gogoi, a businessman. Over the weekend, the courtyard at Gogoi's home was filled with almost knee-deep water.

“Fortunately, it did not enter the house, said Gogoi. But Bikash Singh Shahi, a lawyer in the city, was not so lucky. “Water from the road gushed into our home, he said. There was no escape either. As living rooms filled with water, the town went into a lockdown to contain another problem: the coronavirus. Starting last week, Assam is enforcing an indefinite “weekend lockdown – applicable on Saturdays and Sundays – for town and municipal committees across the state (except Guwahati which is currently in the middle of complete lockdown). All of this as a particularly harsh wave of floods sweeps through the state. According to the state disaster management authority, more than lakh people are currently affected across 2,000 villages in 22 districts. Over 18,000 of them are in relief camps. Thousands more are likely to be in their own makeshift tarpaulin tents on higher land. At least 24 people have already drowned to death. Another 23, according to government records, have been crushed dead by landslides triggered by the torrential rains. Meanwhile, Monday brought in the sun at Dibrugarh, the largest urban centre affected by the current wave of floods. The water is starting to evaporate and after days of being marooned in their homes, people are back in large numbers on the roads. But now, there is another worry. “There is a frenzy of people on the streets today and social distancing has gone for a toss, said Kasutabh Deka, who teaches in Dibrugarh University. “Just hope that doesn't bring fresh trouble for the city.

Assam: Fish die in wetland near Assam blowout site

<https://www.telegraphindia.com/north-east/fish-die-in-wetland-near-assam-blowout-site/cid/1784791>

"The mixing of condensate with floodwaters in a wetland close to the site of an Oil India gas well blowout at Baghjan in Tinsukia district of Assam has killed fish in large numbers, a forest official said. The official said fish have died in huge numbers in the past few days in the Maguri-Motapung Beel (wetland) as floodwaters turned “acidic after mixing with the condensate, a form of crude that has been spewing from the gas well since May 27. The chemical spray has affected nearby water bodies, grassland, paddy fields and tea plantations. The death of fish compounds the problems for locals as around 40 per cent of them are involved in the fishing business. Around 9,000 residents are living in 10 relief camps since the well blowout and subsequent fire. The forest official told The Telegraph he had tested the water of the wetland, around 400m from the affected gas well, following reports that fish are dying in huge numbers after the area was hit by floods. “We recorded pH level of 6.3 on June 26 and 5.9 on June 27 which suggests the water has turned acidic. It could affect aquatic life. We also spotted a few

dead snakes, birds and worms. It is difficult to quantify but many fish have died within an area of 1sqkm. Oil India personnel, however, said the deaths were not caused by the mixing of condensate with the water, the official said. pH is measure of how acidic or basic water is. A pH value of less than 7 suggests the water is acidic. Baghjan resident Hemanta Moran and the forest official said the floodwaters helped wash away some of the condensate but there are areas where it is still stuck.

“The condensate affected the water bodies and nearby fields and plantations. We are suffering from air, noise and water pollution since the blowout. The flood has further compounded our problems. Oil India should try to cap the well as soon as possible. Otherwise, the damage to the environment and livelihood will only increase by the day, said Moran. Tinsukia is one of the worst affected districts by the floods. However, the water level has been receding since Sunday. The forest official said Oil India was taking steps to remove the condensate and check the flow of condensate to the Dangori river. “They (Oil India) are removing the condensate and are also going for bio-remedial measures which will take at least two months to clear the area, he said. An Oil India statement said New Delhi-based The Energy and Resources Institute is conducting the study on bioremediation of sludge. The institute has been already monitoring air quality and noise level in the affected area.

“However, the bioremediation job has been put on hold till the water level recedes in the earmarked sites, the statement said, adding that flood and heavy rainfall have affected operations. Meanwhile, the flood situation in Assam remained grim. According to the Assam State Disaster Management Authority report, 13,16,927 lakh people have been affected by floods in 25 districts. Four persons have died in the deluge since Sunday taking the number of deaths to 24 since May 22. At least 27,452 people are taking shelter in 273 relief camps, with the most (18,258) in Tinsukia district. Around 15 lakh animals have been also affected and 83,168 hectares of cropland damaged. Union home minister Amit Shah on Sunday reviewed the flood situation in Assam and assured all possible help to the state government.

Assam: Job And Financial Insecurities Amid COVID-19 Force Circus Queen to Become Fish Vendor

<https://www.india.com/viral/job-and-financial-insecurities-amid-covid-19-force-circus-queen-to-become-fish-vendor-in-assam-4067326/>

"Sarada Singha, a 45-year-old chief performer of her Kolkata based circus company, had everything going right for her until the COVID-19 outbreak and the subsequent nationwide lockdown forced her to become a fish vendor to manage her two-square-meal for her family. The corona spread forced shut her circus shows and she along with other members of her team are now grappling with an uncertain future and poverty. While the Nepali woman Sarada sells fish at

a roadside market in Silchar, the other circus performers clowns, jugglers, trapeze players, ring masters, technicians, singers, make-up artist, guards, including her husband Ratan Singha are working as daily wage earners' and even taking up menial jobs. The 160-member circus team, comprising performers and assistants belonging to West Bengal and Assam, came to Hailakandi (in southern Assam) in January to perform their show in famous "Rabindra Mela. From Hailakandi, the circus party moved to Karinganj to perform the shows in another famous "Netaji Mela in January end and then in next month to the "Gandhi Mela in Silchar, a major commercial city in southern Assam, Mizoram, Manipur and Tripura.

"Initially, our circus owner in Kolkata financially helped us, but gradually the proprietor of the D. K. Enterprise, which owns the circus troupe, expressed his helplessness forcing us to search for alternate works. But, because of the lockdown, most of our co-performers and co-workers had no work and no money. For days we starved starving. Our lives were devastated, our dreams wrecked, perished, Sarada, a lone woman vendor in the market, told IANS. Sarada's husband Ratan Singha said that besides the 160 men and women, some of the couples have minor children. "One of the performers delivered a baby earlier this month in a local government hospital in Silchar. Besides, we have two horses as part of our circus squad. During the normal working time, we feed the horses with "Chola, but now we take them to a nearby river bank or field to feed the grass, Ratan told IANS. He said, "Among our co-performers and co-workers, there are people belonging to the Hindu, Muslim, Buddhist and Christian communities, an exceptional combination of religious diversity. For many years we have been working together as a big one family. The local administrations, clubs, NGOs and even individuals provided us with various relief materials and foods, but we need big supplies of food and money for our teammates, the middle aged Ratan with gloomy face said while explaining their distress and uncertainty.

Assam: Flood situation grim as death toll reaches 12, 38,000 affected

<https://www.newindianexpress.com/nation/2020/jun/24/assam-flood-situation-grim-as-death-toll-reaches-12-38000-affected-2160937.html>

"The flood situation in Assam remained grim on Wednesday, with the deluge killing one more person and affecting 38,000 people in five districts of the state. The fresh death was reported in Sivasagar district, taking the death toll in this year's floods in the state to 12, as per the daily flood report issued by the Assam State Disaster Management Authority (ASDMA). Around 38,000 people have been affected due to the floods in Dhemaji, Jorhat, Majuli, Sivasagar and Dibrugarh districts, it said. Dhemaji has been the worst-hit with 15,000 affected people, followed by Dibrugarh with 11,000 and Sivasagar with 10,000 people suffering due to the deluge.

The number of affected people was 37,000 in four districts on Tuesday. Majuli was added to the list of affected districts. The floods have inundated 102 villages and damaged crops on 5,031 hectares, the ASDMA said. The administration is running 27 relief camps and distribution centres in two districts, where 1,081 people have taken shelter, it said. A total of 119.3 quintals of rice, pulses and salt have been distributed among the affected people, the report said. The Brahmaputra is flowing above the danger mark at Nimatighat in Jorhat and also in Dhubri town. Its tributaries are also flowing above the danger level -- Dikhow at Sivasagar town, Disang at Nanglamuraghat in Sivasagar, Dhansiri at Numaligarh in Golaghat and Jia Bharali at NT Road Crossing in Sonitpur, the ASDMA said. Roads and several other infrastructures have been damaged at various places in Dhemaji district. Massive erosion has been witnessed in different places in Golaghat district, it added.

Assam: Second wave of floods hits Assam as water level of Brahmaputra river rises

<https://www.indiatoday.in/india/story/flood-assam-water-level-brahmaputra-river-1691474-2020-06-22>

"Assam is in the grip of second wave of floods, triggered by incessant rains in the state and neighbouring states, which has affected around 25,000 people of five districts of the state. Over 12,000 people were affected in Dhemaji district after floodwaters of the Gai river breached a portion of an embankment at Sissiborgaon area in the district and submerged 10 villages. According to the Assam State Disaster Management Authority (ASDMA), a total of 41 villages in Dhemaji district have been affected in the second wave of floods. On the other hand, the water levels of Brahmaputra river and its tributaries are gradually increasing following incessant rainfalls in the state. The Brahmaputra river is flowing above danger mark at Jorhat while Dikhow river is above danger mark at Sivasagar, Disang river at Nanglamuraghat in Sivasagar district, Dhansiri river at Numaligarh in Golaghat district, Jia Bharali river at NT Road crossing in Sonitpur district. In Guwahati, the water level of Brahmaputra river is rising by 1 cm per hour. A Central Water Commission (CWC) official Jitumoni Das said the water level of Brahmaputra river is gradually increasing. "Since last night, the water level is rising by 1 cm per hour. If rainfall is continued then water level will be increased more, Jitumoni Das said. On the other hand, in view of the rising water level of Brahmaputra river, the Kamrup (Metro) district administration has suspended plying of boats, ferry services in Guwahati till June 24. Over 3.81 lakh were affected and 10 people died in the state in the first wave of flood this year.

Assam: Gas well blowout puts biodiversity at risk

<https://www.hindustantimes.com/india-news/assam-gas-well-blowout-puts-biodiversity-at-risk/story-2vC9dFDWMqMRC5d22HEuHN.html>

"The blowout of an Oil India Limited (OIL) gas well in Assam's Tinsukia district last week is causing extensive damage to biodiversity and wildlife the region -- including the endangered hoolock gibbons and Gangetic dolphins -- according to several residents, activists and experts. Baghjan, where the gas well blowout occurred on May 27 is close to the Dibru Saikhowa National Park, the Maguri-Motapung wetlands, and the forest villages of Berekuri which are habitat to the hoolock gibbon. Uncontrollable gas flow is continuing from the gas well, according a press statement issued by Oil India Limited on Monday. "What we are seeing is complete horror. Condensed oil is leaking continuously. The Maguri-Motapung wetlands (an important bird and biodiversity area) is very badly affected. There is a thick layer of crude oil on the water. Fish are dying and some cattle that graze in the adjacent wetlands are also dead, said Mridupaban Phukon, a student and wildlife activist. "We have been informed by people in Berekuri villages that condensed oil is coating leaves and has started affecting the hoolock gibbon habitat. If not contained immediately the wetlands and national park will be devastated, he said over phone. Around 650 families have been evacuated from the affected areas and continue camped in three relief camps.

"I visited the area on Sunday but it was barricaded. I could see the damage everywhere. Dead fish were floating and the vegetation is brown now. One Gangetic dolphin died soon after the leak. Usually the Maguri bheel is rich with birdlife, I could hardly spot any birds that day. I appeal for immediate help, said Nabamita Ray, doctor and wildlife enthusiast. AM Singh, principal chief conservator of forests, Assam and spokesperson of environment ministry said that a team of forest officials, pollution control board members and OIL officials will submit a report on Wednesday while another committee which also has independent members from IIT Guwahati are assessing damage in the national park. Oil India's crisis management team (CMT) members have started pumping water through the casing valve. "Water is being pumped continuously through the valve into the well head. Oil India has also contacted global experts to control the blowout, the press statement cited above said, adding that the water pumps are being installed in the nearby river (source of water) and pipeline-laying work is in progress. Officials said that an additional plot of land adjacent to the well site has also been arranged to create a big reservoir of water and to place the well control equipment in it.

A blowout is the uncontrolled release of crude oil or natural gas from an oil well or gas well after pressure control systems have failed. According to Oil India, the blowout happened on May 27 while operations were going to produce gas from a new sand (oil and gas-bearing reservoir) at a depth of 3,279 metres. The well was until then producing around 100,000 standard cubic metres a day of gas. Assam Chief Wildlife Warden and additional principal chief conservator of forest

(PCCF) MK Yadava said an assessment is underway to measure the damage to the ecology and animal and bird species in the area because of the blowout. He added that the carcass of a Gangetic dolphin found at Maguri beel has been sent for forensic examination. “In the two days after the accident, the condense oil had only spread up to 500 metres but now it has spread in 1.5km radius as per our observations. Oil India is saying it may take another week. Who will compensate for this damage? asked Hemanta Moran, Principal, Jatiya Vidyalaya Baghjan. According to a 2013 site inspection report regarding oil and gas pipelines in Upper Assam by conservation scientists and former members of National Board for Wildlife, MD Madhusudan and Prerna Singh Bindra, the Dibru-Saikhowa National Park and Biosphere Reserve meet at the confluence of the Brahmaputra with three of India's easternmost rivers the Siang, Dibang and Lohit rivers.

The park shaped by the these rivers is spread over 765 sq-km, of which 340 sq-km form the core and is a complex of wetlands, alluvial grasslands, riverine forests, swamps and semi-evergreen forests, including the largest willow swamp forest in north-east India. Dibru-Saikhowa has recorded over 40 mammals, 500 species of birds, 104 fish species, 105 butterfly species and 680 types of plants. It harbours tigers, elephants, wild buffalos, leopards, hoolock gibbons, capped langurs, slow lorises, Gangetic dolphins, besides critically endangered bird species such as the Bengal florican, white-winged duck, greater adjutant stork, white-rumped vulture, slender-billed vulture, and the very rare and endemic black-breasted parrotbill. Meanwhile, an OIL advertisement last month said the union environment ministry has accorded environmental clearance on May 11 for extension drilling and testing of hydrocarbons at 7 locations under Dibru Saikhowa National Park.

HT verified documents on environment ministry's Parivesh website which also states that the clearance was accorded. “The continued oil leakage from the blow it is a horrific environmental crime. It has caused the death of the endangered Gangetic dolphin and thousands of fish, laying wetlands and fields waste, it is endangering the rare hoolock gibbons. Unfortunately, this is not the first time there has been such a leakage or environmental norms have been flouted –indeed part of the pipeline in the eco-sensitive zone of the Dibru-Saikhowa National park had been laid before mandatory environment approvals were given. Dibru-Saikhowa and its surrounding landscape has immense ecological values, and allowing drilling inside a national park is against the spirit and letter of the law, besides violating our basic constitutional principles of protecting environment, said Bindra, who visited the site as a National Board for Wildlife member.

Assam: Concerns over social-distancing as floods affect 300,000

<https://www.downtoearth.org.in/news/natural-disasters/concerns-over-social-distancing-as-floods-affect-300-000-in-assam-71438>

"After approximately 300,000 were affected by pre-monsoon floods in 11 districts across Assam, concerns have emerged over the adherence to social-distancing norms to curb the spread of the novel coronavirus disease (COVID-19). Two individuals have died so far, with around 20,000 sheltered in relief camps. For those who were sheltered in relief camps, social-distancing norms were being adhered to, with arrangements for flood relief being made in line with past experience, said officials. Severe floods during the monsoons could, however, strain the state's limited resources and make social-distancing difficult in affected areas.

Assam, a flood-prone state, was impacted by floods in 2019 as well, with approximately 1.4 million affected in the span of a week. This time, however, flood relief is compounded with the fact that social-distancing must be maintained in order to not increase the spread of COVID-19. The number of COVID-19 cases shot up to 880 on May 28, 2020, said Himanta Biswa Sarma, the state's health minister, on micro-blogging site Twitter. Around 97, mostly those in mandatory quarantine, tested positive as well. There were only 50 cases in the state on May 7, with this number doubling on May 17. The number of migrants returning to Assam from different states across India prompted the state government to increase testing, with 86,340 tests conducted till May 28. Floods affected 294,170 across 300 villages and localities spread over 15 revenue circles of nine districts, according to the Assam State Disaster Management Authority (ASDMA) daily bulletin issued late evening on May 28. As many as 80 relief camps were set up in the state to shelter the affected population.

The Brahmaputra river in Jorhat district of Upper Assam and Kopili in Nagaon district flowed above the danger mark on May 28. The wave of flooding occurred after rainfall in the aftermath of cyclone Amphan. Goalpara district in lower Assam was the worst-hit, with two deaths and over 200,000 affected in the district, after flash floods first hit neighbouring Meghalaya's Garo Hills. Measures taken "We are ensuring that social distancing norms are followed in the relief camps, said Varnali Deka, the deputy commissioner of Goalpara. Deka said all the schools in the district schools were identified to serve as relief camps. There are 1,697 schools in the district, according to officials. Excluding those in flood-prone areas, the remaining may be used to shelter those affected by the flood.

Around 214 such schools-turned-relief camps were identified, according to Deka. Headmasters in these schools will be designated in-charge of the relief camps and apprise officials of their needs and inform them if their camps get overcrowded. "We will move some people to the next nearest camp by road or boats, Deka said, adding masks and sanitisers will be given to those in the camps. She said no cases of COVID-19 or other influenza-like illnesses were found, so far, among those affected, during their medical screening. Any such cases will be tested and put in

isolation according to the guidelines, she said. Earlier this month, ASDMA issued a new set of guidelines to manage flood relief camps in light of the pandemic. Districts were asked to identify additional relief camps according to the population density of villages to ensure enough space for social-distancing, the guidelines said.

They were asked to ensure an area of seven square metres per person, instead of the earlier 3.5 square metres per person to ensure a space of at least one metre between any two individuals. MS Manivannan, the chief executive of ASDMA said all districts identified spaces for relief centres in line with the new guidelines. He said while it is difficult to predict the severity of this year's floods, the state is preparing itself in line with earlier experiences. In 2019, at least 91 people died after several waves of flooding that began in May, affecting most of the state. To augment its disaster management capacity, Assam has started a volunteer programme. Approximately 16,000 persons applied to be Pratirodhi Bondhus out of which 14,000 were selected and trained online to help authorities tackle the COVID-19 crisis and flood rescue and relief. Ravindra Nath, the founder of non-profit Rural Volunteer Centre, said the flood will reach new areas this year. This was because embankments were not developed due to COVID-19. This year, the government has to deal with the pandemic and the flood. For rehabilitation, the government has to think about relief material beyond rice and pulses, said Nath. Assam at present, has only 15 boat clinics, a number that is not sufficient at all. The state needed at least 30 boat clinics, he added.

Assam: Brahmaputra river flowing near danger level in Guwahati, Dibrugarh, & Tezpur

<https://www.sentinelassam.com/north-east-india-news/assam-news/brahmaputra-river-flowing-near-danger-level-in-guwahati-dibrugarh-tezpur-479376?infinitescroll=1>

"With torrential rains continuing to lash several parts of Assam since the weakening of the destructive Cyclone Amphan, the Brahmaputra is flowing close to the danger level in the cities of Guwahati, Dibrugarh, and Tezpur. In Guwahati, the buzzing economic epicentre of the state, the river is resting at 48.76 metres, while the danger level is 49.68 metres. Meanwhile, the Bharalu river has swelled to 48.65 metres. As of today, the river is holding steady at 104.32 metres in Dibrugarh district, where the danger level is 105.70 metres. Additionally, it is also holding steady at 65.08 metres in Tezpur district, where the danger level is 65.23 metres. Meanwhile, the floods have turned critical in several districts of the state, with one person having died so far. The Assam State Disaster Management Authority (ADSMA) bulletin on Tuesday said that 11 districts -- Dhemaji, Lakhimpur, Nagaon, Darrang, Barpeta, Nalbari, Goalpara, West Karbi Anglong, Dibrugarh, and Tinsukia -- are reeling under floods. So far, the highest number of 2,15,476 people have been affected in Goalpara district, followed by 22,332 persons in Nalbari. Meanwhile, 2,678 hectares of crop lands across the districts of Dhemaji, Lakhimpur, Nagaon, Hojai, Nalbari, Goalpara, and Dibrugarh, have been affected due to the floods. Erosion

has been reported in Manuli, Sonitpur, Tinsukia, Chirang, Baksa, Biswanath, and South Salmara districts, while landslide has been reported from Dima Hasao district. In the landslides, reported from 4 villages, 72 people have been affected and 18 houses fully destroyed. At the same time, embankments have been destroyed in Golaghat, Barpeta, and Nalbari districts.

Assam: Nearly 2 lakh affected in Assam as Brahmaputra floods; state continues to record COVID-19 cases

<https://www.freepressjournal.in/india/nearly-2-lakh-affected-in-assam-as-bramhaputra-floods-state-continues-to-record-covid-19-cases>

"While the coronavirus pandemic is bringing the world to a standstill, Assam is also dealing with heavy rainfall which has resulted in floods. Nearly 2 lakh people have been affected by the flooding of the river Brahmaputra. The state has also recorded a surge in the number of coronavirus cases. 597 cases have been reported in the state so far, out of which 62 have recovered and four patients have died. According to an ANI report on Tuesday evening that quotes the State Disaster Management Authority, till now five districts have been affected by the rain. These are Lakhimpur, Dhemaji, Dibrugarh, Darrang and Goalpara. Reportedly, 229 villages have been affected by the heavy rains. According to NDTV, the worst hit is Goalpara where 1.70 lakh people have been impacted and nine thousand of them have been shifted to relief camps. According to a PTI report, a total of 35 relief camps have been opened and officials said that newly framed guidelines will be followed to prevent the spread of COVID-19 in these relief camps. The Indian Meteorological Department has issued an advisory predicting heavy rains and thunderstorms, suggesting that the situation in the northeast might get worse.

A COVID-19 screening and quarantine centre located at Chogalia in Dhubri district lying on the Assam-Bengal border was damaged on Tuesday due to heavy rains and thunderstorms. At least 10 people in the facility were injured and were immediately admitted to the hospital. They have all since been discharged and moved to another quarantine centre. The state cabinet has decided that each minister must oversee precautions to curb the rise of coronavirus cases. Specific districts and regions have been assigned to them, and starting from Wednesday, 27 May, they will also oversee the preparations to tackle the flooding. The state government led by Sarbananda Sonowal met on Tuesday to discuss the two main problems the Assam is facing right now. The government has announced that strict quarantine measures will be followed and that the embankments on the River Brahmaputra will be repaired at the earliest. "The Assam Council of Ministers (CoM) comprehensively discussed the flood situation in the state and directed DCs to take all necessary steps to repair embankments and stock essential food items for the flood affected people," Sonowal took to Twitter to add on Tuesday evening. Sharing photos from the meeting Sonowal added that the CoM had "stressed on strict quarantine for people coming from outside the state to Assam".

Assam and Meghalaya: Cyclone Amphan moves towards NE, heavy rains

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

"The extremely severe cyclonic storm Amphan made a landfall close to Sundarbans between Digha (West Bengal) and Hatiya Islands (Bangladesh) on Wednesday afternoon, washing away bridges connecting Indian islands to the mainland and uprooting trees and electricity poles in six-and-a-half hours of monstrous fury that left Kolkata and most of south Bengal pulverised. With the wind speed of up to 185 kmph, the cyclone claimed 10 to 12 lives in West Bengal and over 5,500 houses were destroyed. Chief Minister Mamata Banerjee said the impact of Amphan was worse than the coronavirus pandemic and claimed that there could have been Rs 1 trillion worth of damage due to the cyclone in the region. Over 500,000 people had been taken to shelters in West Bengal and over 100,000 in Odisha.

Assam: Despite ban, fishing continues in Golaghat district

<https://www.sentinelassam.com/topheadlines/despite-ban-fishing-continues-in-golaghat-district-477532>

"Under the Assam Fishery Rule 2005, fishing during the months of May, June and July with fishing nets of a certain gauge is prohibited across the State. Despite the ban, egg-laden fish are being sold everywhere within the district. Even multiple incidents of poisoning in the river Dhansiri were reported in the last couple of weeks. Villagers living on the Dhansiri riverside area said that they witnessed many incidents where fishermen put poisonous liquid in the river. A local youth and member of a bio-diversity conservation NGO, told The Sentinel, ""I have witnessed dead fishes and turtles killed by poisoning in the last few days. While some of these fishermen put poisonous liquid containing chemicals in river's upstream portions, another group waits with fishing nets at the downstream areas to catch the poisoned fishes. I have reported it to the department officials several times, but I have no idea why they are not taking any measures! Some powerful persons might be behind these illegal fishing activities during the egg-laden period.""

He further said that he was even scolded by some government officials of the departments concerned in the district for repeatedly approaching them and asking for actions against the illegal fishing and poisoning activities in river Dhansiri. This signifies that some influential persons having strong political background might be behind this illegal fishing racket. Another catastrophic side of these frequent poisoning in the river is also causing concern. More than 50,000 families of Golaghat get drinking water from the water treatment plant situated in the

heart of the town. The water treatment plant extracts water from Dhansiri and supplies the treated water to households. It is apprehended that over 50,000 residents of Golaghat town are drinking these same poisonous waters. Nobody is sure whether the poisonous water of river Dhansiri becomes drinkable after going through the treatment facility. It has been reported that of late the fishermen have been using poisonous chemicals like cyclomethrin and other toxins. Unlike natural plant-based fish poison, these chemical poisonous substances have adverse long-term impact on ecology. Other public water supply plants in the district also extract water from river Dhansiri and after treatment in their facilities supply it to households. But it is still not known whether these water-treatment facilities are capable of removing all the hazardous chemicals from the poisoned waters of the river.

If the authorities concerned do not act upon the matter soon, it is feared that people in huge numbers might fall ill after drinking even the "treated" water that was already poisoned with deadly chemicals by some fishermen. Meanwhile, fishing activities with other means like fishing nets, hooks, and spears are reportedly continuing in various parts of the district despite the ban. On Monday, Numaligarh Police along with 'Macchya Mitra' Manoj Dutta raided Jathipotia (a riverside area of Dhansiri) and seized a large number of fishing nets, hooks and spears from the fishermen, who were caught red handed when they were fishing and catching egg-laden fishes in river Dhansiri. Concerned locals of the Numaligarh area have lauded the efforts in protecting the fishes and other species living in the river in the aquatic species' egg-laying period during this part of the year.

Assam: Operation by Tinsukia district administration against illegal fishing exposes loopholes

<https://www.sentinelassam.com/assam-news/operation-by-tinsukia-district-administration-against-illegal-fishing-exposes-loopholes-470427>

"An operation by the officials of Tinsukia district administration against illegal fishing in Maguri-Matapung Beel during the wee hours of Wednesday left the officials in a lurch after the line departments, including Forest, Wildlife and Police, were locked in a controversy over the jurisdictional issue and filing a complaint against the culprits who purportedly uploaded a video on social media accusing the government officials of not discharging their duties properly. This created a sensation in official circles. The controversy erupted after a joint team of officials of the district administration comprising personnel from forest and fisheries and led by ADC Pabitra Kumar Das, also in-charge of Fisheries cell, raided Maguri-Matapung wetland, about 8 km from Tinsukia town, following receipt of several complaints that illegal fishing activities were going on despite the ongoing ban on fishing. While the officials were confiscating illegal fishing gear and traps, some persons turned up there in boats and asked about the legality of the raid.

They contended that the fishes below the size of 3 inch did not come under the purview of the ban, besides the poor fishermen had been sustaining their livelihood on these catch during the period of lockdown. These people threatened to upload the video on social media and later did so. Following these developments, the officials attempted to lodge complaint against the persons through the department concerned but to their surprise, all departments passed the buck to others on the plea of jurisdiction and none were ready to lodge the complaint. This left the officials in a fix. The district administration carried out similar type of raid on April 27 and seized huge quantity of illegal fishing gear, including costly nets from the same locality, which infuriated the local fishermen community. Wednesday's operation yielded 250 kg of fish along with fishing nets and traps. While the fishes were released into the beel, the fishing apparatus were damaged. Pabitra Das told this correspondent that a coordinated approach was a must for effective inter-departmental functioning without which important public issues remained unaddressed.

Assam: Drive launched against illegal fishing activities at Maguri-Motapung Beel

<https://www.sentinelassam.com/north-east-india-news/assam-news/drive-launched-against-illegal-fishing-activities-at-maguri-motapung-beel/>

"A joint team consisting of magistrate, police, forest and fishery officials launched an extensive operation against illegal fishing activities at Maguri-Motapung Beel, a wetland about 8 km from Tinsukia. The operation that began during the intervening night of Sunday continued till wee hours of Monday. The raid yielded seizure of huge quantity of fishing gears that included 45 nets of different sizes, 800 traps besides two boats. The officials also seized live fishes weighing around 300 kg which were released in the water body. The team members included Bhaskar Jyoti Bora, assistant commissioner, Pranjal Kumar Das, fisheries development officer, Biren Baruah, deputy ranger Guijan, and Lilakanta Chutia, OC Guijan OP. Bhaskar Jyoti Bora said that fishing was banned from April 1 to June 15 as per Assam Fishery Rules 1953 (Amended 2005) under Clause 23 to protect the breeding grounds, brood fishes and spawns for enhancing quality fish seed and fish production.

Andhra Pradesh and Assam: To allow hassle-free movement of seafood trucks

<https://www.outlookindia.com/newscroll/andhra-urges-assam-to-allow-hasslefree-movement-of-seafood-trucks/1806838>

"Andhra Pradesh Chief Minister Y.S. Jagan Mohan Reddy on Saturday urged his Assam counterpart to take steps to ensure hassle-free movement of seafood meant for export from Andhra in the northeastern state. Reddy spoke to Sarbananda Sonowal over phone, following which the latter assured him of all necessary measures. Reddy reminded Sonowal that export in

seafood from Andhra Pradesh is extensive and requested him to ensure that trucks with such products are not stopped at the inter-state borders. He also sought access for these trucks to the fish markets in Assam. According to the Chief Minister's Office, Sonowal requested Reddy to help the people of Assam stranded in Andhra Pradesh due to the lockdown. Reddy assured him of all possible help.

Assam: Fishfed selling fish in mobile vans at three city localities

<http://www.assamtribune.com/scripts/detailsnew.asp?id=apr2020/city050>

"The Assam Apex Cooperative Fish Marketing and Processing Federation Ltd (Fishfed) has started selling fish in mobile vans at Pandu-Maligaon, Narengi-Noonmati, and Dispur areas of the city by following all government advisories on COVID-19. Earlier, during the lockdown, Fishfed – a State-level cooperative federation of primary fishery and pisciculture societies of Assam under the Fisheries Department – had been selling fish only at its retail outlet in Rupnagar. "The Kamrup (Metro) district administration had arranged for sale of local fish at the Rupnagar outlet of Fishfed to the nearby residents from April 10. However, on April 15, we received permission to sell fish in three areas of the city in mobile vans. People are getting varieties of local and fresh fish at a specific price here, Managing Director of Fishfed Dr Dhruva Jyoti Sharma said. "The Fishfed has cooperative societies under its control and these societies are supplying the fish. We are not compromising with hygiene and social distancing. The vehicles used for carrying fish are being sanitised every day. Social distancing is being strictly maintained at the Fishfed outlet, he said. Fishfed sells nearly 2,500 kg of local fish every day.

"To maintain hygiene at our retail booth, we always provide aprons, caps, hand gloves and other equipment to our salespersons and other staff engaged in marketing. We are following the same during the lockdown as well, he said. Currently, fish is being sold in the city through Fishfed and also under the supervision of the District Fishery Development Officer (DFDO). "The DFDO had tied up with three bazar committees of Uzanbazar, Pandu and Bhetapara to make fish available in the city. The wholesale suppliers bring fish from different sources and the assigned vendors collect the fish from the wholesalers for door-to-door delivery, he said. Many vendors are also selling fish without permission violating the advisories issued by the district administration. "The administration should take stern action against them, he said.

Assam: Anusuchit Jati Yuva Chatra Parishad urges Assam Govt. to compensate farmers & fishermen

<https://www.sentinelassam.com/guwahati-city/anusuchit-jati-yuva-chatra-parishad-urges-assam-govt-to-compensate-farmers-fishermen/>

"Anusuchit Jati Yuva Chatra Parishad, Assam has urged the government to compensate the farmers and fishermen who have incurred losses due to the lockdown. Addressing a press meet here on Friday, the body's president Rubul Das said that, "In Assam there are 5 lakh Scheduled Caste people who earn their livelihood by selling fish. Due to the lockdown, they are not being able to catch fishes and thus their businesses have been halted. They are in a state of crises and the Fishery Department and Fishery Minister have not taken any step to uplift their condition. Thus, we appeal to Chief Minister Sarbananda Sonowal to provide financial assistance to these people. Slamming the Fishery Department, Das further said that the former has failed to implement the Matsya Gandha scheme through which the fishermen can get financial assistance of Rs. 20,000. He appealed the government to implement the scheme at the earliest for the betterment of the community. Further speaking about the agricultural workers, he stated, "During the lockdown farmers are not being able to sell their products. The Agricultural Minister has not yet given any assurance to these workers and the State does not have enough cold storage, thus they have incurred huge losses. These farmers should be helped and compensated. Additionally, the body also appealed the government to release the scholarships for SC students

Untapped water resources in Assam

<https://www.sentinelassam.com/editorial/untapped-water-resources/>

"If China can turn the Hwang Ho, once known as the sorrow of China, to joy why cannot Assam script the same success story with the Brahmaputra and the Barak river systems? The successive governments and planners in the neighbouring country have successfully tamed the Hwang Ho. On the contrary, the picture is quite different in Assam. The state is ridden with successive waves of devastating floods every year. The situation makes one take the Brahmaputra, the Barak and their tributaries as the sorrow of the State. And this is a reality in the 21st century when science and technology have scaled the heights. Doesn't a genuine question hang in the air on the ability of the successive governments in the State on this particular front? Huge property in the forms of standing crops and livestock, besides human lives, is lost in the state in every wave of flood in the State every year. Breaches of embankments, roads and bridges also continue to cost big amounts from the State exchequer. Thus the two river systems continue to cloud over the fate of the state's people who have to incur huge losses every year. And this happens as the powers that be in the state have not been able to tame the rivers that flow through it. On its February 11, 2020, issue The Sentinel published a front-page report headlined 'Something fishy happening in Fishery Department'.

Being a flood-prone state the soil in Assam is ideal for rearing varieties of fish species which serve as major sources of protein. With such a bountiful gift the state should have been able to export fish to the rest of India after meeting its domestic demand. The ground reality, however, remains that Assam has to import on an average 12,000 million tonnes of fish annually from

states like Andhra Pradesh, Uttar Pradesh, West Bengal etc, let alone exporting fish. What has gone seriously awry in this resourceful sector in the State? The Sentinel report throws enough light on reasons behind such a pathetic plight of this sector in the state. The report says that the state has many fish-rearing ponds only in office files, but not on the ground. The otherwise pragmatic 'Ghore Ghore Pukhuri, Ghore Ghore Maas' scheme announced by Chief Minister Sarbananda Sonowal two years back has come a cropper in Morigaon district. The status of the scheme in rest of the districts in the State is now under the scanner. Why won't those at the helm of affairs in the State Fishery department be made accountable for showing fish-rearing ponds in office files even as they don't really exist on the ground? How can the department look the other way when a section of unscrupulous beneficiaries of the scheme showed old ponds as new ones just to get benefits under the scheme? If such corruption and inefficient officials aren't dealt with an iron fist the power that be at Dispur can never iron out the problems afflicting the state.

The fertile ground for the rearing of fish is not the only gift from the two river systems to the people of the state. The two river systems that have been turned into sorrows of Assam were highly used as effective water highways by the British Colonialists. The industrious Colonial rulers successfully cut the cost of transportation of goods to and from landlocked Northeast India through the effective use of these water highways. However, now transportation bottlenecks are considered as one of the major problems hindering industrial development in Assam and other states in the Northeast. Couldn't the transportation cost be brought down to bare minimum through effective use of the existing waterways in the State? If the Ganga and other major rivers in the country can be used as effective waterways for transportation of goods, why can't be the rivers of Assam used to get the same purpose served, if not anything newer? The failure on the irrigation front even as the two river systems making water available has undoubtedly scripted a record of sorts. This is despite the irrigation sector getting separated itself as an independent department from its parental Agriculture department.

Even after bifurcation, neither the Agriculture department nor its offshoot Irrigation department can do justice to the farmers of the state. The Irrigation department's failure to run irrigation projects in the State and the Agriculture department's failure to ensure remunerative prices to vegetable growers of the State are something for which those at the helm of affairs should never be spared.

Assam: Something fishy happening in the Fishery Department

<https://www.sentinelassam.com/top-headlines/something-fishy-happening-in-the-fishery-department/>

"Certainly something fishy is going on in the State's Fishery department that has a large number of ponds only in office files but not on the ground, and ponds shown as new in the office files

turn out to be the old ones on the ground. And funds have already been released against all such ponds according to their status in the office files, not on their actual status on the ground. If this is the ground reality in the department, how can the 'Ghore Ghore Pukhuri, Ghore Ghore Maas' scheme announced by Chief Minister Sarbananda Sonowal two years ago meet its goal? Handing over the appointment letters to a number of candidates for the post of Fishery Development Officers on March 1, 2019, the Chief Minister had said, "Assam must become self-reliant in fish production. The Fish sector has immense potential, and we must vigorously engage in it for deriving the maximum benefits. There are a large number of registered and unregistered beels, ponds, river fisheries, tanks etc in Assam. However, the State has to import on an average 12,000 metric tonne of fish annually from other States like Bihar, Andhra Pradesh, Uttar Pradesh, West Bengal among others.

Individual assistances were disbursed under the 'Ghore Ghore Pukhuri, Ghore Ghore Maas' scheme. To avail this benefit, an individual has to show the documents of his/her patta land. However, a recent survey on this scheme conducted in Morigaon district has revealed large-scale anomalies. It has come to light that around 40 per cent of the beneficiaries of this scheme have no pond on the ground even though office files show ponds against their names. This is not all. Around 30 per cent of the beneficiaries of this scheme availed the benefits under the scheme showing their old ponds as new ones. What has gone seriously awry in the 'Ghore Ghore Pukhuri, Ghore Ghore Maas' scheme? It is amply clear that the Fishery department did not verify the pond sites physically before granting the assistances, and maybe they went ahead depending on land documents shown to them by the beneficiaries. Such anomalies have been noticed only in one district. There are other districts in the State. The government is now going to conduct such surveys in rest of the districts. Assam has 430 registered beels covering around 60,000 hectares of land, and around 700 unregistered ones.

Apart from them, there are around 3.70 lakh ponds and tanks and around 5,000 km river fisheries. The total annual production of fish in the State is around 3.50 lakh metric tonne which cannot meet the fish demand of the State that imports annually around 12,000 metric tonne of fish, draining out a huge amount of funds from the State every year. If the government starts a scheme, it is its bounden duty to see if the scheme is really doing well on the ground. Without proper monitoring no scheme can be successful, and what is seen in the 'Ghore Ghore Pukhuri, Ghore Ghore Maas' scheme in Morigaon district is direct fallout of the lack of monitoring by the department concerned.

Assam: Fishing, agriculture impacted by burning river in Upper Assam: Residents

<https://www.downtoearth.org.in/news/environment/fishing-agriculture-impacted-by-burning-river-in-upper-assam-residents-69155>

"A four-day fire on the Burhi Dihing, a tributary of the Brahmaputra, at Pandharaghat village, 450 kilometres east of Guwahati, has affected fishing and farming, locals said. The riverine ecosystem in the region enables fishing and farming of food grains. The area is part of 'rice bowl' Sasoni, a region that encompasses the Dibrugarh and Sivasagar districts of Upper Assam. Comprising 85 villages, Sasoni is crisscrossed by oil pipelines and small rivulets that join the Burhi Dihing, which then flows into the Brahmaputra. On the morning of January 28, 2020, the central tank farm (CTF) of public-sector Oil India Ltd (OIL) shut off all inlets from various oil wells, or outlets, in the region. Within a few hours, authorities observed leakages at five different points within the periphery of the CTF as pressure started building on all the pipelines. By the end of the day, two leakages were also observed in the delivery pipelines. According to a February 3 press statement, crude oil leaking out of at least one pipeline started to spillover and it began to trickle down to one of the rivulets that join the Buri Dihing. By January 30, a large amount of crude oil had leaked onto the river. The press release states that some miscreants may have set the oil slick on the river on fire.

The fire started on January 31, according to media reports. "We were ready to evacuate from the village. The river was burning 200 metres from our houses. We do not know how to stop a river when it is on fire, Anil Das, a fish farmer from Pandharaghat, said. "This is a season for fishing. The river water is clear and catching fish is easy as compared to the monsoon months. But with this oil still floating on the river, all the fish have moved upstream, he added. The administration was slow in its response and the reason might have been political, residents said. "They deliberately did not visit the area for two days because we have been protesting the Citizenship Amendment Act and supplying food grain to the protestors. It was only February 2 that a team finally came to inspect the river, Rajen Dutta, a resident of Pandharaghat, said. An OIL spokesperson informed the media on February 3 that the fire had been contained. However, according to locals, much of the oil slick has travelled downstream. "As we moved further downstream, we observed that the oil slick was settling down next to the banks. In some places, we saw small, pebble-sized crude oil concentrates floating in the water. In places, we also saw fires which are moving towards the ground burning the dried grasses and shrubs, Angshuman Mishra, a Duliajan-based environmental filmmaker, said. On February 3, the Dibrugarh district administration formed a team led by the Tengakhat circle officer, State Pollution Control, Fisheries department and experts from OIL. OIL officials are yet to estimate the quantum of the oil that may have been leaked on to the river and its floodplain. Local journalists said the pipelines carrying crude in the area are at least 60 years old as Naharkatia and Sasoni are some of the oldest oil concessions in Dibrugarh district. "The oil pipelines here are very old. Some of them are at least 70 years as oil drilling in the area has been going since the 19th century, Pranjal Bhuyan, a local journalist from Tengakhat town, located close to the affected region, said.

Assam: Workshop on Brahmaputra river islands

<https://www.telegraphindia.com/states/north-east/workshop-on-brahmaputra-river-islands/cid/1735525>

"Experts working with community in three river islands Majuli (Majuli district), Chalakura Char (Dhubri district) and Kobu Chapori (Dhemaji district) in the Brahmaputra have urged both the government and NGOs to treat the islands and their people as "special and prepare specific policies to reduce their risk of disaster and climate change on a war footing. A workshop on Community resilience to water induced disaster and climate change: Vulnerability and adaptation in Brahmaputra river Basin organised by Aaranyak in Guwahati recently dealt in detail with various problems faced by the community. Dr Partha J. Das, head, water, climate and hazard (WATCH) division of Aaranyak said on Monday river islands are the most disaster-prone areas of Assam and the inhabitants of the sars are the most vulnerable population because of lack of socio-economic empowerment, infrastructure, effective disaster management and climate change adaptation programmes. Das gave a presentation on the theme of the workshop which was carried out recently by the WATCH division. Bedika Borah, Wahis Hussain and Navajyoti Deuri also of Aaranyak presented detailed case studies on Majuli, Chalakura Char and Kobu Chapori respectively. Arup Das of the geospatial technology application division of Aaranyak explained the findings from a GIS remote sensing based study of the three river islands.

Assam: Community Fishing at Deepor Beel Begins

<https://www.sentinelassam.com/guwahati-city/community-fishing-at-deepor-beel-begins/>

"Deepor Beel was seen teeming with buyers with the fishermen community starting their annual fishing in the water body from Sunday. Fishing will continue for a few days in the Beel. Traditional fishermen equipped with various fishing devices like nets, bamboo-made fishing wickerwork etc from Keotpara, Natunbasti, Heerapara, Nuapara, Borbori, Matia etc rushed to the Beel and started fishing this morning. Thousands of people thronged the wetland to buy fish or just to watch as to how the fishermen catch fish. This annual fishing in the wetland revives an old system of selling and buying fish that is called aska in Assamese. According to this system of buying and selling, fish is sold without being weighed. Bargaining starts from the size of fish, without weighing it. This system goes on the bank of the water body in the fishing season and at the Godhuli Bazar (evening market) at Azara all throughout the year. The Deepor Beel Panchpara Samabai Samiti Ltd (DBPSSL) did release fingerlings of various fish species in the Beel last year.

Assam: Locals ready for community fishing in deepor beel, section 144 imposed

<https://www.newslivetv.com/guwahati/locals-ready-for-community-fishing-in-deepor-beel-section-144-imposed/>

"Despite ban on fishing in Deepor Beel, the locals near the wildlife sanctuary are preparing for the annual ritual of community fishing. The week long community fishing will reportedly begin from January 5. Every year, in the first week of January, hundreds of villagers from the areas around Deepor Beel take part in the community fishing in the Beel to welcome the new year. In the midnight on Jan 4, fishermen on more than five hundred boats will cast their nets to the wetland. Several environmental organisations have expressed their concerns over the proposed community fishing which they feel would threaten the bio-diversity of Deepor Beel. Meanwhile, Assam forest department has imposed section 144 CrPC under the Wildlife Protection Act, 1972 prohibiting fishing, excavation and construction around the Deepor Beel Wildlife Sanctuary. The wildlife sanctuary located at the south-west of Guwahati city is known as a Ramsar site under the Ramsar convention. Every year during winter thousands of migratory birds make the wetland a place of visual retreat for the bird watchers and tourists.

Assam: Impact of shutdown prices of essential commodities skyrocket

<http://e-pao.net/GP.asp?src=6..161219.dec19>

"Due to the unrest gripping Assam in the wake of the Citizenship Amendment Act 2019, the prices of goods and essential commodities in Manipur have shot up as no new stocks are being brought into the State anymore. Speaking to The Sangai Express, the shopkeepers at Alu Galli, Thangal Keithel, said that earlier, due to the rise in price of onion felt all over the country, the Indian onion variety used to be sold at more than Rs 100 per kg. The shopkeepers informed that around three months back, after the stock of Indian onion got depleted, the only alternative left was to import onion from Moreh side and added that this onion variety used by be sold at around Rs 40-50/kg. However, this onion variety is now being sold at Rs 80-90 per kg, the shopkeepers informed. Prices of other items have also shot up including the smaller variety of garlic which now costs Rs 170-180/kg while the larger variety of garlic goes for around Rs 100 per kg. Moong dal used to cost Rs 70/kg, but now it costs Rs 93/kg. Potatoes with eyes or sprouts, which used to be sold for around Rs 26/kg, has also increased. Dried chillies now cost Rs 230/kg (earlier they used to cost around Rs 170-180/kg) .

The prices of some varieties of dal have also increased although there are some whose prices still remain the same. However, prices of packaged products have not increased yet, the shopkeepers pointed out. Speaking to this reporter, a woman rice seller conveyed that Meitei Cheng is currently being sold at Rs 50/ kg even though it was sold for Rs 45-48/kg earlier. Another shopkeeper said that earlier people used to complain when the said rice variety was sold for Rs 35-40/kg but now the price has reached Rs 50/kg and sometimes a little more. On the other hand, an imported fish seller said that Rohu used to cost Rs 150/kg but now the fish costs Rs 170/kg. Now Sareng costs Rs 480-500/kg (from the earlier Rs 450/kg). Ngahei is now sold at Rs 160/kg (earlier it used to cost Rs 150/kg).

The prices of Mackerel, Mrigal and Elisha still remain the same. Prawns used to cost Rs 730/kg but now the price has climbed to Rs 750, she informed. The woman fish seller continued that earlier, boxed fishes used to be imported into Manipur every single day but after the CAA issue gripped Assam, only two trips have reached Manipur this week. If no fish import reach the State today, then there will be no more imported fish to sell anymore, she added. Another woman fish seller informed that prices of local Rohu and Grass Carp have also risen. Speaking to The Sangai Express, a vegetable whole seller from Nagamapal said that the prices of all vegetables have gone up by around Rs 10-20. Explaining that only the indigenous vegetables are not enough, the shopkeeper said that it has been three days since vegetables have not been imported into the State. If the current stock gets over, then there will be no more vegetables to sell, he said.

Assam: Study maps livelihoods most vulnerable to climate change in Guwahati

<https://india.mongabay.com/2019/11/study-maps-livelihoods-most-vulnerable-to-climate-change-in-guwahati/>

- A livelihood vulnerability study conducted in Guwahati, Assam, finds that farmers are the most sensitive to climate change, followed by drivers and street food sellers in the urban setting. - Doctors were identified as the least vulnerable community

Assam: Cultivate 1 tonne fish in your house

<https://www.newslivetv.com/assam/cultivate-1-tonne-fish-in-your-house/>

"Life is but a stream, and we go fishing in! Got no space to fish? You could do it in your own home! You may have heard of urban farms or rooftop kitchen gardens. But what if I said that you could breed and cultivate fish in your home? Well, Gohpur-based Uddipta Hazarika has used Bioflock fish farming in order to grow good quantity of organic fish. This is a new concept taking ground in India in the past few months. Hazarika recently addressed the media at Press Club, Guwahati about the techniques and advantages of Bioflock Fish farming which was invented by Yoram Avnimelech of Israel. Hazarika explained that the farmers can use this

technique and cultivate up to 1tonne of fish by using 4 metres of tarpaulin in a ten thousand litre water tank without investing much. According to Hazarika, Biofloc farming technology is used in Fish and Shellfish culture with limited or zero water exchange under high stocking density, strong aeration and biota formed by Biofloc. The culture of Biofloc will be productive in case of culture tanks exposed to sun. The Biofloc technology is not only effective in treating the waste but also grants nutrition to the fish and shellfish farming. It is an innovative and cost-effective technology in which toxic materials such as Nitrate, Nitrite and Ammonia can be converted to protein feed. "Biofloc fish farming is definitely a very lucrative business in India and has many advantages. Of course, the profits depend on many factors including the setup, culture practices etc. Keeping in mind these entire conditions one can definitely help in the economy of the country by forming a chain of fish farming business at a very low cost, said Uddipta Hazarika.

Assam: To install one lakh tubewells for irrigation

<https://in.news.yahoo.com/assam-install-one-lakh-tubewells-165149435.html>

"Assam government on Wednesday announced to install one lakh tubewells across the state in order to provide water for irrigation in the state. The tubewells will be installed under the Pradhan Mantri Krishi Sinchayee Yojana with a view to extending coverage of irrigation and management of ground water, an official release said. 'A decision to this effect was taken in a meeting of the Irrigation Department chaired by Chief Minister Sarbananda Sonowal today. Under the scheme, in the first phase 4,779 solar and electric power driven tubewells will be set up in the state, benefitting around 18,577 farmers,' it said. Sonowal also said an efficient implementation of the scheme would lead to overall improvement of the socio-economic condition of the farmers. The chief minister also took stock of the implementation of various schemes of the fisheries department. He asked the department to protect and preserve water sources of the state like pond, fishery etc to maintain the sustainability of aqua life. Sonowal observed that if the 2,700 water bodies of the state are maintained for sustaining their quality of aqua life, Assam would be able to export fish besides fulfilling the domestic needs of the state.

Assam: 100 Pisciculturists benefit from awareness Camp in Longding district

<https://www.sentinelassam.com/north-east-india-news/100-pisciculturists-benefit-from-awareness-camp-in-longding-district/>

"Over 100 persons involved in pisciculture benefitted from awareness programmes on 'In-situ conservation of indigenous fishes', organised at Otongkhua and Tissa villages of Longding district by the Tirap KVK, in collaboration with the Assam Agricultural University (AAU), on 14 and 16 November, respectively. The programmes were organized under the National Mission on Himalayan Studies-sponsored project, 'Assessment of environmental health and

ichthyofaunal biodiversity of the Tirap and the Tissa rivers of Arunachal Pradesh and promotion of fish-centric supplementary livelihood options through a participatory approach'. During the programme, the AAU's College of Fisheries' assistant professor, Dr. Rajdeep Dutta, explained: "the ill-impacts of destructive fishing methods such as electrocution, poisoning, bomb blasting, etc, on the indigenous fish fauna of rivers of Arunachal Pradesh. He also spoke about different measures for the conservation of precious fish species of the rivers of the Arunachal Himalayas. Tirap KVK fisheries scientist, Phurin Songtheng, informed the participants about the different fish farming technologies they could adopt for culturing fish in ponds "as an aid to in-situ conservation of fishes. Awareness leaflets were also distributed among the participants.

Assam: Despite availability, hilsa fish prices soar up

<https://nenow.in/north-east-news/assam/assam-despite-availability-hilsa-fish-prices-soar-up.html>

"The flow of iconic fish Hilsa is rising in Assam's Dhubri market during this particular session since last couple of years. Even traders from outside have thronged the local markets of Dhubri to buy the king of fish in bulk. The common people have to pay more price than expectation due to the syndicate of illegal trade of Hilsa. Sources revealed that minimum 10 -12 mini trucks loaded with hilsa fish in the wee hours are transported to Bengal and other parts of north-eastern states every day resulting. This has led to rise in prices of the fish in the local market. Also read: Assam: Hilsa abounds in Brahmaputra again to tickle taste buds of fish lovers. Remarkably, a month ago, the price of the hilsa fish in Dhubri market was above Rs 900-1000 per kilograms, but due to the easy availability of the fish in river Brahmaputra, the price has dropped to Rs 250-Rs 450 per kilograms. But, again the prices of hilsa has gone up to Rs 500-600 per kilograms due to rampant trading. Notably, in the year 2017, the state Fishery department had issued an advisory regarding over fishing & catching of juvenile hilsa less than 23 centimeters in length for ensuing better hilsa production.

Even measures were taken for conservation as well as protection of the fish against over exploitation. The advisory which was issued to the deputy commissioners of four districts of lower Assam namely Dhubri, Goalpara, South Salmara Mankachar and Bongaigoan in which it was clearly stated that the hilsha fish is marine, freshwater, brakish, pelagic-neritic, and anadromous. It can grow up to 60 centimeters in length with weight up to three kilograms. The fish shoals in coastal water and ascends up the rivers (anadromous) for around 50-100 kilometers to spawn during the south west monsoons (June to November) and also in January to April. And, acting on the said advisory of Fishery department, the Dhubri district administration had also issued a letter to the local authorities concerned through which it has been directed to make awareness by printing leaflet, give wide publicity and also carried raids if needed, in order to prevent over fishing and catching small hilsa with immediate effect. But, in a surprising way,

neither the district administration nor the Fishery department has come forward to protect and preserve the iconic fish later on.

Assam: Bio floc fish farming unit set up in Dibrugarh

<https://nenow.in/north-east-news/assam-bio-floc-fish-farming-unit-set-up-in-dibrugarh.html/amp>

"Bio floc fish farming unit was set up at Lahowal in eastern Assam's Dibrugarh on Monday. This is the first unit in Assam. Bio flock fish farming is a new concept of growing fish in controlled atmosphere. Under the initiative of Suresh Varma, chairman of Assam plastic industry the unit was set up. Assam plastic industry with the help of fishery department a training session was held. Suresh Varma said that the Bio floc fish farming technology can solve the unemployment problem in Assam. "This concept if successfully undertaken will help to grow good quantity of organic fish, said Varma. This is a new concept taking ground in India during the last few months, he added. "This is an Israeli technology with lot of units in Indonesia, he informed.

"In India the social media is full of stories training programme and other inputs on this subject, he also said. "In Assam and the northeastern region this concept is also picking up slowly but there is no proper an authentic set up for such new technology, Varma added. Assam plastic industry has started producing this plastic fish tank and is the only such unit in the entire northeastern region to do so. The company had also tied up with experience professionals to provide training and support to local unemployed youth for setting up such project. Nitish Jha, an expert from Bihar shared his experience for setting up of bio floc fish farming unit. He said that after setting up of unit one can solve the unemployment problem. "It is an Israel based technology. Without digging pond one can harvest fish farming but in some area water crisis is growing and pollution has been growing. So, this new concept will give a impetus to the society, Jha said. Bio floc technology is a technique of enhancing water quality in acqua culture through balancing carbon and nitrogen in the system. The technology has recently gained attention as a sustainable method to control water quality, with the added value of producing proteinaceous feed. Jha praised Suresh Varma for bringing the technology to Assam for helping the unemployed youths. "Without digging pond, one can start fish farming with the help of this technology. Many are doing this technology in India and earning money through this new concept, Jha said. Jha said in coming days Assam plastic industry will organize training programme for the people who are interested to start the bio floc fish farming tank.

Assam: Cage culture: New technique to boost fish farming

<https://www.sentinelassam.com/top-headlines/cage-culture-new-technique-to-boost-fish-farming/>

"A new form of fish farming, known as 'Cage Culture', is set to take place in flowing water of beels, ponds and fisheries in various parts of Assam, raising hopes for an increased production of fish. The practice, under which fishes will be nurtured in enclosures, has already brought hopes to many farmers in many districts because of the scope to grow a higher quantity of variety of fishes in cages compared to ponds, beels and fisheries. The scheme designed as fish farming in cages will be initially implemented in 10 places in Bongaigaon, Baksa, Barpeta and Nagaon district as pilot projects. Under the new practice, a battery of 10 cages will be installed in a particular pond or fishery or beel. While three cages will be used to raise fingerlings, the rest seven cages will be used for fish production. As a result, raising of fingerlings will be three times more than the conventional method. Similarly, fish production will be double than the traditional practice.

Secretary of Fishery department Rakesh Kumar told The Sentinel that the prime objective of adopting the practice of fish farming in cages is to exploit the full potential of this sector to make Assam self-sufficient in fish production. He said such a practice will also be very beneficial for farmers of flood-prone State like Assam. Kumar added that since the cages will float in water, the annual flood water cannot destroy fish farming under the new system. Floods will not be able to wash away fishes as the cages will keep floating above the rising water. Under such farming, big fishes cannot hunt fingerlings since they will be protected under cages. Farmers can produce four to five types of different fishes in cages. The cost of a single project will be Rs 10 lakh. While the beneficiaries will have to bear 30 per cent of the total cost, the rest 70 per cent will be borne by the State Government as subsidies. At present, Assam produces around 2.94 lakh tonne of fishes against the annual demand of 3.40 lakh tonne. As a part of Chief Minister's Samagra Gram Unnayan Yojana, the Fishery department is initiating various steps such as development of beels, setting up of fish seeds bank, expansion of fish farming culture and adoption of innovative measures to enhance fish production in the State.

Assam News Articles Compilation
By ICSF

Assam: Environmental scientist rears fish in rooftop pond in Guwahati

<https://nenow.in/north-east-news/assam-environmental-scientist-rears-fish-in-rooftop-pond-in-guwahati.html>

Environmental scientist Amarjyoti Kashyap has innovated the concept of fishing in urban homes by converting 1000 sq ft of the terrace area in his residential building into a natural pond and recreation centre. Kashyap has ingeniously converted the area of his terrace into a breeding ground of different types of fishes and promoted the idea of rooftop fishing directly from his two-storey residential building located on Hatigaon area in Guwahati. He has been rearing and cultivating fish in his own residence for quite sometime. Rooftop fishing is a great method of urban farming that can help urban dwellers in saving money as well as earn additional income by selling the fishes bred in rooftop ponds. Kashyap who was a former environmental science professor also associated with an NGO Environ which addresses issues of environmental degradation and work for economic development in the northeastern region.

The environmental scientist had invented a waste assimilator due to which he won the Millennium Alliance Innovation Award entitled “Solid Waste Resource Management and Environmental Sanitation” in 2017. Kashyap’s invention of waste assimilator has been chosen as the only innovation under the Water and Sanitation segment in 2017 by Millenium Alliance. Millenium Alliance is a joint platform of many leading global organizations which identify breakthrough research innovations carried out in India that could help in addressing various developmental challenges of the country. The waste assimilator is a device that can convert solid biodegradable kitchen waste into useful organic compost that can be used for growing different kinds of crops.

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.

Assam: Second wave of Assam floods claims 4 more lives; Toll rises to 86

<https://weather.com/en-IN/india/monsoon/news/2019-07-30-second-wave-of-assam-floods-claims-4-more-lives-toll-rises-to-86>

Even as the rainfall eases and waters recede, the deadly floods in Assam claimed four more lives on Sunday, taking the overall death toll to 86. According to a bulletin released Monday evening by the Assam state disaster management authority (ASDMA), 12.24 lakh people are currently affected by floods. The highest number of victims is in Barpeta (8.19 lakh), Morigaon (2.01 lakh) and Goalpara (over 1 lakh) districts. A total of 1113 villages have been hit by floods. The bulletin also adds that 14,727 inmates are currently seeking shelter at 322 relief camps. Assam has been facing dire floods since around July 10, when heavy monsoon rainfall caused the Brahmaputra, and many of its tributaries, to flood their banks.

The rising waters inundated thousands of villages and displaced lakhs of people. Even animals were not spared. Around 220 animals are reported dead at Kaziranga National Park. This figure includes 20 one-horned rhinos as well as hog deer and other animals. On Monday too, the Brahmaputra was flowing above the danger level at Neamatighat in Jorhat and Dhubri. the Dhansiri River was above the danger mark at Numaligarh, the Jia Bharali in Sonitpur, and the Kushiya at Karimganj, said the Central Water Commission. The IMD has forecast moderate rain/thundershower over Assam and other parts of the northeast for the coming days. However, rainfall on the scale of the past few weeks is not expected in coming days.

Assam: China, Bhutan or deforestation role in Assam flood?

<https://www.deccanherald.com/national/east-and-northeast/china-bhutan-or-deforestation-role-in-assam-flood-750078.html>

Streamflow or rainfall data shared by China and Bhutan during the Monsoon makes very few in downstream Assam happy. The growing volume of water and the silt flowing down through the Brahmaputra originating in China and many of its tributaries from Bhutan is blamed for the flood, a problem aggravating almost every year. “The Centre is blamed for not providing sufficient funds for floods in Assam. We have a sufficient amount of money for relief work but do we have an action plan in hand as yet for a permanent solution? Look at the volume of water that flowed down from China this time too. I am not saying China released excess water but we must keep this factor in mind before blaming the government,” Assam minister Himanta Biswa

Sarma told reporters here recently, when flood wreaked havoc, affecting over 58 lakh people in 31 of the state's 33 districts.

Although flood is an annual problem, the scale of devastation has increased in the past few years - nearly 100 deaths during every flood, economic loss of at least Rs 5,000 crore and loss of 8,000 hectares of landmass due to bank erosion. This has prompted a call from many here to persuade China to form a joint action plan to tame the Brahmaputra and a similar mechanism for the rivers flowing down the hills of Bhutan causing devastation in western Assam districts. The Brahmaputra, the world's second-biggest river, originates in the Tibet region of China. The river flows through Arunachal Pradesh and Assam before it drains out into the Bay of Bengal through Bangladesh. "There are reports that China has constructed several big dams in the upper reaches of the Brahmaputra and so the flow of water is more when excess water is released suddenly.

The water level in the Siang (the Brahmaputra is called Siang in Arunachal) suddenly drops during winter," said a student leader in Arunachal Pradesh. Panic gripped the frontier state when the water level in the Siang suddenly dropped in October last year. As per the agreements, China and Bhutan provide river flow or rainfall data to India but the two countries lack a joint mechanism to manage the trans-boundary rivers. Some experts, however, blame the forest cover loss in Assam and Arunachal Pradesh more than the water from China or Bhutan. "The Brahmaputra basin receives an average annual rainfall of about 1500 mm, whereas the same is barely 400 mm in the Tibet region. Thus, bulk of the flood flows are generated within the watershed areas of India, while the Yarlung Tsangpo mainly conveys the snow melt stream flow mostly from the Himalayan glaciers," Nayan Sharma, an adjunct professor of IIT-Roorkee, told DH.

"The extensive loss of forest cover in the North-east has significantly reduced the time of concentration of overland rainwater, which caused hike in flood water accumulation in the river system at a faster pace than earlier. The increased silt load in excess of transport capacity of streams gets deposited in river beds, which decreases the flood-carrying capacity," he said, stressing on massive afforestation and soil conservation programme in the watersheds, construction of multi-purpose storage dams using advanced technology and channel improvement for the braided Brahmaputra and its tributaries. According to a report of Global Forest Watch, India lost 16,744 sq km of forest cover between 2000 and 2018, of which 12,523 sq km, a whopping 74.7%, was from the North-eastern states.

Assam and Bihar: Death toll in Assam, Bihar floods reaches 174

<https://www.indiatoday.in/india/story/death-toll-in-assam-bihar-floods-reaches-reaches-174-1572771-2019-07-24>

The death toll in Bihar and Assam floods mounted to 174, with a total of 1.09 crore people being affected by the calamity in the two states, officials said. Though water levels have started

receding in several districts of the two states, both reported two deaths each since Monday. With both the casualties taking place in Madhubani district of Bihar, the toll in the state reached 106. In Assam, the number of deaths touched 68 as two more people died in Morigaon and Golaghat districts since Monday. A total of 28.01 lakh people were affected in 19 of the 33 districts of the northeastern state, officials said in Guwahati. Though the flood waters have receded in Biswanath and Karbi Anglong districts, the deluge hit Lakhimpur and Baksa again, the Assam State Disaster Management Authority (ASDMA) said.

In the Kaziranga National Park in Golaghat district the death toll of animals rose to 204, including 15 rhinos, since July 13, it said. In Bihar, water levels have started receding in several districts and consequently the number of relief camps and those taking shelter at these have also gone down considerably, Disaster Management Department officials said. A population of 80.55 lakh in 12 districts are still affected in the state. The number of relief camps on Tuesday was 54, as against more than 130 a week ago and the number of people staying at those places has gone down from over one lakh to 29,400, the officials said.

Assam: Initiatives to enhance fish productivity in Hailakandi

<https://www.sentinelassam.com/news/initiatives-to-enhance-fish-productivity-in-hailakandi/>

Development of water bodies to boost fish productivity in Hailakandi district will begin soon. District Fishery Development Officer, TK Sinha informed that development of water bodies under SOPD 2019-20 for SCSP cooperative societies, community and groups in SC areas will start soon, the process of which is underway. As against the project cost of Rs 7 lakh per hectare, the State government will bear Rs 5.60 lakh (80 per cent) while the beneficiaries' share will be Rs 1.40 lakh only. The total number of beneficiaries should consist of 10-15 against one community tank measuring 1.0 hectare to 5.0 hectare. Sinha informed that the government would release its share only after the execution of the construction work from the beneficiaries' resources.

Apart from this, work will also commence soon on conversion of low lying areas into community tank for fish culture under RKVY for the year 2018-19. Sinha informed that interested group of farmers, youth, SHGs or any other community based organisations, including cooperative societies could seek financial assistance from the government under the scheme. Of the total unit cost of Rs 5 lakh per hectare, the State government's share and the beneficiaries' share will be the same i.e. Rs 2.50 lakh per hectare. As regards inputs cost of Rs 1.50 lakh per hectare, the State government as well as the beneficiaries' share will be Rs 0.75 lakh per hectare each.

Assam: High-level team of Fisheries department inspects schemes implemented in Darrang

<https://www.sentinelassam.com/news/high-level-team-of-fisheries-department-inspects-schemes-implemented-in-darrang/>

A high-level team of the officials of the State Fisheries Department, accompanied by world fish expert Dr. Trong from Malaysia and Dr. Suresh, on Monday visited various ongoing schemes of the department being implemented in Darrang district under different programmes of the Fisheries department. Director of Fisheries Padma Nath Das along with other senior officials of the department led the team to make an on-the-spot study of the successful implementation of the schemes which are likely to benefit the fish entrepreneurs of the district. The team inspected different schemes being implemented under RIDF, RJDI, APART and SOPD and expressed satisfaction over the proper execution and implementation of the schemes.

Significantly, the team detected fishing in natural water bodies with fishing nets which is a violation of the provisions of the relevant laws and also seized several fishing nets from the violators. The team also took part in a number of awareness camps to create awareness on the need of honouring the provisions of the rules concerned only for the greater interest of the fish farmers. During their visit to the Upahupara fish farm at Mangaldai, the team examined the quality of the fish seed produced at the farm. Later, talking to the media, Director of Fisheries Padma Nath Das said that the department had already taken up several major schemes under APART for the development of several fish farms of the State so that the required fish seeds could be made available round-the-clock. He also assured to take up some positive steps to encourage the fish farmers of the State so that they could take up fishery as their livelihood. District Fishery Development Officer Tapan Kumar Das and Nodal Officer of APART, Dr. Sanjay Sarma also accompanied the team during their day-long visit. The beneficiaries at Upahupara Fish Farm earlier extended a hearty welcome to the visiting team with a phulam Bihuwan in the traditional way.

Assam: Guwahati fish seller lands in trouble after selling 28-kg Barali fish

<http://www.newindianexpress.com/nation/2019/jun/15/guwahati-fish-seller-lands-in-trouble-after-selling-28-kg-barali-fish-1990591.html>

A gigantic fish, whose presence at a Guwahati market had drawn hordes of buyers on Thursday, has landed its seller into trouble. Taking cognizance of social media posts on the sale of the 28-kg “Barali” fish at Ulubari fish market, Assam’s department of fisheries has ordered a probe to find out as to how the fish was caught despite a ban on fishing. The ban was imposed as it is the breeding season. The department directed the Kamrup district fishery development officer to conduct the probe and initiate action against the offenders. Citing the ban on fishing, some social media users had demanded action against those involved in catching and selling the fish. Dozens of people had thronged the fish market in the heart of Guwahati on Thursday when local news

channels reported the sale of the big fish. Some had come to buy it while others had come to have a glimpse of it.

The fish seller, Shyamal, had bought it for Rs.17000 from a fish dealer and made a profit of around Rs.6000 to Rs.7000 by selling it at Rs.1000 to Rs.1200 a kg. His joys, however, turned into a nightmare as he now anticipates police action against him. A team of officials of the department of fisheries visited the market on Friday and grilled him. “I was told a case has been filed but it’s not my fault as I didn’t catch it from the river. I had bought it for Rs.17,000 from a fish dealer at Kolongpar Ghat in Sonapur. I learnt that a team of officials of the department of fisheries left for the place to interrogate the fish dealer,” Shyamal told this newspaper. He added: “The head of the fish weighed seven kg which I sold at Rs.200-Rs.300 a kg. I had told TV journalists it was a Brahmaputra fish but later, I came to know it was of river Kolong,” he said.

Assam: Fishing restrictions only on papers; Bangladesh imposes stringent ban

<https://nenow.in/neighbour/assam-fishing-restrictions-only-on-papers-bangladesh-imposes-stringent-ban.html>

The Assam Government issues an order around this time of the year regarding certain directives over fishing, but in reality the picture painted is totally opposite. It has become a customary practice of the Directorate of Fisheries banning fishing during the breeding season. This year also, the Fisheries Department has issued guidelines to the district fishery development officers particularly in the districts of Barpeta, Cachar, Hailakandi, Dibrugarh, Tinsukia, Sivasagar, Jorhat, Golaghat, Sonitpur, Lakhimpur, Dhemaji, Nagaon, Morigaon, Kamrup, Nalbari, Bongaigaon, Karbi Anglong, Dima Hasao, Udalguri, Chirang, Dhubri, Goalpara, Darrang, Baksa, Kokrajhar and Karimganj. As per the directives under the Assam Fishery Rules, 1953, there are prohibitions over use of Borjal/Mahajal or Fasijal or any type of nets with meshes less than seven cm/14 cm during breeding season. Moreover, there is prohibition on catching of brood fish of certain species in any fishery. There is also prohibition of catching and killing by any method, of fish for any purpose including consumption and selling of undersized fish of certain species during this period.

These are aimed at ensuing natural breeding, propagation and growth of fish in all fisheries and natural water bodies. However, all these remain in papers and rampant fishing goes on in every nook and corners of the State every year. The images tell it all. Local markets and make-shift shops mushrooming across the State openly sell fishes with eggs during breeding season across the State under the very nose of the administration. But on the contrary, the neighbouring country of Bangladesh has come up with strict measures to ensure breeding of fish. Bangladesh has banned fishing off its coast for 65 days from May 20 till July 23 to try and boost depleted fish stocks. During this period all types of fishing vessels would be covered by the ban and coast guards have been specifically directed to enforce it along Bay of Bengal.

Bangladesh is known for its fish exports, especially the king of all fishes – the majestic Hilsa. There were times when the famed Hilsa of river Padma after its breeding season in the Bay of Bengal even came downstream to Assam – particularly to Morigaon and Mangaldai. But over the years due to reckless fishing, the production of Hilsa in Bangladesh has depleted in enormous proportion. There were short-term bans on commercial fishing in the past in the neighbouring country, but this is the first time that all fishing boats, including local fishermen, have been banned for a lengthy period. It is about time that the Assam Government too come up with stringent measures to ensure that ban on fishing during breeding season is implemented in reality to save various local species of fishes in the State.

Assam: Know the Asia's Largest Dry Fish Market of Assam

<https://www.northeasttoday.in/know-the-asias-largest-dry-fish-market-of-assam/>

What is dry fish?: Dried fish are short-term edibles in which water loss and salt concentration ensure preservation. It also consists of smoking and salting of the fish. The fermented fish is a well known strategy of food preservation in the northeast region of India. The fermentation technology evolved in the north east by compulsion of people. Popular fermented fish products of this region of India include Shidal and Ionailish. Fermented fish contributes a regular menu in the diets of people of almost all categories of the region. The Market: Situated in the state of Assam, the market is just 50 kms away from the economic capital of the state Guwahati. It is towards the eastern side of Assam. It is situated in the place called Jagiroad in the Morigaon District. Jagiroad is famous for its dry fish market. This market is known as the largest dry fish market in Asia.

Approximately around Rs 40 cr transactions take place in the market. The market functions in the industrial town where high amount of business deals take place. Origin: During the late 1940's there used to be a Sunday market functioning in Silchar. People from different places like karimganj and shillong used to come to this market. However during the India Pakistan partition a big market in Dhaka closed down which resulted in the affecting of the Silchar market. Therefore some traders from karimganj came to Jagiroad to check the availability of setting up a market as it was well connected by both train and road transports. The market is situated near the Jagiroad railway station. At last they started a Sunday market somewhere after partition. In the beginning the market started catering to local needs. Gradually neighboring states like Manipur, Nagaland, Tripura and Meghalaya entered the Jagiroad market making it an important dry fish trading center of north east. Functioning: Area wise this market is not a big place consisting of an approximate of 100 shops operated by the Mahaldars.

This is the only market where the maximum transaction of dry fish takes place in Asia. The market generally operates 3 days in a week from Thursday to Saturday. An approximate of 1500

people is associated with this trade during the early days. Fishes from all over India comes to the market. Apart from Assam, different varieties of dry fish from Uttar Pradesh, Andhra Pradesh, Maharashtra, Porbandar in Gujarat, Gorakhpur and Lucknow in Uttar Pradesh, Teliamura in Tripura, and Siliguri in West Bengal are supplied. The market also conducts international business by exporting to countries like Bhutan, Malaysia, Singapore and some other Southeast Asian countries. Every year upto 1000-1200 trucks come to the market every year. The price of the fish depends upon the quality and size of the fish. During the peak season the sales go upto 70% and during the off season it remains upto 30%.

The market which is situated near Jagiroad Railway Station is well connected by the railways and national highway no 37. The trading is controlled by the Jagiroad dry fish merchants association. The association also pays a substantial amount of money as taxes and also donates part of its profit to school, colleges, organizations and various sports activities. Growth: “The market has witnessed around 20 percent growth in the last 20 years,” says Kamal Dey, the president of Jagiroad Dry Fish Merchants’ Association which runs the market. The market, set up in 1958, has 150 shops at present. About 4000 people are either directly or indirectly engaged with the market which covers an area of 30 acres. The market receives and supplies dry fish to various parts in trucks, and in trains to and fro Jagiroad railway station, which is located just behind the market.

The peak market season is January to March and it remains closed during the monsoon season. One special kind of dried fish sold in the market was known as “Sindal”. This is the costliest item of dried fish and considered as anti malarial by local population. This is prepared by putting the smaller fishes in bamboo cylinder and then sundried. Among the fresh water groups of dried fish, most commonly found were Channapunctatus, Aorichthysseenghala, Puntiussofophore, Amblypharyngodonmola, Notopteruschitala, Wallagoattu, Labeorohita etc. The marine species like Bombay duck and shrimps were also found in the market. Dried fishes are first assembled at Jagiroad wholesale market and after their arrival; they were further dried and sorted out quality wise. Controversy: The dry fish market has become a cause for concern for the people there. The market, after exemption from GST, is expanding, thereby covering a large residential area. The market usually occupies both sides of the busy Station Road leading to traffic chaos.

The Station Road leads to a telecommunications office, post office, Nakhola High School and many residential units. During market days, particularly on Thursday, Friday and Saturday, the road remains blocked by dry fish-laden heavy vehicles and even a pedestrian can hardly move on the road. The market is developing haphazardly with no proper planning of drainage and sewage system and as such, is creating an unhygienic environment in the area. Street dogs and crows carry the rotten dry fish and scatter them here and there. The odd smell of dry fish also causes discontentment among the people travelling or residing there. The people have urged the district authority to shift the market to the outskirts of the town and to develop it in a scientific manner.

Conclusion: All in all the market has become a great hub of attraction. It is because the dry fish is an authentic food of the north east. People of north east love their dry fish and they add this food item in their every menu. Secondly this market has given great boost to employment for the local people residing there. Many families are running just because their family members are working hard in the market. Thirdly this market leads to capital generation. The export and import, all these processes is making this market a big name in the global platform and that's why this market has already been termed as Asia's Largest Dry Fish Market already.

Assam: Fishing restrictions only on papers; Bangladesh imposes stringent ban

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Moreover, there is prohibition on catching of brood fish of certain species in any fishery. There is also prohibition of catching and killing by any method, of fish for any purpose including consumption and selling of undersized fish of certain species during this period. These are aimed at ensuing natural breeding, propagation and growth of fish in all fisheries and natural water bodies. However, all these remain in papers and rampant fishing goes on in every nook and corners of the State every year. The images tell it all. Local markets and make-shift shops mushrooming across the State openly sell fishes with eggs during breeding season across the State under the very nose of the administration. But on the contrary, the neighbouring country of Bangladesh has come up with strict measures to ensure breeding of fish. Bangladesh has banned fishing off its coast for 65 days from May 20 till July 23 to try and boost depleted fish stocks. During this period all types of fishing vessels would be covered by the ban and coast guards have been specifically directed to enforce it along Bay of Bengal.

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proportion. There were short-term bans on commercial fishing in the past in the neighbouring country, but this is the first time that all fishing boats, including local fishermen, have been banned for a lengthy period. It is about time that the Assam Government too come up with stringent measures to ensure that ban on fishing during breeding season is implemented in reality to save various local species of fishes in the State.

Assam: Fishing nets seized during an operation by the Fishery Department of Lakhimpur

<https://www.sentinelassam.com/news/fishing-nets-seized-during-an-operation-by-the-fishery-department-of-lakhimpur/>

In view to making people aware about the enforcement of fish related acts in the district, the Fishery Department of Lakhimpur launched operation in various places under Lakhimpur development block on Sunday. The District Information and Public Relation Officer, through a press release, on Tuesday informed that the operation was launched under Assam Fishery Rule, 1953 (as amended in 2005) and Assam Fish Seed Act, 2005 (Amended) by the District Fishery Officer and Task Force, OC of North Lakhimpur Police Station, Aditya Prakash Deori in the presence of executive magistrate Lambit Hazarika. During the operation, different kinds of fishing nets were seized from Dhalghat, Ghagar under the development block.

Similar operations were launched at various fish markets of North Lakhimpur town, such as Daily Market, Milan Nagar, CD Road and the fish market near Tyag Kshetra. In addition to District Fishery Officer, Fishery Office employees Pradip Tako, Haren Medhi, Bhogeswar Saikia, Guru Charan Boro, Kushal Baruah were present in the operation. Section 144 CrPC has been promulgated in Lakhimpur to control the unabated catching of fishes in the district during the breeding season in order to safeguard the fishes and spawn.

Assam: Egg-laden fish openly sold in Sivasagar markets despite a ban under the Assam Fishery Rule 2005

<https://www.sentinelassam.com/news/egg-laden-fish-openly-sold-in-sivasagar-markets-despite-a-ban-under-the-assam-fishery-rule-2005/>

Despite a ban on fishing during the months of May, June and July with fishing nets of certain gauge under the Assam Fishery Rule 2005, egg-laden fish are being sold everywhere within the district. Sivasagar fish markets at the Central Market and Station Chariali Market are abound with such egg-laden fish as fishing goes on in the local water bodies, rivers and fisheries. Though the district administration made an announcement in this regard, but no one seems to be serious about the ban imposed, which the socially conscious section of people here opine may lead to an ecological imbalance and wipe out the indigenous fish species. As incessant rainfall during the last several days has inundated the low-lying areas, a section of people have resorted to fishing

indiscriminately. Hence, it is felt that the district administration should take stronger measures to check illegal fishing.

Assam: Capacity-building programme on composite fish farming under way in Tinsukia

<https://www.sentinelassam.com/news/capacity-building-programme-on-composite-fish-farming-under-way-in-tinsukia/>

A four-day capacity-building programme on composite fish farming organized by JEEVA-SURAKSHA, a Sivasagar-based NGO in collaboration with DHSK College, Dibrugarh, began on Monday at the auditorium of DHSK College. Designed for the youths of the Mising community, the programme has been sponsored by Mising Autonomous Council, Gogamukh, Dhemaji. A total of 30 participants from Dehing Sessa of Dibrugarh district are participating in the programme. The programme was inaugurated by Dr Sashi Kanta Saikia, Principal of DHSK College, in presence of Prashanta Bori, Executive Councillor of Mising Autonomous Council (MAC), Lipy Deori, DDM, NABARD, Dibrugarh, Dr Sanjib Borgogain, Principal, HCDC College, Nitaipukhuri, Dr. Sultana Hazarika and Dr Mridul Sharma, Professors, DHSK College. Technically sound manpower always being a constraint in developing fisheries in the Northeast, Dr Ranjita Bania, Fisheries Biologist and course director of the programme while welcoming the participants, said the objective of the programme was to enhance capacity building in fisheries sector of Assam through entrepreneurship development.

In his address, Prashanta Bori as chief guest urged the youth to come forward to take up challenges to develop the rural economy through the fisheries development. He also highlighted the plan of MAC to develop Romai and Charaihabi village of Dibrugarh as model fish village in collaboration with Jeeva Suraksha. He also declared the support of Rs 20,000 each for the trained persons in this financial year. DDM of NABARD, Lipy Deori appreciated the efforts of Jeeva Suraksha for developing the fisheries sector of Assam and explained about the financial issues related to aquaculture. She also highlighted the role of finance, skill and willingness of farmers to grow in this sector. “The main challenge in front of science is to double the production. Moreover, the investment in aquaculture sector gives much better return compared to other businesses,” she added.

Assam: Fish export from Assam can boost economy: Sarbananda Sonowal

<https://www.sentinelassam.com/news/fish-export-from-assam-can-boost-economy-sarbananda-sonowal/>

“Assam must become self-reliant in fish production. Fishery sector has immense potential and we must vigorously engage in it for deriving maximum benefits. Assam is blessed with abundant water resources and we have the capacity to become the biggest producer and exporter of fish in the country. But for that, we must adopt the latest scientific technologies for augmenting our

production.” Chief Minister Sarbananda Sonowal said while taking part in the programme to distribute appointment letters to 35 Fishery Development Officers under Fisheries Department at the conference hall of Chief Minister’s Secretariat, Janata Bhawan on Thursday. Calling on the new appointees to strive hard to enable the fishermen and producers of the state a life of dignity, Sonowal directed the Fishery Department to prepare a roadmap for the development of fishery sector to fulfil the fish requirement of state without resorting to imports.

Hoping that the newly appointed officers would be able to make positive change in the department by infusing fresh thoughts and knowledge, the chief minister urged them to dedicate themselves to the cause of making the state a top fish exporter in near future. Urging the fish producers of the state to go for value addition of the fish produced in the state to cater to the international markets, the chief minister appreciated the fishery department for increasing the fish production to the tune of 20000 metric tonne in 2017-18 and he directed the department to work for increasing production even further so that fish import can be stopped. He also said that if the newly appointed officers of the department cannot help the fish farmers to increase production than their degrees in fishery sciences would be of little value. The infinite potential of Brahmaputra and Barak rivers must be harnessed to achieve fast paced development of state and vast presence of natural water-bodies must be properly utilised for growing the fishery sector, the chief minister said. He also called upon the new appointees to stay away from corruption and work for the development of fishery sector with all sincerity. Minister for Fishery Department Parimal Suklabaidya, Media Adviser to the Chief Minister Hrishikesh Goswami, Legal Adviser to the Chief Minister Shanatanu Bharali, Cice Chairman of ATDC Nabadeep Kalita were also present in the programme among others.

Assam: Govt. to Focus on Fisheries, Skill Development & Introduction of New Technologies: Bijoya Chakravarty

<https://www.northeasttoday.in/govt-to-focus-on-fisheries-skill-development-introduction-of-new-technologies-bijoya-chakravarty/>

With the Central Government focusing on the development of Northeast India in recent years, the region has been witnessing a momentum in trade and commerce, with agriculture leading the way. With tourism already a booming industry in recent decades, it is time for MSME sectors to up the ante and leverage on the growth-enabling policies introduced by the government. At the 2nd Emerging North East, an event organized by India’s oldest apex body ASSOCHAM, Smt. Bijoya Chakravarty, Member of Parliament, reiterated the fact that North East has become the center of attraction in regional development and it has now a real chance of becoming a major part of the India growth story. Commenting on the occasion, Smt. Bijoya Chakravarty said, “Northeast is a vantage entry point for the Southeast Asian markets. This resource-rich region, with its vast expanse of fertile farmland and huge untapped human capital, has the potential to be India’s most prosperous region in the coming years.

I invite all associations present here to make complete use of these advantages to move India's economy towards prosperity. Northeast has witnessed tremendous development in the recent years in terms of infrastructure. However, the local people still need proper training in order to absorb the employment opportunities from the new industries to be setup in the state." She also emphasized on the potential of fishery sector in this region and recommended wise use of modern technologies in the sector for proper business generation. The event witnessed presence of eminent personalities such as Shri Jayanta K. Samal, DGM, NABARD, Shri Malay Mandal, AGS, MSTC, Dr. Avinash Choudhary, Zonal General Manager, NSIC, Shri Kuldeep Singh Datwalia, Director General, PIB, Guwahati and Mr. Uday Kumar Varma, Secretary General, ASSOCHAM.

The three-day event has been organized to facilitate investments and partnerships, providing opportunities for local youth, women, Non-Governmental Organisations and developmental agencies to network with the national level institutions, industries, experts and officials from various departments. Inaugurating the event, Shri Uday Kumar Varma, Secretary General, ASSOCHAM, said, "Northeast enjoys locational and resource advantage to be promoted as an international trading and commercial hub. This year Emerging North East 2019 aims to strengthen the industries like tourism, horticulture, food processing, agriculture etc. this will not only help India in becoming a major economic superpower but will also open immense opportunities for employment, income generation leading to poverty alleviation and social sustenance in a comprehensive way, fulfilling the dreams of millions of our compatriots. Therefore, attracting business in Northeast India for the overall well being of the region is our top priority now.

We are making efforts to create interventions for building business partnership and have fruitful meetings & discussions to grow North East's footprints all over India." Understanding the unawareness and ignorance underwent in the past, the present Government is now specially focusing on this untapped part of India. Realizing the huge potentials those Northeast possess in terms of trade and commerce the Govt. is bringing in ease of doing business. It has announced a 21 per cent hike in budgetary allocation 2019-20 with assured infrastructural developmental initiatives in inland waterways and connectivity. The key aspect for the government in the coming months will be to increase bilateral trade and tourism in the region.

Of late, the initiatives taken by various other agencies clearly indicate that there is lot of scope for the region to harness the potential and business opportunities are available provided the people realizing to leverage the same. Emerging North East 2019 aims to highlight and showcase the potential of this region in sectors like agriculture, horticulture, food processing, livestock, rural development, infrastructure, energy, social and development sectors. With developing commercial links, NorthEast India can become a prosperous doorway to India's future and get on to the world stage by taking up opportunities offered.

Assam: Community fisheries of Darrang geared up for Uruka market

<https://nenow.in/north-east-news/assam-community-fisheries-darrang-geared-uruka-market.html>

People of Assam are now busy preparing for Bhogali Bihu celebration with traditional fervour and gaiety. When we talk about celebrating Bhogali Bihu, the community feast on the Uruka night under the ‘Bhelaghar’, is always considered of much significance. But can the community Uruka feast ahead of Bihu celebration be completed without the special taste of local fish variety. Perhaps not! At this time of high demand of local fish what becomes the centre of discussion is the role of the fisheries, both in the government and private sectors. In a district like Darrang which has been regarded as the mother land of fisheries with several thousands of big and small size fisheries, some of which are of historical importance there is hardly anyone in the government sector from where consumers may expect to purchase a kilo of fish.

There comes the names of a few pioneering community fisheries in the district from whom even a consumer of lower income growth can expect to buy a local fish at a much lower price comparing to the market . ‘Suri Pukhuri Meen Mahal’ at village Balipota under Kalaigaon Development Block in the district is one such community fishery which has been earning the faith of the consumers in the Bhogali market of the local fish variety gradually in a increasing manner year after year. The management committee of the fishery, surrounded by an area of more than 22 bighas for the last one week, has engaged experienced fishermen and several country boats for harvesting fishes from the main fishery and then shift those to small nurseries to keep them alive till they reach the market. Talking to this correspondent, the secretary of the fishery management committee, Gajen Sarma on Saturday said that in the last Bhogali in several leading markets of the State including Guwahati, Mangaldai, Tangla, Kharupetia etc, they on the day of Uruka itself supplied around 65 quintals of local fish from which they managed to earn a net profit of more than Rs 10 lakh and this year their target is to supply about more than 80 quintals and thus earn an income of around Rs 15 lakh.

“Following the harvesting in last few days we have observed that fish production had increased reasonably well and we are very much hopeful that we can supply more than eighty quintals in the coming Uruka market.” Sharma shared. Ramani Deka, [resident of the fishery management committee said that depending upon the fish variety which include Rohu, Bhakua, Mirika, Silver Carp, Sital, Rup Chanda, Kolajar etc and sizes ranging from one kg to six kg in weight a reasonable retail price of Rs 200 per kg on an average without any rate of increase compared to that of the last year market has been fixed for the consumers. “There is no increase in the price comparing to that of last year. The rate is much lower with regard to the market and it is fixed considering the buying capacity of the common rural customers,” Deka reiterated.

Apart from ‘Suripukhuri’, ‘Lakshmipur Anchalik Meen Mahal’ has also yielded high fish production and its management committee is all set to supply a large quantity of local fish to the

Uruka bazaar, said Bhupen Deka, one of the office-bearers. “Last year we sold nearly 90 quintals and earned around rupees forty lakhs. This time the figure will be even bigger,” he included. Meanwhile regarding the demand of local fish in the Uruka market of the district, Apurba Bhuya, District Fishery Development Officer (Information) while talking to this reporter stated that last year it was around 40 ton and this year with the expected increase in population it will be nearly 44 ton.

Assam: Fishery sector has immense potential and we must vigorously engage in it

<https://nenow.in/north-east-news/fishery-sector-immense-potential-must-vigorously-engage-assam-cm.html>

Assam Chief Minister Sarbananda Sonowal on Thursday said that the fishery sector of the State has immense potential and ‘we must vigorously engage in it for deriving maximum benefits’. Chief Minister Sonowal said this while taking part in the Fish Food Festival organized by Assam Fisheries Development Corporation Limited in cooperation with National Fisheries Development Board at Brindaban Garden in Guwahati on Thursday. “Assam is blessed with abundant water resources and we have the capacity to become biggest producer and exporter of fish in the country. But for that, we must adopt latest scientific technologies for augmenting our production,” Sonowal said. Appreciating the Fishery Department for being able to increase the State’s fish production by 20,000 metric tonne in 2017-18 from the previous year, the Chief Minister said that Chief Minister’s Samagra Gramya Unnayan Yojna (CMSGUY), a scheme to transform the rural economy with a budget outlay of Rs 33,000 crore, has also kept fishery as a priority area.

The infinite potential of Brahmaputra and Barak rivers must be harnessed to achieve fast paced development of State and vast presence of natural water-bodies must be properly utilized for growing the fishery sector, he added. Saying that countries like Vietnam has been able to sell fish imported from India at a higher rate by catering to the needs of the European consumers, Sonowal urged the people to adopt such practices to derive maximum benefit from the fish produced in the State. He also informed that cargo service has been launched recently in the State through which State’s farmers can export and sell their products in different parts of the country and the world and he urged the fish producers to take advantage of the cargo service. The government is taking all steps to popularize farming among the youth as a respectable means of livelihood, he stated. Minister for Fishery Department Parimal Suklabaidya, Chairman of AFDCL Ramakanta Deuri also spoke at the programme which was attended by Executive Director of NDFB Dr G Rathinraj among others.

Assam: Chief Minister Sarbananda Sonowal launches flagship scheme for fish production

<https://www.sentinelassam.com/news/chief-minister-sarbananda-sonowal-launches-flagship-scheme-for-fish-production/>

Chief Minister Sarbananda Sonowal launched the flagship scheme of State Fishery Department, “Ghare Ghare Pukhuri, Ghare Ghare Maach” in a programme held at Srimanta Sankardev Kalakshetra in Guwahati on Friday. The scheme is proposed to be implemented with loan assistance from NABARD and financial assistance from Chief Minister Samagra Gramya Unnayan Yojana (CMSGUY) Mega Mission Society. With financial allocation of Rs. 186.13 crore, this scheme will be executed in all districts of the State with a target to benefit ten thousand beneficiaries. The scheme aims at digging 1,811 hectare areas of new pond in a bid to produce 6,350 MT fish additionally in Assam, a press release said. Speaking on the occasion, Chief Minister Sarbananda Sonowal called upon the beneficiaries under the scheme to take up advanced scientific methods in pisciculture saying that mighty rivers like Brahmaputra and its tributaries as well as the water-bodies in the state hold immense potential for fish production in natural environment.

“Economic self-reliance would help the farmers of the State to enjoy a dignified life. Our Government has already unleashed strong measures to boost farmers’ income and ‘Ghare Ghare Pukhuri, Ghare Ghare Maach’ is a major intervention in this direction”, he said, adding that in synchronous with Central Government’s schemes like ‘Mudra Yojana’, ‘Krishi Sinchai Yojana’, Fasal Bima Yojana’ etc., the State Government has already rolled out CMSGUY in the state to leverage farm income.

Appreciating the Fishery Department for its significant role in augmenting fish production in the State to the tune of 20,000 MT last year, Sonowal observed that involvement of public in successful implementation of Government is very important and they must take proactive role in this regard. He also urged the youth to take up benefits of the Government initiatives to make them economically self-sufficient and contribute in strengthening the economy of the State. Guwahati MP Bijoya Chakraborty, Chairman of Assam Fisheries Development Corporation Ramakanta Deuri also delivered speech in the programme. Coinciding the launching ceremony, Chief Minister Sonowal also released a handbook on local fish production and conservation techniques titled, ‘Kunhipaat’. He also handed over sanction letters to ten beneficiaries under the scheme in the programme.

Assam: Climate change in India: Cuisine, culture take a hit in Assam

<https://www.downtoearth.org.in/news/climate-change/climate-change-in-india-cuisine-culture-take-a-hit-in-assam-61876>

"Weather is changing and so is naamsing," retorts Renu Pegu of Hapekhati village on being asked about a fish recipe, relished exclusively by the Mising fishing community of Assam. People in her village, located on the banks of the Dhansiri river which flows along Kaziranga National Park, prepare the delicacy from locally available minnows and 60 wild herbs, including turmeric, yam and siju (spurge leaves). They say the nutritional content of naamsing is

comparable to chhurpi, a hard cheese consumed by yak herders of Tibet. “It also helps prepare a quick meal after a hard day’s work,” says Renu, who helps her husband in running a paan shop. Minnows start rotting within half-an-hour of landing. So the Mising usually store them after drying. “For preparing naamsing, we crush the dried fish into a paste along with the herbs and stuff it in bamboo stumps, which are then sealed with leaves and clay from the river bank. At the time of preparation, we simply scoop out the paste, mix with water, add salt to it and let it boil for a few minutes.

Till a few years ago, Renu and her family used to relish naamsing with rice almost every day. “These days I make it only occasionally,” she says. Elaborates her husband Jatin, “Like most other fishes, minnows have become a rarity in the Dhansiri. Till about five years ago, I could catch more than 5 kg of minnows within an hour of casting net. I had set up a counter next to my paan shop for selling the excess catch. Now, I do not get a kg of fish even after spending the entire day in the river.” Bothka Doley, an experienced jalua (one who casts nets) from the village blames changing rainfall pattern for the dwindling catch. “The production cycle of fish is closely linked to rainfall and floods.” On an average, Assam receives the third highest rainfall in the country and experiences three waves of floods during the six-month rainy season that begins in April. As the rivers swell they connect the numerous waterbodies, rivulets and streams along the course. During pre-monsoon floods, when the Dhansiri is in spate, schools of fish migrate towards the Kaziranga National Park, whose 300-odd waterbodies serve as hatchery and nursery for fish and other aquatic fauna.

They return along with the new batches towards the end of June, when the river swells again and the water bodies spill over. “This is when we cast our nets around the mouth of the tributaries from the park and get a good catch,” says Doley. This cycle has broken in recent years. The detailed project report for Climate change Mitigation submitted by Kaziranga National Park authorities to the Union environment ministry in 2016 states that the annual rainfall has decreased by 2.96 mm per year between 1951 and 2010. During this period, the mean temperature in the state has increased by 0.01°C per year, with pronounced warming during post-monsoon months and winters. Due to this changing climate and decrease in annual rainfall, there has been an increase in extreme rainfall events that are causing flash floods, says the document. Natural floods are boon to the community, says Pranab Doley, advisor to Jeepal Krishak Sramik Sangha, a local farmers’ and marginalised rights organisation. But the community is now worried about the changing intensity and frequency of floods and the amount of sediments they carry. Consider this.

This year, Golaghat received 30 per cent deficit rainfall and was experiencing a drought-like situation. In August, 116 villages in Bokakhat sub-division of the district got inundated within a span of three days, following heavy rainfall and landslips in upstream Nagaland. The met department of Nagaland recorded 348 per cent excess rainfall in July alone. Experts say similar instances of flashfloods during droughts were also witnessed in 2009 and 2011, when the state

recorded 20 and 30 per cent deficit rainfall. “Floodwater laden with sediments is not suitable for spawning, and thus affects the post-monsoon catch,” says Bothka Doley. Desperate by the situation, some are catching the fish migrating for spawning, ignoring a fishing ban from April to July on the rivers and waterbodies in the vicinity of the park. The dwindling catch has also dissuaded fish traders who camp on the sand bars at Dhansiri Mukh, where the Dhansiri meets the Brahmaputra, with large nets, own team of fishers for three to four months post monsoon. “Fish from Kaziranga is a prized catch.

But it has now reduced by 2,000 to 3,000 kg,” says Momin Ali, a trader from Goalpara who comes to Dhansiri Mukh every year. “Earlier, at least 20 traders used to camp here. This year, only five have come,” he adds. Side effects of siltation. Heavy rainfall and increasing siltation load in the river has also changed the taste of naamsing and a traditional self-governance system. “Earlier we would wait for the land to emerge from the floods. The ideal way to dry fish is to spread it on the white sand in the winter,” says 76-year-old Holiram Miri of Rajabari village. But now, due to heavy siltation load, the river is changing its course frequently. Miri relocated nine times since 1977. As many as five villages in Bokakhat sub-division had to move away from the Dhanisiri and the Brahmaputra since 1999. “Most displaced people are living on the embankments. Here, we do not have enough space to dry the fish,” he adds. The 2015 report of the Centre for Natural Disaster Management, Assam Administrative Staff College, says a combination of factors, both natural and anthropogenic, contribute to flooding in the state.

The primary reason, however, remains that surplus water generated by Assam’s dynamic monsoon regime is no longer draining away through the earth’s natural channels or old river courses due to the altered physiographic setting of the Brahmaputra basin after 1950,” it states. Worse, the communities have already lost their traditional system of cooperation and resilience, called rikbo-ginam. Under the system, explains Miri, the entire community would come to the rescue of a family if it needs help for, say, sowing or harvesting paddy or ferrying stranded livestock from a flooded area. In return, the affected family contributes to the community food basket which is used in times of calamity. “Now we have no one to fall back on,” he says.

Assam: As home gets eroded

<https://www.thestatesman.com/supplements/north/home-gets-eroded-1502699364.html>

People living on the world’s largest river island are struggling to survive despite attempts to develop it as a tourist attraction. Majuli, in Assam, has lost around half of its area over the last century because of erosion due to heavy flooding of the Brahmaputra. While the shores are protected by an embankment of sandbags and concrete barriers, the island is swamped during the annual monsoon and some experts have estimated that it will be completely submerged by 2030. Meanwhile, the 160,000 inhabitants attempt to make a living by fishing, building boats and raising crops on the silty soil. They are reliant on using ferries to reach the nearest market for

their goods until new road bridges linking Majuli to Jorhat and Lakhimpur are finished. The construction project officially began with the laying of the foundation stone in February last year but has been beset by delays. Last December, media reported that one of the companies awarded the contract to carry out survey work had been accused of forgery.

However, the chief minister of Assam, Sarbananda Sonowal, has promised faster development of the island district. "There is tremendous curiosity of people around the world about Majuli and many want to visit the place," he said, "The state government is taking up lot of initiatives for developing the tourism potential of Majuli. All superstitious beliefs must be removed from society with scientific temperament and people of both Barak and Brahmaputra valleys must remain united in the spirit of harmonious coexistence for faster development of the state." Majuli is the largest river island in the world, covering around 880 sq km, according to Guinness World Records. Other reports suggest a smaller area of around 515 sq km. It has a long and rich history and is considered a centre of Vaishnavite Hindu culture, whose followers worship Vishnu.

The island is home to more than 30 Satras or monasteries, many of which contain irreplaceable collections of writings, antiques and masks. In 2008 the Government of India applied for Majuli to be listed as a World Heritage Site but no further action was taken after Unesco requested further evaluation of the area, including assessment of the impact of deforestation and the building of dams. The organisation said it wanted "to ascertain whether managed retreat is the only realistic approach to the flooding and erosion processes".

Arunachal and Assam: Rijiju assures help as flash floods loom large in Arunachal, Assam

<https://www.indiatoday.in/india/story/rijiju-assures-help-as-flash-floods-loom-large-in-arunachal-assam-1372299-2018-10-21>

Minister of State for Home Affairs Kiren Rijiju has assured people in districts bordering Arunachal Pradesh and Assam that all preparations were being done to avoid any calamity in the face of possible flash floods. China had informed India about a landslide blocking a river in Tibet, which led to the formation of an artificial lake. This now poses a danger to the Indian region downstream as the sudden release of water from this temporary lake might flood the catchment area of the Brahmaputra in India. "There are some disturbances in the normal flow of the Siang river. But all preparations are being done. The district administration is keeping everything on track. All precautionary measures have been taken," Rijiju said on Sunday (October 21). The Yarlung Tsangpo river is known as the Siang after it enters India at Arunachal Pradesh from the Tibetan region and is called the Brahmaputra once it reaches Assam.

Flagging off the gravity of the condition, Member of Parliament for Arunachal East Ninong Ering also wrote a letter to Union Minister of State for Water Resources Arun Ram Meghawal requesting an immediate intervention to protect the land, water and forest of Arunachal Pradesh. "I have a request for our respected prime minister and the external affairs minister should inform

the local people about the rivers, dams and the India China Treaty. We need to evacuate the people from the area. China has already removed 6,000 people, near the Tibet plateau. Because the plateau region is under an emergency condition. Anything can happen within seven to ten days," he wrote. Assam Chief Minister Sarbananda Sonowal also, earlier on Saturday (October 20), directed authorities in districts bordering Arunachal Pradesh to "remain alert" for the possible flash floods. Sonowal directed the authorities in Dhemaji, Dibrugarh, Lakhimpur and Tinsukia districts to remain alert and take all possible steps to prevent any major catastrophe, a spokesman of the Chief Minister's Office said here.

Given the situation, 32 well-prepared National Disaster Response Force (NDRF) teams have been deployed as a precautionary measure in districts of Assam and Arunachal Pradesh that are likely to be affected. Thirteen teams have been deployed in Arunachal, two in Upper Siang and 11 in East Siang district. Of the 12 teams deployed in Assam, seven are in Dhemaji and one each in Dibrugarh, Lakhimpur, Sivasagar, Tinsukiya and Jorhat. As part of the precautionary measure, six NDRF teams were airlifted from Kolkata and eight teams from Bhubaneswar last night. All NDRF teams are fully equipped with various flood rescue and life-saving equipment. Additional teams have been kept on standby at NDRF battalion locations. A 24/7 NDRF control room in Delhi is closely monitoring the situation round the clock and is in touch with the state administration. External Affairs Minister Sushma Swaraj spoke to the chief minister on Friday (October 19) night and urged him to take all possible measures in the wake of the situation.

Chinese Embassy spokesperson Counselor Ji Rong said that his country has activated the 'Emergency Information Sharing Mechanism' with India following the landslide on Wednesday near Jiala Village in Milin County in the lower ranges of Yaluzangbu river in Tibet. The reason cited behind the landslide was "natural causes". - The formation of an artificial lake poses a danger to the Indian region downstream as the sudden release of water from this temporary lake might flood the catchment area of the Brahmaputra in India. - Assam Chief Minister Sarbananda Sonowal also had directed authorities in districts bordering Arunachal Pradesh to "remain alert" for the possible flash floods. - 32 well prepared NDRF teams have been deployed as a precautionary measure in districts of Assam and Arunachal Pradesh that are likely to be affected.

Assam: Over 11,000 MT fish brought in Assam from outside in 2017-18

https://www.business-standard.com/article/pti-stories/over-11-000-mt-fish-brought-in-assam-from-outside-in-2017-18-118092701166_1.html

Assam brought nearly 11,450 MT of fish from Andhra Pradesh, Uttar Pradesh, West Bengal, Bihar and other states during 2017-18, while the state produced 3.27 lakh MT during the period, the assembly was informed on Thursday. Everyday Assam brings around 34.12 MT of fish from these states, Fisheries Department Minister Parimal Suklabaidhya said. Replying to questions of Aminul Islam (AIUDF), Ramendra Narayan Kalita and Pabindra Deka (both AGP), the minister

said the state imported 12,618 MT of fish during 2016-17 and 14,825 MT the year before. Regarding fish production in Assam since the formation of the government in the state, he said 3.07 lakh MT was produced during 2016-17 and 2.94 lakh MT the previous year.

To a query, he said allegations were received from the health department that chemicals such as formalin were used to delay rotting of the fish. On being questioned why the state government has not stopped the sale of such chemically treated fish, Suklabaidhya said it is not under the purview of his department. Asked what steps the fisheries department has taken to save people from the harmful effects of the chemical, he said the health department has been asked to recommend the safety measures to be undertaken, which will be implemented as soon as they are received. The Minister informed that according to the state Excise Department no GST has been charged for the sale of the imported fish in Assam.

Assam: Six electrocuted inside fishing pond

<https://timesofindia.indiatimes.com/city/guwahati/assam-six-electrocuted-inside-fishing-pond/articleshow/65904408.cms>

Six persons, including a 10-year-old boy, were electrocuted to death in Nagaon district on Friday morning when they were fishing in a pond unaware of an overhead 11000 volt feeder line that had snapped and fallen into the pond suddenly got charged. Eight people have been injured in the tragedy that struck Uttar Khatowal village, under Rupohi revenue circle, at around 7.50am. Villagers noticed the snapped high-voltage transmission line fallen into over the pond at around 5 am and informed the control room of Rupohi sub-station. “The villagers claim that the control room had told them that the wire was not a live and it needed to be put back again before charging it and so they went into the pond for fishing at around 7am,” police said. But, about 50 minutes later, when the villagers were still inside the pond, the snapped transmission line became charged, which instantly electrocuted all the people in contact with the pond water. Such was the power of the charge that there was smoke coming from the bodies.

A spokesman of the Assam Power Distribution Corporation Limited said that an ‘earth fault’ was reported at the 11kv Singimari feeder from Rupohi sub-station at 5am. “The line as not charged at that time but at around 7.50am, lineman Md Fakrul Ahmed gave the clearance for charging the line and accordingly the line was charged. Probably he did not notice the fallen line,” a spokesman of the state-owned power company said. The dead were identified as Rafiqul Islam, Jabar Ali, Habibur Rahman, Mainul Islam, Inamul Islam and Ashiful Islam (10). The injured were taken to Nagaon Civil Hospital and the condition of some are stated to be critical. Angry locals armed with sticks attacked the Ahmed’s house and damaged furniture and his vehicle. They asserted that negligence by APDCL had led to the mishap and demanded compensation of Rs 10 lakh to the next of kin of each of the dead and a government job to one of their family members. APDCL has so far announced an ex-gratia of Rs 2.5 lakh to each.

The government quickly shunted out managing director of APDCL Puru Gupta to industry and commerce department as commissioner and secretary and suspended Samaguri electricity sub-divisional officer Pallab Das and three other APDCL employees, including line man Ahmed. Former chief minister Prafulla Kumar Mahanta visited the bereaved families and demanded that they be given adequate compensation, besides an inquiry into the incident. Chief minister Sarbananda Sonowal has asked additional chief secretary and APDCL chairman Jishnu Barua to start an enquiry into the incident to find circumstances leading to the electrocution and submit the report to the government immediately.

Andhra Pradesh: Formalin-fish ban: Exports from Andhra Pradesh to Assam normalised

<http://www.newindianexpress.com/states/andhra-pradesh/2018/sep/03/formalin-fish-ban-exports-from-andhra-pradesh-to-assam-normalised-1866816.html>

Trade relations are on the verge of becoming normal with Assam with 260 consignments of fish being sent to the State, after the formalin-fish ban controversy, since July 7. As TNIE reported, from 92 consignments sent till August 10, the number has increased to 260 till date, auguring well for Andhra Pradesh's fish trade with Assam. However, trade relations with Nagaland, Meghalaya, and Tripura are still frosty with the number of consignments remaining below 20, and showing no sign of increasing. After negotiations through a number of communiqués since July, there has been a positive response from Assam and the demand for consignments has increased. But Nagaland, Tripura, and Meghalaya have asked for a meagre supply with the caveat that the fish be examined by quality assurance teams. The teams would comprise officials of Food Safety and Standards Authority of India, Animal Husbandry department, and the Fisheries Department. K Seetha Ramaraju, Additional Director, Fisheries department, said, "We have constituted one team each in Narayanapuram and Unguturu of West Godavari and one in Kaikaluru of Krishna district." "Chief Minister Chandrababu Naidu and several government officials have written letters to the north eastern states. Though Assam has warmed up to our overtures, the other states have not."

"However, they have told us to send quality assurance teams to their states and we have complied." They said that they might gradually lift the ban if they are satisfied with the quality, he said. When asked if aqua farmers were affected due to the ban, he said that fish was stocked up and it will not be spoilt for a long time. He added that most of the supply has been directed to other states by negotiating bigger deals and that was the reason why there had been 'no uproar in the aqua farming community.' Regarding the media reports on the introduction of a new preservative using unrefined sugar and jaggery, Sitarama Raju said there was no movement on the proposal yet, and The Central Institute of Fisheries Education was working to bring about introduction of the new preservative.

Assam: Fresh wave of floods hits Assam; Brahmaputra and tributaries flow above danger mark; four districts affected

<https://www.firstpost.com/india/fresh-wave-of-floods-hits-assam-brahmaputra-and-tributaries-flow-above-danger-mark-four-districts-affected-5100311.html>

Another wave of floods has hit Assam, inundating four districts and affecting over 12,000 people. The Brahmaputra and its tributaries are flowing above the danger level, an official report said in Guwahati on Sunday. A total of 676 hectares of farmland in the districts of Dhemaji, Biswanath, Golaghat and Sivasagar has also been submerged in the third wave of flood this season, the Assam State Disaster Management Authority (ASDMA) report said. No death was reported in the fresh wave of floods, though the previous two waves together had claimed 50 lives, the ASDMA said.

The deluge affected 12,428 people in 48 villages in these four districts. In the worst-affected Dhemaji district, 11,355 are reeling under the impact of the floods, followed by 390 in Biswanath, 350 in Sivasagar and 333 in Golaghat, the report said. Two relief camps have been set up in Biswanath and Golaghat, it said, adding that at least 525 big, 753 small and 977 poultry were affected by the floods. According to a Central Water Commission report released on Sunday, the Brahmaputra was flowing above the danger level in Nimatighat in Jorhat, Dhansiri in Numaligarh Golaghat and Jia Bharali at the NT Road Crossing in Sonitpur district.

Assam: APART comes to Assam

<https://www.telegraphindia.com/states/north-east/apart-comes-to-assam-255569>

The Assam fisheries department will implement the fishery sub-component of the World Bank financed Assam Agriculture and Rural Transformation Project (APART) in the next five years in support of WorldFish. WorldFish, also known as the International Center for Living Aquatic Resources Management, is an international, non-profit research organisation with headquarters in Penang, Malaysia. Its mission is to harness the potential of fisheries and aquaculture to reduce poverty and hunger in developing countries. Team leader of WorldFish, C.V. Mohan, visited Assam during a two-day workshop organised by the directorate of fisheries on Monday and Tuesday and explained the participants the technicality of the project objectives of APART. He stressed on increasing availability, access and consumption of nutrient-rich safe fish.

Assam: Sonowal reviews fishery sector

<https://www.telegraphindia.com/states/north-east/sonowal-reviews-fishery-sector-252079>

Assam chief minister Sarbananda Sonowal on Monday directed the fisheries department to prepare an assessment report of the quantity of fish required in the state to gain a clear picture about the potential of the market. Sonowal said the Act East policy of Prime Minister Narendra Modi has opened a window of opportunity for the state's fish producers to gain access to the South-East Asian market and they must be prepared to compete with the best in the world. The chief minister distributed appointment letters to 32 junior engineers of fisheries department here. Sonowal asked the new appointees to spend a night with the fishermen and the fish producers to understand their difficulties and challenges. "The fishery sector has immense potential and we must vigorously engage in it for deriving maximum benefits.

Assam is blessed with abundant water resources and we have the capacity to become biggest producer and exporter of fish in the country. But for that, we must adopt latest scientific technologies for augmenting our production," Sonowal said. Appreciating the fisheries department for being able to increase the state's fish production by 20,000MT in 2017-18 over the previous year, Sonowal said the Chief Minister's Samagra Grammya Unnayan Yojna, a scheme to transform the rural economy with a budget outlay of Rs 33,000 crore, has also kept fishery as a priority area. "The infinite potential of the Brahmaputra and the Barak must be harnessed to achieve fast-paced development and vast presence of natural waterbodies must be properly utilised to grow the fishery sector," he said.

Saying that commercial fishermen go through a lot of hardships to catch fish, which one cannot realise without witnessing their painstaking processes, Sonowal announced that best fishermen and fish producers would be felicitated at a state-level programme to acknowledge their contribution to the state. Highlighting the programme of distributing soil health cards to farmers as an important step by the Centre to give the farmers knowledge of the quality of their farming lands, Sonowal said the cards have been distributed to 11 lakh farmers of the state. The distribution of water health cards is also being planned, he added. Fisheries minister Parimal Suklabaidya said Nabard has approved a package of Rs 100 crore for 1,000 hectares of fisheries of individual owners. He said efforts of the department's officials had resulted in the 3.27 lakh MT production of fish in the state in 2017-18, an increase of 20,000MT over the previous year.

Assam: Flood toll reaches 46

<https://timesofindia.indiatimes.com/city/guwahati/assam-flood-toll-reaches-46/articleshow/65319319.cms>

A person died in flash floods in Assam's Hojai district taking the number of flood related deaths in the state to 46, the Assam State Disaster Management Authority (ASDMA) said today. According to ASDMA the latest casualty was reported from Lanka revenue circle. In one of the worst affected districts of Golaghat, more than 81,000 people have been displaced by the devastating floods, the ASDMA said, adding that till yesterday, over 87,000 people remain

affected across the state. Currently, 110 villages are under water and 6,855 hectares of crop areas have been damaged, it said.

Assam: Govt to adopt fisheries co-op (Fishfed)

<http://www.indiancooperative.com/co-op-news-snippets/assam-govt-to-adopt-fisheries-co-op-fishfed/>

With a view to controlling the fish market, the Assam govt will soon merge the Assam Apex Cooperative Fish Marketing and Processing Federation Ltd (Fishfed) with the state fisheries department. Fishfed is currently being run by the cooperative department, reports Telegraph. The move to merge Fishfed with the fisheries department had been taken in June this year. The move is also prompted by the aim of eliminating middlemen, assuring better price for fishermen and an assured market for consumers. Fishfed is the apex cooperative federation to help the state's fishermen for their socio-economic development through primary fisheries cooperative societies by increasing production of fish through member societies and through its own project. A source close to fishfed says fishfed had 516 cooperative societies under its control worked for fish production, but because of various reasons, most of them are inactive.

Assam: Push to control fish market

<https://www.telegraphindia.com/states/north-east/push-to-control-fish-market-246923>

In an attempt to control the fish market in Assam, Dispur has planned to merge the Assam Apex Cooperative Fish Marketing and Processing Federation Ltd (Fishfed) with the state fisheries department soon. At present, Fishfed is run under the cooperative department. The decision to merge Fishfed with the fisheries department was taken in a cabinet meeting in October 2017 and the final notification to implement the decision was issued by Dispur in June 2018. Fishfed is the apex cooperative federation to help the state's fishermen for their socio-economic development through primary fisheries cooperative societies by increasing production of fish through member societies and through its own project. Its another aim is marketing the produce through various markets and sales booths of Fishfed by eliminating middlemen, assuring better price for fishermen and an assured market for consumers.

"It will help mainly in marketing management and to implement any project as both Fishfed and the fisheries department deal with the same matter. So, in most of the cases we need help of the department and the process becomes lengthy. Now, it will be short and easier," an official of Fishfed said. Reacting to uncontrolled price at local fish markets, an official said: "Fish is a perishable product; so it is impossible to control the market. Moreover, in Assam, there is lack of proper storage facilities for local fish. So, despite lots of resources in Assam, market of imported fish is running so well." The notification issued by the administrative reforms and training

department of Assam said: "With merging Fishfed with the fisheries department, the name Fishfed will remain unchanged.

The fisheries department and Fishfed shall endeavour to strengthen and develop fish production, processing and marketing in Assam. "Moreover, the employees and all assets and liabilities of Fishfed shall remain with Fishfed at the time of this transfer and there will be no additional financial implication on the state exchequer. Fishfed, being a registered cooperative society, will be regulated and managed as per the Assam Cooperative Societies Act, 2007. The appointment of managing director and matters relating to appointments of board of directors will be done by the fisheries department." In Assam, according to information revealed by officials of the fisheries department, annual production of fish is around 3.07 lakh tonnes against the annual market demand of around 3.43 lakh tonnes. "Under Fishfed, altogether 516 cooperative societies were working for fish production, but because of various reasons, most of them have now become inactive. Moreover, Assam lacks proper market-oriented production," a Fishfed official said.

Assam: Promotes fish seed village

<https://www.telegraphindia.com/states/north-east/assam-promotes-fish-seed-village-245397>

The Assam fisheries department is working to expand the concept of fish-seed village among pisciculturists for production of quality fish and proper size of fingerlings available to them. An important feature of fish-seed village, which the department has adopted in recent years, is that it will unite the farmers of the village for a common cause and enhance the farmers' confidence in marketing and understanding the concept of quality fish seed according to norms laid down under Assam Fish Seed Rule, 2010, which is the first of its kind in the country. Dhruva Jyoti Sharma of the directorate of fisheries said, "A group of trained fish farmers are involved in production of fish seeds of various cultivable species and cater to their own needs, fellow farmers of the village and farmers of neighbouring villages at an affordable costs.

This is like developing a single market, comprising a cluster of quality fish-seed shops at one location in each village, for easy access to quality fish seeds. The technical support for the implementation of this fish-seed village concept is being provided district wise." Illius Ahmed, a fish farmer from Hojai, said, "The production of quality fish seed is very difficult as it depends upon the condition of nature. Sometimes, the temperature of water in which the fish seeds are kept exceeds the required level and the seeds hatch prematurely. Moreover, as we depend upon canal water, shortage of rainfall makes the pond go dry and there is a crisis of water which destroys the seeds. Poor facilities affect the production of quality fish seeds." Ahmed, who wants the concept of fish-seed village to be extended to his locality, said, "The concept is excellent. Its expansion will definitely benefit us."

Sources from the National Fisheries Development Board of the Northeast said poor fish seed rearing infrastructure, lack of awareness towards scientific and professional management of rearing ponds and poor fish seed transportation and marketing facilities that lead to high mortality rate are some additional problems of fish seed production. Earlier this week, the state government had banned import and sale of fish from other states for a period of 10 days following tests that showed the presence of chemical formalin. Aizawl formalin test Samples of fishes collected from market in Aizawl will be tested at the laboratory of the Regional Institute of Para-Medical and Nursing Sciences (RIPANS) to ascertain whether cancer-inducing formalin is present or not, a senior Mizoram health department official said on Monday. Joint director of Food and Drugs Administration (FDA) Lalsawma said 1.5kg of fish samples collected from Bawngkawn market from where fish sellers purchase the fishes imported from different states was tested at the Food Testing Laboratory at Zemabawk last week, adds PTI.

Assam: Urea found in local fish, says Fishfed

<https://www.telegraphindia.com/states/north-east/urea-found-in-local-fish-says-fishfed-244944>

The Assam's fishery industry is under threat because of excessive use of urea. This was revealed by the Assam Apex Cooperative Fish Marketing and Processing Federation Limited (Fishfed) here recently after the state government imposed restrictions on imported fish. "A field survey revealed that many pisciculturists of the state use urea in an unscientific way. It is a challenge for the industry, which has bright prospects. In general, 3kg of urea should be used for pisciculture on one bigha of land. This is the norm in lower Assam but it is not followed by the farmers," an extension officer of Fishfed said. Dipesh Debnath, a scientist with Central Inland Fisheries Research Institute, said, "Urea does not have any direct impact on fish. It is a fertiliser and a source of nitrogen. Therefore, in some aspects it is necessary for fish farming. But if it is used in excess, algae growth in a fishery will be higher, water quality will deteriorate and fish will die."

The Fishfed officer, who is mainly responsible for the development of local fish market in the state, said, "In Assam, fish farming is not organised. In the market, the size of fish is a big factor. However, most local farmers sell fish at advance fingerling stage. So the large fish market is dominated by imported fish." Nitul Das, a fish farmer at Hajo, said, "In Assam, most pisciculturists lack awareness. It is one of the most profitable businesses and we have the resources but are not able to utilise it properly. The preservation of fish for a long time is also a challenge." On Saturday, a group of officials from Andhra Pradesh collected samples of imported fish in Rangiya to verify the allegation of use of formalin. "The team collected nine samples and they will submit a report within Monday," a source in the Assam fisheries department said. The team came after an investigation by Assam government detected formalin in imported fish. The Assam government on Tuesday banned the import of fish for 10 days.

Assam: Formalin found in Fish in Assam's Guwahati markets

<https://www.ndtv.com/guwahati-news/formalin-found-in-fish-in-assams-guwahati-market-1882138>

The Assam government has banned import and sale of fish from Andhra Pradesh and other states for a period of 10 days after cancer-causing chemical formalin content was found in the imported fish. The decision was taken after formalin, a cancer-inducing chemical which is used to keep dead fish fresh, was detected in fish being sold in markets areas of Guwahati. Minister of state for health and family welfare Pijush Hazarika said, "The government has taken a decision to ban fishes brought from outside after analysis of growing health issues due to the consumption of fish containing formalin (Formaldehyde)." "We had collected samples from the fish market, results show presence of formalin.

We have imposed a 10-day ban on import of fish from outside Assam," he added. The presence of formalin content in the fish came to notice after the state health department carried out a laboratory test. Mr Hazarika further announced that from there will be a statewide blanket ban on the sale of all the fishes brought from outside in all over the state for 10 days. He added that once the ban is imposed, anyone found violating order will be penalized. Also people who violate the rule will have to pay a fine up to Rs. 10 lakh with seven years of imprisonment. Mr Hazarika further appealed to the people engaged with fish trade not to take advantage of the current situation by increasing the price of the local fish in the market.

Assam: To procure Rapid Detection Kit to check fish quality

<http://www.guwahatiplus.com/daily-news/assam-to-procure-rapid-detection-kit-to-check-fish-quality>

In a bid to determine the quality of the fish on the spot, the Assam food safety department has placed an order for the supply of two variants of rapid detection kits. A source in the department said that the machines ordered are manufactured by a German multinational pharmaceutical company. "The kits will help assess and ascertain if the fish sold in the markets are contaminated with chemicals such as ammonia and formalin. The two variants of the kits will exactly ascertain the contamination of fish and its extent can be ascertained on the spot. Generally, the test conducted on samples in a laboratory is elaborate and time consuming," a senior official of the Assam food safety department said. While formalin-laced fish comes from outside, unscrupulous traders apply ammonia on their stock to slow down the melting of ice used to preserve the fish which take time to reach the markets from the sources. "The rapid detection kits will come in two variants. One of them will be capable of ascertaining the presence of higher doses of chemicals. The kits will take about 15 days to arrive here, we have been told telephonically," the official said.

While Nagaland had already been using the kits, along with Assam, the food safety departments in Meghalaya and Arunachal Pradesh have also placed orders for such kits. This becomes

necessary as not only fish, but chemical-laced food items have made foray into the city in different other items. Huge quantities of chemical-laced mangoes and bananas have been seized from different parts of the city over the past few weeks while milk and edible oil samples are undergoing tests in the laboratory. However, it is learnt that the detection kits, though fast in operation, are not a foolproof solution to the problem. The laboratory test results take at least 3-4 days to come, but are foolproof.

Assam, Jharkhand and Odisha: FISHCOPFED to set up Aqua Centres in states

<http://www.indiancooperative.com/fishcofed/fishcopfed-to-set-up-aqua-centres-in-states/>

FISHCOPFED has signed an MOU with the National Fisheries Development Board (NFDB), Hyderabad to set up initially 16 Aqua One Centers in the state of Assam, Jharkhand and Odisha. On success it shall be replicated in other states of the country. In all six firms have been shortlisted in the country including FISHCOPFED from the cooperative sector whereas the others are from the private sector. Each AOC shall provide ICT enabled aquaculture support services besides all other related services under one roof to the registered fish farmers with an aim to transfer latest technology to enhance fish production and focus on e-traceability. It is an improved modified concept to empower potential fish farmers. Funding support to the extent of 80% shall be provided for NE states and 50% for other states shall be applicable to FISHCOPFED.

The federation which has already opened up eight offices in the country shall coordinate with its member institutions and the concerned state Fisheries Dept to make it a success, said Fishcopfed MD B K Mishra. Earlier, Fishcopfed got into the spotlight with convergence of Group Accident Insurance Scheme with Pradhan Mantri Suraksha Bima Yozana (PMSBY) to be implemented through the cooperative for the fishery sector. The FISHCOPFED has been identified as the nodal agency by the Govt. of India to implement the Scheme for the fisheries sector.

Assam: Skill development programme organized for hill fish farmers

<https://www.sentinelassam.com/2018/05/27/skill-development-programme-organized-for-hill-farmers/>

A skill development programme on ‘Start-up fish farming, fish seed production and hatchery management for hill farmers of Ziro valley, Arunachal Pradesh’ was organized during recently at Pabhoi Fish Farm, Pabhoi, Biswanath district. The programme was organized under the aegis of ICAR-Directorate of Coldwater Fisheries Research, Bhimtal, Nainital district, Uttarakhand with an objective to train fish farmers of Ziro valley and to develop hands-on skills on scientific aspects for better fish farming practices, fish hatchery operation and management and fish seed production by artificial breeding techniques through hormone administration. The output of this hands-on skill development programme among the hill farmers of Ziro valley, Arunachal

Pradesh is expected to make the region and its adjoining areas self-sufficient in quality fish seed production for stocking and enhancing fish productivity.

Effort has been made in an earlier phase by ICAR-DCFR, Bhimtal in establishing a fish hatchery at Hari village of Ziro valley, Lower Subansiri district of Arunachal Pradesh, in association with the State Fisheries Department of Arunachal Pradesh and Gaumco Multipurpose Cooperative Society Pvt. Ltd. to augment the fish seed production scenario. In the second phase, the farmers of the valley are trained to develop skills from a reputed and recognized fish farm and seed production centre in Assam for which the Pabhoi Fish Farm was approached by ICAR-DCFR. During the five-day programme, the farmers learned the broodstock selection criteria, brooder size, their feeding techniques, handling during harvest, prophylactic measures and better management practices. Skill development was emphasized on detection of spawning status of brooders, segregation of male and female brooders, hormone administration in brood fishes, water circulation regulations, estimation of egg count and fertilization percentage, egg collection techniques, hatching and incubation.

The hatchery operation techniques were followed by nursery management practices which include transfer of spawns from hatchery unit to nurseries, nursery preparation, insect control measures and feeding management. In addition, skills to identify fish seeds at fry stage, weighing methods for transport and marketing, oxygen packaging was learned. The farmers of Ziro valley expressed satisfaction on completion of the programme. The queries raised by the farmers in the interactive sessions, both in the classroom and field, were solved and answered by the proprietors of Pabhoi Fish Farm, Biren Bhagawati and Bhargav Bhagawati. The programme was coordinated by Deepjyoti Baruah, Senior Scientist from ICAR-DCFR, Bhimtal.

Assam: The river people under threat

<http://www.bbc.com/future/story/20180516-the-sapori-people-living-on-indias-brahmaputra-islands>

Monai Doley is telling me how he cures snake bites. We are standing in a paddy field: scorching sun, cloudless sky. This is the island of Bhekeli 1 in Assam, north-eastern India. Doley, tall and broad-shouldered, head shaved, tells me the Cal Bikal snake is particularly dangerous. To cure its bite, Doley rinses his mouth with local rice beer (an antiseptic of sorts), ties a tourniquet above the wound, and then puts his mouth to it. "I suck the poison away, spit it out," he says. Next, he applies a herb paste. The tourniquet stays on for six hours. Afterwards, healthy blood will re-circulate, he says. Doley learned these skills (not to be attempted at home) as a youngster from visiting fishermen. But snakes were not the only risk he faced. "The Brahmaputra River was far away at first. But in 1987, the floods arrived from the hills," he says. He and the family were forced to flee to the other side of the island. But the danger is not over. "We are ready to escape at every moment."

I'm visiting Bhekeli 1 with the Brahmaputra Boat Clinic, a team delivering healthcare along these riverine islands (known as 'saporis' or 'chars'). Often little more than sandbars, the saporis form through deposition of huge volumes of silt carried by the river from the Himalayas. About 2.5 million people – some 8% of Assam's population – call these islands home. The Brahmaputra lives in their rituals and religions, nourishes the soil and sustains them far away from the ever-developing Assamese mainland. But it also has the power to destroy and to displace. Thanks to climate change, the threat of floods, erosions, and even earthquakes still looms – and is getting more acute. That makes the saporis people, who have dwelled here for hundreds of years, at risk of losing their homes, livelihoods and their lives. I'm here to understand what lies ahead for the saporis people.

To do that, I need to begin with the river. Dense fog delayed our departure from Nimati Ghat riverbank that morning, but as the view cleared, the Brahmaputra seemed impossibly calm. Tall, feathery-white reeds of wild sugarcane – kohua bon – swayed gently on the riverbanks. We are hundreds of kilometres from the river's source, Tibet's Angsi Glacier. Beginning as the Yarlung Tsangpo, the river winds through the Himalayas, Arunachal Pradesh, and next Assam. Then it gathers force and depth. At times its banks are 10km apart. It charges through Bangladesh to unite with the Ganges and Meghna, ending its 2,880km course at the Bay of Bengal. There have been 25 major floods since 1950; more than 11,000 people died in 1977 alone. Today's tranquillity is deceptive.

The Brahmaputra's volume is outdone only by the Amazon and Congo. Add to this heavy rainfall (its valley receives over 100 inches annually) and inevitable monsoon floods and landslides, and it brings families perched precariously on roofs, livestock and crops destroyed, relief camps crowded. There have been 25 major floods since 1950; more than 11,000 people died in 1977 alone. In July 2012, two million were left homeless, only for more floods to follow that September, when another 1.5 million lost their homes. The saporis people suffer most, as vulnerable as the islands themselves. One innovation to help them is the boat clinic, which I am travelling with for the week. After one of these floods, journalist Sanjoy Hazarika heard the story of a pregnant young saporis woman who died before reaching a mainland hospital. And so began his idea for the Brahmaputra Boat Clinic: a mobile medical unit that can reach the islanders not only in emergencies, but to provide the kind of basic, routine care like immunisations that the saporis people, disconnected from the mainland's infrastructure, usually have lacked.

Hazarika, who is also a researcher, policy analyst, and film-maker, began in 2005 with one boat and a World Bank award of \$20,000. Today 15 boats operate in 13 districts of Assam with 250 staff. Now operating with a public-private partnership model (the principal stakeholder is the National Health Mission of the Government of Assam), the Boat Clinic's teams reach 350,000 people every year. Back on Bhekeli 1, we walk towards the village. The islanders here are from the Mishing tribal group. Their homes, called 'chang gars', stand on stilts at least five feet from the ground with an adjustable bamboo platform to defend against flooding. Underneath, black

pigs doze peacefully. A rusted water pump stands by pails of stagnant water. Blue fishing nets hang from each doorway next to barrels of dried fish, namshing. “Oh baido, doctor ahila,” shouts community worker Jitu Dutta, announcing the clinic’s arrival. Families slowly emerge, the children caked in dust and barefoot. Kajal, four months old, is snugly fastened to her mother Somti in a sling. Dutta notices an oozing sore on her elbow and encourages Somti towards the medical tent.

Another patient, Tikshri Pegu, is 70 years old, she thinks. Her spine impossibly bent, she had a stroke in her 20s. “I was like a dead person: my right arm died too.” She sought black magic – ‘Tantra Mantra’, the islanders call it. Treatments called for massages with red chilli and mustard oil, chants and prayers. Tikshri’s right hand remains lifeless but she works in the fields even now. Tantra Mantra has been outlawed since then, but indigenous remedies remain, often administered by a traditional healer or bej: the green stem of bamboo is rubbed over cuts, the fruit of the sǐnggung (a red silk-cotton tree) is chewed for dysentery. So too are the leaves of boga bahak (a nut shrub) for whooping cough. Roots of the durun bon herb are administered to snake bites. For presumed tuberculosis, the seeds of the joni shrub are ground with pestle and mortar – two teaspoons twice a day. Back at the water’s edge, a small crowd has gathered at the medical tent. Medications for scabies, malaria, dysentery, high blood pressure and diabetes are available.

Those dozing pigs have a lot to answer for – tapeworms from undercooked smoked pork are common among the islanders – and so tablets against ‘pellu’ are popular. Some patients seek immunisations and family planning advice. A midwife provides antenatal and prenatal care. There are lab tests for anaemia, malaria, and syphilis. Dr Saika presses his stethoscope to a child’s wheezing chest and prescribes an inhaler. Sometimes, patients are referred to the mainland, but there is no need today. The sun sets: time to head back to the boat where daal and chicken curry await the crew. After eating, we crawl under mosquito nets, falling asleep as the Brahmaputra softly laps the sides of the boat. Boatmaster Bipul Payeng, 34 years old, has sailed the Brahmaputra for two decades. GPS is useless here, he says. “We simply sense the river.” He shows me a laminated map printed last year.

Three islands are marked in yellow – Bhekeli 1, 2, and 3. The people of Bhekeli 3 fled months ago, their island eroded. The map is already out of date. The 1950 Independence Day earthquake (8.6 on the Richter scale) killed around 1,000 people and changed the Brahmaputra’s course forever. Some 45 billion tonnes of silt were carried downstream, populating the riverbed and emptying onto banks. Even now, the river carries one of the world’s highest sediment yields, higher still during floods. Since the earthquake, the river bed has risen by up to 10 metres and continues to widen. Silt leaves the land fertile, but now the river has become braided – one channel turns into many, the water eroding the river banks as it goes. Between 1954 and 2008, the total area of erosion in this region was 427,000 hectares, 4% of the plains of Assam. Since the earthquake, erosion has decimated more than 2,500 villages, 18 towns, countless cultural

heritage sites and entire tea gardens. Nearly half a million people have been affected. Between 2005 and 2010 alone, 880 villages and almost 37,000 houses were completely eroded. Even the school on Doley's island tumbled into the water earlier this year. Other dangers loom, including plans for dams that potentially could divert the Brahmaputra's course.

Rising temperatures are shrinking the glaciers of the Himalayas and the Tibetan plateau, accelerated by air pollution, which could cause more flooding. In some places, the state government's plan on climate change predicts a 25% increase in flooding and 75% in droughts, along with additional erosion, mudflows and avalanches predicted. Also at stake is the region's delicate ecosystem. Its wetlands, tropical rainforests, grasslands, bamboo orchards and tea gardens thrive on the river's fertile basin. Assam's two World Heritage Sites, Kaziranga and Manas, are famously home to the one-horned rhino as well as tigers, elephants, leopards, water buffalo, swamp deer and golden langurs. At least 346 animals at Kaziranga died in the 2017 floods including 15 rhinos, one Royal Bengal tiger and four elephants. Suddenly, there is a cry from Payeng: "Xihu, xihu!" (Dolphin, dolphin!). A Ganges River dolphin leaps through the air. We are fortunate to catch this glimpse.

The dolphin is officially endangered, facing threats across the Ganges and Brahmaputra: pollution, entanglement in fishing nets, dams that split up populations and reduce prey, and harvesting for dolphin oil. Conservation projects are encouraging fishermen to use alternative baits, but only 1,200 of these river dolphins remain throughout India, less than 300 in the Brahmaputra. Our sighting gives some hope, though. The dolphin sits at the apex of the aquatic food chain and so its very presence signals a healthy ecosystem and biodiversity. But there is little room for complacency. The Yangtze river dolphin was declared functionally extinct in 2006 solely due to the actions of humans, including overfishing, dam-building and ship collisions. The Ganges River dolphin also remains vulnerable. There are more than 220 ethnic groups in the Brahmaputra Valley with at least 45 languages. Over the following few days we travel to more sandbanks, clambering over rotting logs and parched earth. Dust swirls.

We visit other Mishing tribes and sometimes other groups, too: Deoris, Boros, Rabhas, Lalung – there are more than 220 ethnic groups in the Brahmaputra Valley with at least 45 languages and many more religions, laws and customs. The younger generation occasionally seek work on the mainland, usually in the service industry, but the agricultural sector remains the mainstay of employment. And so, as long as the land is endangered, its people are, too, their fates entwined. They speak of erosion time and time again. "We must fight it," says Payeng. Otherwise, the saporis will wash away. "This is a land war." Built against erosion, structures on the Brahmaputra River could make matters worse. That war is complex. Embankments, constructed against floods, actually could worsen erosion – whether by confining the river's course, increasing the water's velocity or simply shifting problems from one area to another.

Dredging is another proposal: the latter is claimed to battle erosion through increasing the river's water-carrying capacity but could equally change the river's course and faces enormous technical challenges. Costly geo-textile tubes used to stabilise a river bank at Majuli were washed away within a year. Stone spurs divert strong currents, thus protecting one location but potentially triggering erosion downstream. Boulders and sand bags protect receding river banks but are hardly infallible. Anti-erosion efforts need to address other factors, too – especially deforestation, dams, and climate change. We are only one of the many species living in these ecosystems, privileged to share space with them – Sanjoy Hazarika Hazarika is struck that those championing various anti-erosion strategies rarely ask the people living on the islands and river banks for their opinions.

It's not just about people of course, he says. "We must be mindful of one simple issue: we are only one of the many species living in these ecosystems, privileged to share space with them." Payeng later tells me of a Mishing folk story, Patukari Tuyub, the Dolphin Maiden. One version has a young girl, Yakasi, being drowned by her neighbours: dressed in black, a wooden pestle attached to her back, two brooms tied to her hands, she is pushed into the river. She returns as a dolphin, the story goes, those brooms became her fins. And so the Mishing see the river dolphin as their long-lost daughter, to be revered and protected at all costs. As we watch another dolphin somersault alongside the boat, Yakasi is still with us. But her future and the future of her people depends on decisions made on the mainland. Onto to the next savori we go. We have no map to guide us, but Payeng will surely get us there. Today, there is safety in the river's serenity, and security in this knowledge of his. And despite our fears for the future of the Brahmaputra and its people, that will have to do for now.

Assam: France loan to up fish yield

<https://www.telegraphindia.com/states/north-east/france-loan-to-up-fish-yield-226916>

The Assam fishery department has approached Agence Française de Développement (AFD), a public development bank of France, for Rs 1,767-crore loan to develop indigenous breeds of fish in 700 beels (wetlands) across the state. Sources in the fishery department said the bank has, in principle, approved the fishery department's Wetland Conservation and Protection Project and a team will visit the state in July for "identification-cum-appraisal". The source said the bank will give Rs 500 crore as the first instalment to rejuvenate 500 derelict wetlands with potential of fish farming. Another 200 wetlands in forest land will be covered under the project. Along with giving employment avenues to local residents, the scheme will go a long way in preserving the flora and fauna of these wetlands, he added. "The project lays emphasis on production of indigenous varieties of fish," the source said. Senior officials of the state fishery department had recently given a presentation to the bank officials on the status of Assam's fishery sector along with the possibilities of developing it.

"Self-help groups will be engaged in fish farming. In case of the forest wetlands, the communities living around them on the forest land will be engaged," the source added. The average fish production in Assam is 300kg per hectare per annum. The fishery department, through various pilot projects done under the financial assistance of the World Bank, has found that the production could be enhanced to 1,500kg per hectare per annum. The AFD has told the department that it has come to know about the proposed plan of dredging the Brahmaputra and constructing an expressway along it. "It is understood that the proposed wetlands/fisheries are located in the floodplains of the river. What will be the impact of these activities on the wetlands and fisheries?" it asked. The state fishery department has been working to increase contribution of the fishery sector towards the state gross domestic product by 0.50 per cent and reduce the fish demand-supply gap by 39 per cent. Fish production during 2015-16 was 2.94 lakh metric tonnes against the requirement of 3.36 lakh metric tonnes.

Assam: Fishing nets banned across Hailakandi district from April

<http://www.northeastindia24.com/assam-fishing-nets-banned-across-hailakandi-district-from-april/>

In a bid to safeguard fingerlings, fish species and increase their population, fishing nets, including mosarijal have been banned across Hailakandi district of Assam with immediate effect until July 15. Fishing nets with less than one cm bar or two cm meshes in size are banned for use during the breeding season, said the order issued by Deputy Commissioner, Hailakandi, Adil Khan yesterday. The nets have mesh spanning from one to two cm that blocks small fish, fishlings and fish eggs from falling back into the waters, thereby stopping them from multiplying. "The move is aimed at curbing the exploitation of fish by safeguarding the fingerlings and eggs. It will ensure natural breeding, conservation and growth of fish in fisheries and natural water bodies," said the order. Moreover, the order prohibits the catching of brood fish of certain species in proclaimed fishery from May 1 to July 31 and catching and killing including consumption and selling of undersized fish from August 1 to October 31.

"Any person who violates the order shall be liable to a fine which may extend to Rs.5,000. A further penalty of Rs.100 per day will be levied on those who continue to commit the offence repeatedly," the order stated. The order stated that fishing nets and other equipment used in the commission of the offence would be confiscated. If any lessee commits offence twice, his lease will be terminated besides imposition of other penalties such as forfeiture of security deposit. Deputy Commissioner, Khan directed the Chief Executive Officer, Zilla Parishad, Hailakandi, Executive Officer, Hailakandi Municipal Board and the Executive Officer, Lala Town Committee to ensure strict enforcement of the order by stopping sale of prohibited sized fish in the markets under their respective jurisdictions. Khan asked the OCs of police stations and officials of Fisheries Department to execute the prohibitory order and to submit compliance report.

Assam: Fish project a success in Assam

<https://www.telegraphindia.com/states/north-east/fish-project-a-success-in-assam-201607>

The galvanised iron cage culture project experimentally initiated by the Central Inland Fisheries Research Institute (CIFRI) in Assam has been a success. The project was carried out on the Labeo bata fish species, showing a low mortality rate despite a higher rate of weight increase of the fish. The project has been set up in Samaguri Beel (floodplains wetland) in Nagaon district from September last year. Galvanized cage culture or aqua culture is an artificial system of fish harvesting. A cage made of galvanized iron with a protective zinc coating to prevent rust is used to confine the fish in an enclosure. Earlier, farmers and entrepreneurs of the state used bamboo cages. However, their use is diminishing because of a lesser life span of two years. The galvanised iron cages have a life span of around 10 years and are more viable for the fish industry, an institute official said. "After four months of harvesting, we detected less than five per cent mortality rate of fish, despite a 100 per cent weight increase of fingerlings. It is a huge success," institute scientist Simankshu Bora said.

Samaguri Beel occupies an area of approximate 1 lakh hectares with immense potential for sustainable increase of fish production. The institute has set up 16 cages at a cost of around Rs 11.7 lakh, an official said. Principal scientist and acting head of the institute's Northeast regional centre, B.K. Bhattacharjya, said, "The galvanised iron cage is expensive but more durable. It is economically more viable. If the government encourages local farmers by providing financial assistance, Assam could produce huge numbers of fish in a year." The official said for the cage culture to be successful, there should be open waterbodies with a depth of more than two metres. The institute carried out the project in collaboration with the Assam Fishery Development Corporation. Bhattacharjya said after the success of the project in Samaguri Beel, they were planning to set up such cages in various other beels of the state.

Assam: A river that needs special attention

<https://arunachaltimes.in/index.php/2018/01/01/a-river-that-needs-special-attention/>

Government agencies took almost two months to reveal the probable cause of the Siang river turning muddy – that too after a biological scientist and an environmentalist had uncovered it all. However, the exact reason for the river's turbidity is not known yet. It is believed that massive landslides at the confluence of the Yarlung Tsangpo in Tibet, caused by an earthquake during the third week of November this year, resulted in a deposit of a huge quantity of limestone and other particles and contamination of the Siang river, which is known as the Brahmaputra in Assam. What is most surprising is that, initially the Chinese authority never considered the matter seriously, nor felt it necessary to find out the actual cause of the turbidity and contamination of the Siang river, which originates in Tibet.

It rather asked India not to point its finger at China on hydrological issues in Tibet and ‘look for problems on their own side.’ While China was not saying anything about the muddy Siang river, on the other hand, it seemed that New Delhi too was not serious about the impending danger to human life and properties in the Siang belt by the river’s turbidity, despite being informed of the matter by the chief minister Pema Khandu and MP Ninong Ering. When the contaminated water of the Siang river began to take a toll on aquatic life and wildlife, the central government came out with a possible reason for Siang River pollution saying that ‘it may be possibly be due to landslide, earthquake or any other activity’ in the upstream Tibet region. It was believed that the prime minister took up the issue seriously at the initiative of the Assam chief minister. Reportedly, the PM asked the union external ministry and the water resource ministry to find out the root cause of the Siang/Brahmaputra turning black and take remedial measures on a war footing.

However, it seems that the issue was not given much importance when several MPs raised it in Parliament. There was no elaborate discussion on the issue in Parliament for remedial measures. When both India and China were engaged in the blame game instead of finding out the cause of the water pollution, the polluted Siang river already affected aquatic life and wild animals not only in the Siang valley but also downstream in Assam. The migratory birds in Daying Ering Wildlife Sanctuary disappeared. The sharp increase in the turbidity level of the river forced migratory birds to change their destination to other regions. It also affected fisherman as the fish population suddenly decreased in some areas of the contaminated Siang river. However, though very late, China, which claims Arunachal as its territory in South Tibet, only recently gave lip service and assured India on maintaining communication on the artificial lake and said that contamination of the Yarlung Zangbo (Chinese name for the Brahmaputra) river was because of massive earthquakes in Southern Tibet.

It seems both the state and central governments failed to take a lesson from the devastating flash-flood caused by the breaking of an artificial dam following the Tibet earthquake in 2000. Even though China denies carrying out construction activities in the tributaries of the Yarlung Zangbo, India must take a major diplomatic initiative to compel China to initiate a comprehensive water management policy as the agreement signed between the two Asian giants on hydrological data in Tibet will hold water, given the situation. A strong mechanism should be in place with China on the water-sharing issue, and for preventive and remedial measures in case of any manmade and natural disaster at the confluence of the Brahmaputra in Tibet. We can only hope that China, intentionally or unintentionally, will not use the water in Tibet as a weapon or a tool to gain leverage over India. The new year should be a year of mutual understanding, and the two Asian giants should shun the path of confrontation.

Assam: 54% increase in fish production

<https://www.telegraphindia.com/states/north-east/54-increase-in-fishproduction-in-assam-196294>

Fish production in Assam has increased by 54 per cent in the past nine years, says a report of the Union ministry of agriculture and farmers' welfare. The annual report of 2016-17, published by the department of animal husbandry, dairying and fisheries of the ministry, says fish production has increased to 2.94 lakh tonnes in 2016-17 from 1.90 lakh tonnes in 2007-08. Assam is predominantly a fish-eating state with 90 per cent of its population consuming fish. The increased fish production, however, is yet to meet the demand which is 3.36 lakh tonnes a year. To meet the gap, the state depends on leading fish producing states such as Andhra Pradesh. Assam produced 190 tonnes of fish in 2007-08 which increased to 200 tonnes in 2008-09, 218 tonnes in 2009-10, 227 tonnes in 2010-11, 228 tonnes in 2011-12, 254 tonnes in 2012-13, 266 tonnes in 2013-14, 282 tonnes in 2014-15 and 294 tonnes in 2016-17. The state has 4,820km of rivers and canals and 1.35 lakh hectares of waterbodies, including tanks, ponds and floodplain and derelict waterbodies.

Assam is the highest fish-producing state in the Northeast. In 2016-17, Arunachal Pradesh produced four tonnes of fish, Manipur 32 tonnes, Meghalaya 11 tonnes, Mizoram six tonnes, Nagaland eight tonnes and Tripura 69 tonnes. Andhra Pradesh, the top fish-producing state, produced 2,352 tonnes in 2016-17. It registered 132 per cent growth in the past nine years. According to the report, expansion of area under aquaculture has to become an important option to boost fish production. It says: "The Brahmaputra basin has enormous beels lying idle. There are about 1.3 million hectares of beels and other derelict waterbodies in the country. Bringing these waterbodies into the ambit of fisheries will boost fish production tremendously and hence expansion of fisheries in these waterbodies is one of the focus areas of the department for increasing fish production."

Assam: River water pollution in two states spurs research in upper reaches; fish population dwindles

<https://www.telegraphindia.com/states/north-east/high-turbidity-in-siang-detected-194586>

The Central Inland Fisheries Research Institute (CIFRI) has detected high turbidity in the waters of the Siang where investigation for chemicals and biological ingredients is under way. A team of researchers from the institute, who had recently visited the upper reaches of the Brahmaputra and Siang rivers, said change in water content has reduced the fish population at an alarming rate. According to the Brahmaputra Water Investigation Report published recently by the institute, more than 1,000 formazin nephelometric units (FNU) have been found with transparency of about 2 to 4cm. In September - before the report on Brahmaputra's waters - the institute had conducted a survey in the Siang where transparency of water was around 15cm.

An official with the institute said in the earlier study, general turbidity was not investigated and so they could not say the standard level. But the current level might be below danger level, they felt. In September, the rate of total dissolved solid was under the range of 100 to 150 milligram per litre. Now it is 200 milligram per litre. The total dissolved oxygen rate was 7.9, which is the same as now. "Because of extensive floods every year, Assam reels under water for many days. So the capacity to tolerate high turbidity also increases for the fishes of the Brahmaputra and other rivers. But if this condition continues for many days, it will harm fishes," the principal scientist and acting head of Guwahati-based CIFRI Northeast Regional Centre, B.K. Bhattacharjya, said. Simanku Borah, another scientist with the institute, who was also a member of the team that recently had visited the Siang, said: "Due to high turbidity this time, no migratory fish came to our notice. Even local fishermen said they could not catch migratory fishes in this season.

Generally due to low temperature in the upper part of the river, fishes such as mahseer swim downstream. But this year the fish may have opted for other tributaries." The CIFRI team had collected fish and water samples. The institute has also sent some samples to Jorhat-based regional centre of National Bureau of Soil Survey and Land Use Planning (NBSSLUP). Some samples were also sent to the Calcutta-based laboratory of the CIFRI. "We have got the sample from the CIFRI and started an investigation," a scientist with NBSSLUP, Sanjay Kumar Ray, said.

Assam: Fishermen worried over depleting fish stock

<http://www.assamtribune.com/scripts/detailsnew.asp?id=dec1117/state051>

With the Brahmaputra getting contaminated, the fish stock in the mighty river, has started depleting in Dhubri areas for the past few days. The district is known for different species of fish, but with the abnormal deviations in the colour and quality of its water, the fish stock has started deteriorating worrying fishermen. Fishermen who generally earn their daily bread and butter by selling fish are now in a quandary. They have observed that the water of the Brahmaputra has turned muddy which has in turn affected the fish. Gautam Das, a fisherman and supplier of Brahmaputra fish to various markets, said that during the winter season the Brahmaputra is full of with different species of fish, including ari, borali, chital, rohu and katla. However, these days, the fishermen are able to get a very small quantity while catching fish. He also stated that the chingri fish has suddenly disappeared from the river as none of the fisherman has caught it yet.

"The water has become polluted and it is unfit for many of the fish varieties and the fish of the Brahmaputra has migrated to the downstream to Bangladesh areas in search of safer water bodies", Das claimed. However, the fish stock and the water quality in other rivers of the district namely Gangadhar, Gadadhar, Champamati, Gaurang and Tipkai have not been affected. Kabil Sk, a fish wholesaler at Dhubri New Market area said, "What is more interesting is that this

season the fish stock of the rivers has started depleting. The situation is alarming. Although we have very little knowledge about the pollution factor, yet we believe that something is wrong in the water of the mighty Brahmaputra ,” he observed while sharing information about the depletion of fish stock in the district. Not only fish, but the migratory birds have also disappeared from the banks of the Brahmaputra. According to Sarfaraj Hussain Khan, a local environmentalist, several species of migratory birds are yet to arrive in the Brahmaputra. “We have observed that birds have started migrating to nearby beels and rivers instead of the Brahmaputra”, Khan claimed without giving any scientific data.

Assam: These youngsters from Assam are netting healthy incomes from fish seeds

<https://yourstory.com/2017/12/assam-youth-incomes-fish-seeds/>

Taking advantage of the plentiful water bodies in Assam, the production and supply of fertilised fish eggs has emerged as a promising and sustainable livelihood for unemployed youth in rural Assam. Gohainpukhuri village in Narayanpur administrative block of Lakhimpur district has a predominant population of Mising community. Located on the banks of the Luitsuti river, a tributary of Subansiri River, agriculture is the main occupation of the Misings of Gohainpukhuri and neighboring areas. Around 90 percent of the households in the village possess a pond with an average size of 1.5 bigha (1 bigha = 1,332 sq m) and most of the ponds are underutilised. Till recently, fish rearing was not a profitable and popular livelihood option in Gohainpukhuri because of low production. That has now changed. The low production of fish is due to unavailability of quality fish seeds (fertilised fish eggs), infrastructure, and lack of awareness about the economic significance of scientific rearing.

The other bottlenecks include poor feeding practices and high cost of feeds and poor pond management. Of the constraints, unavailability of good quality fish seeds was found to be very critical. Potential of fisheries Assam can be called a non-vegetarian state, as over 95 percent of the population eats fish. The state is also dotted with water bodies such as beels, ponds and swamps — a total of around 3.73 lakh water bodies, covering an area of 2.85 lakh ha. However, the productivity per ha of water body is low, as only 5 percent of the area is under scientific fish cultivation. While the current production of fish in Assam is 2.97 lakh metric ton (MT), the demand is 3.31 lakh MT, according to Fishery Sector at a Glance, Assam, 2015-16. Thus, the state incurs a deficit of 93.15 MT per day, costing the exchequer around Rs 1.15 crore. The deficit is met by imports from other states, mainly Andhra Pradesh and West Bengal, and sometimes from neighbouring Bangladesh. Presently, fish yield is less than 1 MT per ha through traditional rearing and about 2.2 MT under improved rearing.

By training unemployed educated youth in improved rearing practices, the production can be increased. Given the availability of water bodies and high demand, there is ample scope for developing fisheries as an alternate means of livelihood in water bodies protected by

embankments. Fisheries for jobs Centre for Microfinance and Livelihood (CML), a non-profit working in the Northeast, had identified the need for promoting producers who could provide relevant services to fish cultivators and supply good quality fry, fingerling and yearling — the three indicating the stages of the fish's growth. The best possible solution was to train local unemployed youth in production and supply of quality fish seed. This would also promote self-employment.

The Mising Autonomous Council (MAC) along with CML, an initiative of Tata Trusts, started training unemployed local youth in fish seed production. Pramod Doley, an educated youth in Gohainpukhuri of Lakhimpur district, was unemployed after having worked as a private taxi driver and on /short-term contractual work. The job did not provide him with a steady income or independence at work. Though the family was food sufficient, cash flow was a big concern. So he was exploring other avenues, as he had to support his family, including a widowed sister-in-law and two nephews. After the demise of his elder brother, Pramod had to support the family and he started working in the agriculture field and rearing fishes. The family owns two ponds of 0.5 acre each but used to rear fish primarily for domestic consumption. He was not aware of improved cultivation practices. Hence, the net income from the total pond area was as low as Rs 5,000 per annum.

Netting an income Pramod was identified as one of the community-based service providers for the fish farmers from 91 households with a command area of 10.61 ha. Pramod underwent training on the importance of fish seeds, their production, pond development, stocking, feed and pond management, harvest, and sale. In a short span of time, Pramod proved himself as a good seed supplier and a sincere service provider in the cluster. Promod visited Pabhoi Greens, a fish hatchery owned by Neelam Datta at Biswanath Chariali. After the visit, Doley realised that fish seed rearing in itself could be a self-sustainable livelihood option. Training sessions and exposure visits were critical drives for him. “The exposure visit to Pabhoi farm boosted my confidence. I learned fundamental aspects of fish seed production,” Promod said. “Learning the preparation and application of organic manure, preparation of homemade feed, liming, netting, monitoring water quality, etc., helped me a lot.”

After the training and exposure program, Promod stocked one major carp namely, mrigal and two minor carps kuhi and bata in the first season. He stocked spawn of rohu in two ponds that he had taken on lease at Rs 4,000 per annum. In addition to selling yearlings to farmers in the Gohainpukhuri cluster, he sold to 65 farmers outside the local farmer producer group. From the net income of nearly Rs 3.18 lakh, he paid his partner's investment and profit share, earning nearly Rs 2.78 lakh for himself. Apart from this, he earned Rs 26,000 by rearing table fish katla, rohu and mrigal. It was a good journey for Promod at the end of the 9-month cycle. “It was the highest income in my life from fishery,” he said excitedly. After clearing the loans he had taken during his contractual work, he has taken two more ponds on lease, to expand his business. He has become an inspiration for other youth in taking up fishery as a self-employment opportunity.

Way ahead This year, 10 more youth have been trained in the Gohainpukhuri cluster and provided with viable business plans. The challenges in this activity include receiving timely payment and competition from existing fish seed suppliers. To overcome challenges such as sale of output, the producers need to develop a good rapport and gain trust of farmers. The experience of the youth shows that fish seed rearing could be a profitable business and provide self-employment. This would make a significant dent in the high rural unemployment that exists in the countryside of Assam. This model can be promoted in other blocks and districts by engaging more youth according to the demand. However proper grooming and handholding is an important prerequisite in promoting the model.

Assam: Muddy Waters In Brahmaputra Threaten Livelihood Of Boatmen, Fishermen

<https://www.ndtv.com/india-news/muddy-waters-in-brahmaputra-threaten-livelihood-of-boatmen-fishermen-1786070>

In Dibrugarh, Assam, the lives of thousands of residents has run into muddy waters. Every day, passenger boats ferry thousands of people from Silapathar in the northern bank of the Brahmaputra to the southern bank's tea city Dibrugarh for work, health services and education. But with water levels already decreasing, the increasing turbidity of the river poses a challenge for boatmen and fishermen whose livelihoods depend on the river. The rapid increase in turbidity can lead to more sedimentation, which is a boatman's nightmare. Bhaikon Gam, a boatman, says "The water level is already decreasing and this water has turned muddy thus we are finding it difficult to ply out baits and sometimes at even night we need to ply medical emergency cases, it seems that will be difficult." But difficulty in navigating boats is not the only effect the increasing murkiness is having on the people. Dhananjay, another boatman, says that they have observed something unusual over the last few weeks.

"We live and work on the river. We use the river water for everything but now we are not able to use. Some people are complaining about skin diseases after using this muddy water" he said. The water in the upper reaches of the Brahmaputra is increasingly turning muddy and extremely turbid. A recent test conducted in the upper reaches of the Brahmaputra showed a Nephelometric Turbidity Unit (NTU) - a measure of the concentration of suspended particulates in a liquid - of 404, while the turbidity in the middle reaches near Tezpur was measured at 195 NTU. The permissible level for human consumption, in comparison, is 5 NTU. The Assam government has already issued an alert and is now testing water samples even in middle and lower stream of Brahmaputra. The rising turbidity has had a direct effect on fishermen and their livelihood, as their catch has gone down as a result of murkier waters.

A visit to the Rahmaria fishing village reveals gloomy faces. "Earlier we earned a lot during winter fishing season, but in a fortnight the water has turned muddy, and we have lost over Rs. 50 thousand and our livelihood is at stake. The water is turbid and it's like cement laden, muddy"

Madhabdev Das, a fisherman from Rahmaria told NDTV. While boatmen and fishermen, whose livelihoods depend directly on the water, have been affected, even a few cattle in the area died from consuming the brackish water of the Brahmaputra.

Assam: Measures to boost fish production in Barak Valley

<http://www.sentinelassam.com/story/news/14/measures-to-boost-fish-production-in-barak-valley/2017-12-08/1/328318#.WipTVDRx3IU>

The district fishery development office in coordination with the fish development offices of Hailakandi and Karimganj is concentrating on scientific measures to boost up fish production in Barak Valley. According to Raqibul Haque, fishery development officer, Cachar, convenor of the programme, the total fish production in the valley is around 30,460 mt while the demand is 40,000 mt. Giving further information, Raqibul Haque said of the total fish produced, 4 to 5 % is exported to Mizoram and Meghalaya which have shortage of fish supply despite abundant river system and also the possibilities of fish rearing". He added to say in order to meet the deficit in demand, 9 mt fish is brought from West Bengal, Andhra Pradesh and Uttar Pradesh. Taking into account the overall shortage of fish production and the gap between demand and supply, one of the measures adopted by the department is to provide training in fingerling rearing and fish production, training to farmers of the three districts of Cachar, Karimganj and Hailakandi has been taken up which started from December 6 to conclude on December 9. The 4 day training has 100 farmers who are equally divided in two batches.

The emphasis during this training period is on seed management, fingerling rearing, wetland management and production. Such training is conducted from time to time. The farmers are detailed about the latest method and technology by experts on the subject. The training to first batch is concluded, and the training to second batch has begun. The entire programme is financed and supported by National Fish Development Board, Hyderabad. Kapil Debnath is acting as resource person to provide vital information to the farmers on fish farming. He is from Krishi Vigyan Kendra, Arunachal. Other persons with expertise are Mohan Teron, Fishery Development Officer, Hailakandi, S K Das, Assistant Fishery Officer, Cachar, Dr Manoranjan Sarkar, surgeon (Veterinary Department), Dr Sarkar is training the farmers on how to contain spread of diseases on fishes. According to a study of the ecology department of Assam University, the fishes of water bodies and rivers are found to contain cancerous growth syndrome. It is due to heavy pollution of the waters.

Others coordinating the training are Raqibul Haque and Ranjit Dev, fishery development officer, Cachar. The team of experts and fishery officers according to the guidelines are making spot verification of fish farming by farmers and their fisheries. The farmers during the visit are given inputs about latest technology and how to rear the fingerlings in a healthy and conducive manner. Nazrul Islam among all the farmers has the largest fish farming spread over an area of 300

bighas of land. He owns in all 24 fisheries. The team of experts also visited fish seed farming at Bhaga which is run and managed by the state government and organized by district fishery development office, Silchar. During the last Namami Barak festival, the fishery department sold out 600 kg of fish of varieties. The consumers made a beeline for the fish stall set up in the food zone. The preference for the fishes in the stall has been due to the fact that they were all from fresh running water. Raqibul Haque pointed out that the fishery department has only one regret, it could not meet the huge demand for the fish.

Assam: Riverbank erosion has rendered thousands homeless in Assam and yet it's not treated as an emergency

http://www.huffingtonpost.in/village-square/riverbank-erosion-has-rendered-thousands-homeless-in-assam-and-yet-its-not-treated-as-an-emergency_a_23198290/

"The pain that riverbank erosion has caused is immense. My land was eaten away and I had to constantly shift. In my previous village Ramapara, I had shift 20 times!" says Zakir Hussain of Dighir Pathar village in Barpeta District of Assam. "The river would constantly gnaw at the banks. I had to shift my house constantly to escape the river's wrath." Like Hussain, there are a large number of people who suffer continuous displacement and hardship in Barpeta, which has suffered particularly due to riverbank erosion. In 2007 alone, around 440 hectares of land was eroded and around 76 villages and some 2,500 families were affected from riverbank erosion. The total loss of property was around Rs 33 million. Around 6% of the district is affected by riverbank erosion. The Brahmaputra River and its tributaries like Beki River cause riverbank erosion in the district.

The calamity caused by riverbank erosion in Barpeta is symptomatic to the problem faced across the Ganga-Brahmaputra flood plains from bank erosion. The damage it causes to the poor and vulnerable is no less than that from the annual floods in Assam and several other states in the country. Serious problem The intensity of the problem can be gauged from the fact that the total land lost due to bank erosion caused by the Brahmaputra River in Assam alone has ranged between 72.5 sq. km per year and 80 sq. km per year between 1997 and 2007-2008. Further, property worth around Rs 182.24 crore was damaged as a result of bank erosion. Floods, being classified as a disaster, elicit immediate response from the government in the form of rescue, relief, compensation and sanctions for repair of infrastructure. But hazards like riverbank erosion that continuously affects the poorest and the most impoverished sections of the community residing in the Ganga-Brahmaputra flood plains, is not classified as a disaster. There is a pressing need for declaring riverbank erosion as a disaster. The action on bank erosion is currently restricted to bank strengthening through reinforced concrete or bamboo porcupines.

But one needs to take a people-centric approach for addressing the problems emanating from river bank erosion that would contribute to the resilience building of the erosion-affected people

through the provision of compensation, rehabilitation and an emphasis on human resource development amongst the erosion affected population through skill building initiatives. Severe impact Riverbank erosion is a natural phenomenon that results in the removal of material from the banks of a river. Most of the rivers in the Ganga-Brahmaputra basin are essentially braided alluvial channels that cause erosion through a combination of three different processes. The pre-weakening process involves repeated cycles of wetting and drying of the bank, which prepares it for erosion.

Thereafter, two processes begin to operate simultaneously. The particles and aggregates are directly taken away by fluvial action and subsequently the bank succumbs, resulting in a mass failure that involves the collapse, slumping and sliding of the material from the bank and into the channel. While the phenomenon is natural, the impact it has is disastrous on the life and livelihoods of the riparian community who are settled on or close to the unstable banks of these channels. The resettlement is often an involuntary decision as the land gets eroded. Given the impoverished state of the riparian population, the resettlement happens close to the river, since land prices increase as one moves farther away from the river. Multiple displacements In a study on the riverbank erosion-affected families in 44 villages in Barpeta in 2015-16, we found that the loss of land was the most important loss faced by the families. Land, the most important asset possessed by any rural household, forms the basis of economic and social identity of the household.

The bank erosion rendered the households landless and homeless and the families face involuntary displacement. Their hitherto primary occupation, agriculture, takes a fatal blow. While the development induced displacement tend to displace people once, the families affected by bank erosion are subjected to multiple displacement. The loss of land and the resulting displacement also reduces the livestock holding. Livestock is usually seen as a liquid asset on which the rural household can fall back during times of crisis. But as agricultural land is lost to the river, the availability of fodder also gets reduced. Hence keeping livestock becomes an expensive proposition. Similarly, the loss of homestead land also means a loss of small water bodies located in the homestead, where the riverine population would otherwise engage in fishery for self-consumption.

We found that post-displacement the consumption of fish drops among the affected population. Occupational insecurity The landlessness among the bank erosion affected community breeds certain kind of occupational insecurity. As people are forced to move out of agriculture and get engaged in labor or small business, there is an increased demand for family labor. The demand increases with the increase in the size of the household. The average family size among the erosion-affected people in Barpeta was seven, compared with a national average of five. In the absence of proper skill training, a large number of the affected people, who are also young, are forced to enter the unorganized labor market and undertake migration. This disrupts the normal functioning of a household. Children are often the prime victims of this because they have to

dropout from schools following the relocation of the household. Apart from the requisite skills, lack of access to cheap credit also constrains the erosion-affected towards undertaking superior non-farm occupations.

In Barpeta, the credit gap is usually filled up by moneylenders, who would provide credit to the people at exorbitantly high rates of interest, often as high as 40% on the principle amount. Reduction of farm-based livelihoods, limited option for superior non-farm livelihoods and lack of access to formal credit together keeps the erosion-affected household in a state of impoverishment. As have been found among the bank erosion-affected people in Bangladesh, the affected households in Barpeta also fall back on the informal social networks of the community (colloquially called samaj) during times of crisis. The samaj plays an important role in helping the affected family to perform social obligations like funeral, marriage, in providing a collective identity and in facilitating collective action towards combating the bank erosion through constructive works like construction of crude embankments with the locally available resources or the repair of bamboo bridges.

Disaster classification Given the kind of impoverishment that riverbank erosion imprints on the life and livelihoods of the riparian communities, it is important to go beyond the usual engineering-centric bank strengthening activity and to build an action plan that puts the affected people at the center of the planning process. A series of actions are required for this. First, riverbank erosion has to be classified as a disaster. Currently, it is not so classified and the affected population is not entitled to get any relief through compensation. Recent modifications in the guidelines for the State Disaster Relief Fund (SDRF) provisions the state government to use around 10% of the SDRF to provide relief to people who are affected by "disasters within the local context of the state". Since 2015, the Government of Assam has also designed a scheme for rehabilitation of erosion-affected people.

There is a need that riverbank erosion, like floods, should automatically qualify as a disaster and their qualification should not depend on the whims of the state government. Second, emphasis needs to be placed on skill development to harness the demographic dividend that exists in such areas. Skill enhancement is particularly important among this section of the relatively young population because skills are an asset that serially displaced community can continue to possess, unlike other assets like land and livestock. Third, provisions should be made to improve the access to formal sources of credit that would enhance and not constrain the developmental process. One could use the informal social networks for starting formal groups of credit circulation through the creation of self-help groups (SHGs).

Assam: Centre of South East Asia: Patowary

<http://www.assamtribune.com/scripts/detailsnew.asp?id=nov1617/state053>

Minister of Industries, Commerce, Transport and Parliamentary Affairs Chandra Mohan Patowary on Monday said that Assam is the centre of South East Asia. Addressing the gathering at Banga Bhawan after launching the theme song of ensuing river festival Namami Barak, Patowary said “Assam shares 4800-km of international border with neighbouring countries. The State has immense potential and there is a market for 200 million consumers which need to be exploited for the greater interest of Assam and South East.” Stressing on the Act East policy as envisioned by the Government, the Transport Minister said that dredging of river Barak which is declared as a National Waterway¹⁶ shall open new vistas for the people of this valley for setting up of new industries and commerce and Namami Barak shall add fillip towards the efforts.

The Minister mocked the Opposition for its remarks to boycott the first ever river festival and urged them to shun negative attempts towards developing the region. Fish production : Besides the major objective of river dredging and presentation of the socio-economic potential of Barak Valley before the global audience, the ensuing river festival of Namami Barak will also be an occasion to promote fish production here, said Minister of Fisheries Parimal Suklabaidya. “We wanted to promote the know-how of fish production and encourage the fisherman in learning the methods to maximise the growth of fish and there can be no better a stage than the river festival to be held here. Fish of river Barak is known for its quality and hence it is quite fitting to organise a festival wherein people can learn about fish cultivation,” Suklabaidya told The Assam Tribune on Tuesday.

On the other hand, asked about if the Department of Fisheries is thinking about measures to contain the escalating fish prices across the State, Suklabaidya said “the Department is focused on fish production while the market prices are regulated by the FishFed. However, efforts are initiated to amalgamate the FishFed with the Department of Fisheries. Once this is done, we can chalk out a plan to control fish prices in the State.”

Assam: Push to save hilsa

<https://www.telegraphindia.com/states/north-east/assam-push-to-save-hilsa-183170>

The Assam fisheries department has issued an advisory to deputy commissioners of four districts on measures to improve hilsa production and prevent excess fishing to ensure its conservation. The advisory to Dhubri, Goalpara, South Salmara-Mankachar and Bongaigaon districts has banned fishing in different stretches of the Brahmaputra between October and December and April and June to allow the young hilsa, locally called jatka, which are less than 23cm in length, to return to the sea. In the past, hilsa was not harvested between Dashami and Saraswati puja (October to January) as it is the time when juvenile fish born upstream make their way to the sea. But fishermen have been ignoring calls to leave the jatka alone to repopulate the species since

the demand for hilsa has been growing. Global warming has also led to gradual depletion of hilsa breeding grounds, reducing its population further.

The advent of fine fishing nets and environmental degradation of the rivers has worsened the situation. Acting on the advisory, the Dhubri administration has issued a directive to the district fishery development officer to create awareness and carry out raids, if necessary, to prevent excess fishing of jatka. Appreciating the initiative of the fisheries department, fish lovers of Dhubri have urged the authority concerned to organise a hilsa festival in the town. "Since the past couple of years, the availability of hilsa in Dhubri markets has risen. Hence, not only fish lovers but traders from outside are thronging the markets to buy hilsa in large quantities. Therefore, it will be better to organise a fish festival in Dhubri," a schoolteacher said. A few months ago, the price of hilsa had shot up to Rs 800 to Rs 900 per kg but the easy availability of hilsa in the Brahmaputra in Dhubri district, has led to the prices dropping to Rs 250 from Rs 450 per kg.

Assam: State completes final assessment of flood damage

<http://www.assamtribune.com/scripts/detailsnew.asp?id=nov0217/at061>

Assam faced one of the most devastating floods this year and the total loss in terms of money has been estimated to the tune of more than Rs 4,215 crore. The State government will soon submit a detailed memorandum to the Centre with sector-wise damage and the funds required to repair the same. Now it is up to the Centre to take a final decision on the amount of funds to be released to the State to tide over the crisis. Highly placed official sources told The Assam Tribune that the State government had earlier submitted a memorandum to the Centre based on preliminary assessment of the damage. But the actual assessment could be made only after the flood water receded and it took some time to compile the records with details of the funds that would be required to repair the damage. As per the assessment, the highest amount would be required by the water resources department. Repair of 26 breaches that occurred in the floods would require an amount of Rs 135.22 crore, while an amount of Rs 2,864.78 crore would be required for repairing the damage caused to the embankments and other flood control structures, besides river bank stabilization works.

Floods this year took a heavy toll on the road communication network in the State and as per the assessment, Rs 595.12 crore would be required to repair the damage. As many as 1,730 roads were damaged and 307 breaches occurred on the roads, while five bridges and eight culverts were washed away. In addition to that, a number of culverts, approaches to the bridges, etc., were washed away in the floods. As per the assessment, Rs 226.04 crore would be required to provide assistance to the farmers whose crops were damaged in the floods, while Rs 3.76 crore would be required to pay compensation for the loss of cattle heads. The fishery department will require around Rs 119 crore for repairing the flood damage. Fish ponds of around 6,245 hectares, fish

ponds with rice cultivation, besides 55 boats and 300 nets of the department were damaged in the floods. The handicrafts and handloom department will require around Rs 14.17 crore as 76 work sheds, raw materials, tools, etc., were damaged in the floods. Quite a large number of houses were also damaged in the floods and an amount of Rs 90.94 crore will be required to pay compensation to the house-owners.

As per the assessment made by the government, 404 concrete houses and 3,902 kutcha houses were fully damaged, while a substantial number of houses were partially damaged. More than 8,000 huts were also destroyed in the floods. Eleven subcentres of the animal husbandry and veterinary department were fully damaged in the floods, while 24 others were partially damaged. A number of cattle sheds and quarters were also damaged and it would require an amount of Rs 12.80 crore for their repair. At least 288 piped water supply schemes, more than 3,000 spot water sources and more than 10,000 latrines of the public health engineering department were damaged in the floods and Rs 17.64 crore will be required for repair works. More than Rs 9 crore would be required for repairing the damaged anganwadi centres of the social welfare department, while the power department will need Rs 4.08 crore for repairing the damage.

The forest department will need Rs 12.37 crore to repair the patrolling roads, high lands, nursery, etc. Sources revealed that 127 health institutions were damaged and to repair these and to procure the damaged equipment, an amount of Rs 48 crore would be required. The floods also inflicted heavy damage to schools as according to records, around a hundred elementary schools were fully damaged and more than 2,000 were partially damaged. Eleven schools were washed away. The education department will need Rs 26.77 crore to repair the flood damage. The urban development department has also given an assessment of Rs 28.09 crore for repairing the damage caused in the floods.

Assam: Fisheries dept moves DCs to prevent hilsa catching

<http://www.assamtribune.com/scripts/detailsnew.asp?id=oct2017/state054>

Local fishermen are catching tonnes of hilsa (also known as ilish) fish in the Brahmaputra near Tilapara, south of Chandardinga Hill, beside Chapar, in Dhubri district. This is the breeding season for the hilsas and catching hilsa is banned in neighbouring Bangladesh during this season. It is the national fish of Bangladesh. It is also popular in India, especially in West Bengal, Odisha, Tripura, Assam, southern Gujarat and Mizoram. It is also exported globally. According to sources in the Fisheries Department, the Department has requested the Deputy Commissioners (DCs) concerned to take steps locally to prevent the practice of catching hilsa fish during this breeding season. The District Fisheries Development Officers have also been asked to take up the matter in due earnest with their respective DCs. The hilsa is a brackish fish. The confluence of the Brahmaputra with the Bay of Bengal, where water is a mixture of saline and fresh water, is its habitat.

At an interval of two to three years, fishes of this species enter the Assam part of the Brahmaputra for breeding purpose. This time also, schools of the fishes of this species have entered the Assam part of the Brahmaputra for the purpose and a huge portion of them has been caught by the local fishermen in the above area, which is an ideal ground for breeding. Though as per the provisions of the Assam Fisheries Act, the Fisheries Department can prohibit catching of other species of fish between April 1 and July 15, this piece of legislation has no provision for such steps in case of the hilsa, the sources said. The sources also maintained that there has been a slump in such activities in the past couple of days. In this respect, it may be mentioned here that the Government of the neighbouring Bangladesh has banned catching, transportation, storing and selling of hilsa during this breeding season and it has been dealing any violation of this order with a firm hand. It is also trying to generate awareness among the common people on the need to give up the practice of catching hilsa during this season. The fish contributes about 12 per cent of the total fish production and about 1 per cent of the gross domestic product (GDP) in Bangladesh.

Assam: Hilsa hurrah in Dhubri markets

<http://www.assamtribune.com/scripts/detailsnew.asp?id=oct1217/state051>

Fish lovers had a great time here as hilsa, one of the most preferred fish variety, flooded the local markets in the district, following a bumper catch. According to regular fish buyers, such an ‘unbelievable’ drop in price of hilsa has happened after almost four years. The unusually high yield has also resulted in a drastic fall in the price of the fish. Thanks to the excess supply, hilsa, which normally costs Rs 900-1,200 a kg depending on the size of the fish, is now available at Rs 150-300 a kilo throughout the district. Traders here also believe that this year the availability of hilsa is considered much more compared to the previous years. “Steamed hilsa is favourite among most of the people from this area. When we are getting hilsa at such a low price, why opt for other varieties,” said Gowahar Khan, a regular fish buyer, adding, “with the drop in price of hilsa, the poor and marginalised section of the society can easily afford this variety and enjoy their platter of hilsa, which is otherwise a distant dream for them.”

However, not only the fish lovers here are taking advantage of this price drop, traders from neighbouring West Bengal are thronging the markets of Dhubri in great numbers to buy hilsa in bulk. Kabil SK, a fish wholesaler of the New Market here, said although at this time of the year this fish variety becomes available in this area, in the last few years, its availability has increased in Birchingchar, Jaleshwar, Fakirganj and Dhubri and its nearby river island areas. He said if this fish variety could be preserved for a longer period, both sellers and buyers could be benefited. “But hilsa can’t be preserved for more than 15 days,” he added. Local environmentalist Pramod Roy said if such bulk fishing of this fish variety continues, it will affect the ecosystem of the river in the long run. “This fish variety travels upstream from the rivers of Bangladesh to Assam to lay eggs, but they are caught in the Dhubri area at their pregnant state. This fish variety has

changed its travel route and is reaching Dhubri in large numbers. Moreover, the depth of the Brahmaputra has decreased and fishermen now-a-days use new types of nets and advanced techniques to catch fish,” said Roy.

Assam: Fishing for economic purposes prohibited

<http://www.sentinelassam.com/story/news/2/fishing-for-economic-purposes-prohibited/2017-10-12/1/322648#.Wd7xi7XhWsw>

Under Section 144 of Cr PC, a directive was issued by the Additional District Magistrate on Wednesday prohibiting fishing for economic purposes in certain areas falling under the 2nd and 3rd Fishery Blocks of the district. This order comes in the wake of disturbances being reported from areas covering from Dibru Reserve Forest in the north and Rangmola, Khamtigowali, Gereki Nepali, Gereki Mirigaon Nefafu Tea Estate, Balijan in the south, first block of Dibru River in the east and Mothola Tea Estate in the west, falling under the two aforesaid blocks.

Moreover, the aforesaid fishery blocks will remain under the supervision of Chabua Revenue Circle Officer till a valid conclusion based on the directive issued by National Green Tribunal is reached on the decision of fishing for economic purpose in the entire fishery block. In addition, for maintaining public peace and order in the aforesaid areas, Section 144 has been issued in the matter relating to fishing for economic purposes, assembly of more than five persons in the above places and building of embankments. Any person found violating the directive will be duly tried under the legal provisions of Section 188 of the Indian Penal Code.

Assam: Gangadhar river likely to swallow up Golakganj in a few years

<http://www.assamtribune.com/scripts/detailsnew.asp?id=oct0817/state050>

Due to unabated heavy erosion by the Gangadhar river, Golakganj, the gateway of Assam, Bangladesh and North Bengal, is likely to disappear from the map. The town was nerve centre of the business community up to 1970. The meaning of ‘ganj’ is a centre of business. Golak Chandra Barua of the erstwhile Gauripur Royal Estate donated land for construction of the railway station at Golakganj during the British rule and as a sign of his benevolent act, the original name of South Tokrerchara was changed into ‘Golak’. Golok added ganj made it as Golakganj. From that time onwards the place was known as Golakganj. The turbulent Gangadhar river flows along the Golakganj Bazar area. Once, the river was the source of income of the fishing community and a tasteful variety of fish called ‘Gharaiya Rui’ was available but those days are gone. There was a big field on the bank of the river and there were a number of jute godowns beside the field. There was also an aluminium factory, a number of rich families and an attractive Shiva temple and a banyan tree.

Hundreds of devotees performed Shiva Chaturdashi every year and a big mela was also held. The railway bridge over the Gangadhar river which was opened in 1901 served the purpose of transportation for all the traders of the area and North Bengal. In 1974, the Gangadhar washed away the approach road of the NH-31 but no effective measures were seen taken by the concerned authority and, as a result, the water of the restless river began to erode a major portion of the eastern bank and the road communication was totally disrupted causing untold hardship to lakhs of people living in the western part of the river. The unabated erosion swallowed a vast area of the eastern bank and as a result the trading community was compelled to shift the godowns and the aluminium factory. A major area of the police station was also swallowed by the river. Now the entire area is in the middle of the river.

The NH-31 was diverted two km away from Golakganj and a footbridge named Bir Chilarai Setu was constructed eight km away. Golakganj has now virtually become a deserted place. The river takes a U-turn from Pestarghat area and in the last two years, North Tokrerchara, a nearby village of Golakganj was washed away by the restless river and the villagers had to take shelter on the embankment. No measures for their rehabilitation were seen undertaken. The only crematorium for the Hindu community on the bank of the river was washed away and only a part of it is standing in the middle of the river and it has turned into a river island having no communication.

Temporary measures were taken to check erosion but that too were of no use. The former Congress MLA and the MP visited the place of erosion and assured the people to save their lives and property from erosion but nothing was taken up. The people have been left at the mercy of God. A major part of the Rahmatganj Madrassa has already gone under the river. The people of the area have urged the government to undertake permanent protection to check erosion without which Golakganj may disappear from the map of the district of Dhubri like South Salmara on the south bank of the Brahmaputra within a few years.

Assam: Flash flood causes huge damages in Mankachar area

<http://www.assamtribune.com/scripts/detailsnew.asp?id=oct0317/state050>

Due to incessant rains in the Meghalya hills for the past few days, a devastating flash flood occurred in the entire Kalapani area under Mankachar revenue circle of South Salmara-Mankachar district on Sunday and caused huge damages to agricultural fields and fisheries. The rush of flood water, while it came down from the hills, was so fast that within a few minutes three wooden bridges on Kalo river located at Boisabari, Tokpara and Lakhishari were washed away causing total disruption of road communication in greater Kalapani areas. The flash flood caused maximum damages in agricultural fields where thousands of hectares of standing sali paddy along with vegetables were submerged. Almost 50 villages under three gaon panchayats have been directly affected by the flash flood.

Maximum damage was suffered by farmers with fisheries. Sources informed that more than 600 fisheries with full grown fishes were totally submerged and damaged and its worth would be more than rupees three crore. A local fish farmer, Jomser Ali informed this Correspondent that he had three fisheries covering about 20 bighas of land with mature fishes weighing not less than one-and-a-half kilogram each, and its market value would be more than Rs 5 lakh. All his three fisheries have been totally damaged by the flash flood. The local people have alleged that the district administration has not given any importance towards the damage. It has been learnt that an ADC from the district administration visited the affected areas after 36 hours of the devastation.

Assam: Subansiri erosion displaces 23 families

<http://www.assamtribune.com/scripts/detailsnew.asp?id=sep0717/state055>

Unabated erosion by the Subansiri river in the Bihpuria Revenue Circle of Lakhimpur district has left 23 families displaced. The erosion worst-hit area is in Kolbari Chuburi under Bahgora-Dhunaguri Gaon Panchayat of Bihpuria Rural Development Block where villagers have been affected since May this year. Subansiri, which has encircled the area in its changing course, has swallowed more than 60 per cent of the land of the area making the village an island. As many as 12 families, displaced by the continued erosion, have been now forced to take makeshift arrangements for their stay at the opposite side of the erosion where massive sand deposits are created. Many of them are struggling for a shelter at highlands and some of them are forced to stay with their relatives – away from their original place of living.

Agriculture lands that grow mustard, pulses and rice have been lost in the erosion by the river. The erosion and recent flood have also damaged the Kolbari Chuburi LP School, the only school of the region, depriving hundreds of students from regular classes. Fisheries damaged: The recent flood in Lakhimpur district has destroyed fisheries measuring 1449.4 hectares of land affecting thousands of entrepreneurs. According to the district Fishery Department, Lakhimpur's 7,889 fishery entrepreneurs from 298 villages of all the nine rural development blocks of the district have been hit by the loss of fisheries in floods so far.

Assam : Will Dredging of Brahmaputra Serve the Purpose?

<http://www.businessnortheast.com/article.php?displayid=1010229&displaytype=Article>

The navigation potential of the Brahmaputra is immense but in desperate need of an overhaul. Cargo vessels are rarely seen and passengers are transported in rickety wooden boats. But developing the Brahmaputra into an international waterway, as envisaged in the National Waterways Act, could give the state of Assam and the rest of India's northeast an edge. This would make it India's link to ASEAN nations as the government's Act East policy comes to the fore. The Brahmaputra National Waterway 2-- an 890 kilometre-long reach of the river from

Sadiya in Assam to the Bangladesh border--could act as the economic corridor to international ports such as Chittagong in Bangladesh and Haldia Port in West Bengal, boosting trade with southeast Asian countries. To realise such a future, a tripartite agreement for dredging the Brahmaputra was signed between the Assam government on one hand and the Indian inland waterways and national highways authorities on the other at the closing ceremony of the Namami Brahmaputra Festival in Guwahati in April.

Nitin Gadkari, India's union minister of road transport, highways and shipping, hoped that the project would change the economic livelihoods for people in Assam. He announced that the national government would provide 400 billion rupees (USD 6.2 billion) for the construction of the ambitious Brahmaputra Express Highways on both banks of the river. Deemed one of the largest infrastructure projects in the northeast, the 6.4 billion rupee (USD 998 million) highway will stretch 840 kilometres along both banks of the Brahmaputra between Sadiya and Dhubri. The project was found to be technically feasible by the water resource ministry which, after a preliminary survey, offered to help in the work to stabilise both banks, find sustainable solutions to flooding and erosion, and develop the waterways for navigation. Meanwhile, the World Bank has given 98 million rupees (1.5 million) to the Inland Water Transport infrastructure development project to support its work in dredging the river to maximise its navigational potential and introducing safe, modern and economical passenger vessels and river cruisers for tourists.

The IWT operates 100 ferry services on the Brahmaputra and Barak rivers and their tributaries, used by around 6.9 million people annually. The project of the IWT Directorate for the Brahmaputra--a long term strategic plan, capacity development and improving passenger ferry services--has already started said M Rahman, joint director of the IWT, adding that it would also study the natural flow of the river and the impact of the project on aquatic biodiversity and riparians. Dredging to control floods? "Dredging of the Brahmaputra and Barak rivers will not only help to deal with the problem of floods, which affects Assam and Bangladesh, but also improve the navigation facilities in the rivers, which can strengthen trade and commerce between India and its neighbour through riverine routes," said Sarbananda Sonowal, chief minister of Assam, at the inaugural session of the 8th India-Bangladesh Friendship Dialogue on July 2.

According to the chief minister, dredging 1,300 kilometres of the Brahmaputra would also provide material needed to build the highway along its banks, a task for which state government would seek the support and cooperation of Bangladesh. Dredging the Brahmaputra and its tributaries is not a new idea. "During British rule, dredging was done as a protective measure from floods," says PK Dutta, an engineer who submitted the dredging plans to Prime Minister Modi. A more recent attempt to dredge the Assam-stretch of the Brahmaputra in 1974 was largely unsuccessful. Dutta's plan envisages restricting the Brahmaputra within a two kilometre wide course and using the dredged silt to reclaim the land lost to erosion to build the highways. The current plan remains the same but with one change that the channel to be dredged has been

limited to 45 metres. However, no Detailed Project Report (DPR) is available for this project. Economically not viable But the project, set to start in September, has been mired in controversy with experts suspecting the dredging is easier said than done.

But the project, set to start in September, has been mired in controversy with experts suspecting the dredging is easier said than done. An expert team from the Dredging Corporation of India (DCI) visited Assam in September 2016 and reported that a detailed morphological and hydrological study of the river was needed to explore the possibilities for dredging its huge sediment deposits. With an annual discharge rate of around 20,000 cubic metres per second at its mouth, the river is the fourth biggest in terms of discharge. Having such a large drainage area, the Brahmaputra is heavily charged with sediment and as a result of siltation has been steadily expanding--from two kilometres near Guwahati to 14 kilometres at places such as Sadiya and Dibrugarh. This is considered to be a major hurdle to dredging. The Brahmaputra is also a heavily braided river--another impediment to the plan.

"The mighty Brahmaputra and its tributaries carry huge amounts of silt with its flow, around 1.8 billion tonnes per year. Carrying silt from the upper catchment of the Brahmaputra and its tributaries and depositing it in the main stream is a continuous process, mostly due to the vast deforestation and infrastructure development activities in the upper hilly catchment of the rivers," says Pradip Puzari, a project manager at M/S Patel Engineering Ltd. "It is impossible to make the river bed free from silt deposition by dredging, unless a suitable mechanism is applied to capture and dispose of the silt load flowing into the main stream from its tributaries. Otherwise, the dredged portion of the river bed will be filled up with fresh silt immediately. Dredging along a particular width of a channel along the Brahmaputra for navigational purposes will not support a permanent solution to the recurring floods and erosion of the Brahmaputra basin." So where is the need for such an economically-unviable project?

Puzari maintains that the state government should come up with a transparent detailed project report (DPR) taking into consideration the riparians and riverine biodiversity. No environment impact assessment A highly-active river in an area known for its biological and cultural diversity, the Brahmaputra is the lifeline for communities living along its banks and the fragile ecology of the eastern Himalayan region. The Brahmaputra Valley has been densely populated for centuries and most is still used for agriculture. Some blocks of natural habitat do remain, mainly as national parks and wildlife sanctuaries, including 12 identified as protected areas by the World Wildlife Fund. "The Brahmaputra and its adjoining floodplain lakes hold hundreds of species of macroinvertebrate and avian fauna, the most fascinating of which is the endangered Ganges dolphin," says Prof S P Biswas, head of the life sciences department at Dibrugarh University. "Siltation of the river bed and the widening of the river is a common scenario along stretches of the Brahmaputra.

The erratic nature of water discharge, high rates of erosion and siltation and habitat destruction have negative impacts on commercial fisheries and native species such as giant catfish, mahseer and turtles. Their numbers are dwindling sharply in the upper stretches, with the Ganges dolphin being the hardest hit." Numerous environmental concerns associated with dredging the Brahmaputra need to be addressed, but the government seems to ignore those most critical. There are questions over how the construction of the expressways on both banks of the river is possible without disturbing the river connections with other channels and water bodies. But one key question remains: how can the Assam government continue with such a massive project, without conducting the necessary environment impact assessment?

Assam: Improving flood situation is a myth

<http://blogs.timesofindia.indiatimes.com/social-strings/improving-flood-situation-is-a-myth/>

The popular media paints a picture that the flood situation in Assam is improving. An improved situation can only mean receding water levels, not necessarily a situation of reduced or alleviated impacts. It will be appropriate to use the word improved flood situation only when the vulnerabilities are lower, impacts are alleviated, and future risks are minimized. This year India has witnessed several disasters like landslides, landslips, riverine floods, urban floods across states of India. This reveals that our journey towards improving the disaster risk management systems since the enactment of Disaster Management Act 2005 has been far from complete. The reality is that certain factors like impacts of climate change, changes in our local built and natural environment due to human or societal interventions such as rapid urbanization have aggravated the problem of floods at a faster pace than the pace at which capacities have been built.

All of this stands in the way of achievement of meaningful disaster risk reduction. The impacts of disaster and vulnerabilities share a causal relationship in the given context of Assam floods. When vulnerabilities are high the impact of disasters are also high. This can be elaborated by analyzing the community resilience practices I talked about in my previous blog. We are blind to the invisible and gradual and incremental role of climate change. We only can identify the process and witness the consequences of climate change. And vulnerabilities expose the cracks in the social, economic, cultural and political systems. The task of DRM appears to be herculean having to deal with several societal issues. To improve a disaster affected scenario is a huge challenge. A bigger challenge is to deal with vulnerabilities and achieve their sustainable reduction.

Simultaneously, at the local, state and district level we need to keep a check on the factors leading to climate change, fully recognizing that in case of climate change success of our efforts depend on actions of other actors around the world. We can say that a flood situation is progressing towards normalcy only when it is accompanied by greater resilience. If this happens in Assam, it will be a huge achievement. At present, we are at a stage of only dealing with the

direct losses as they are immediate and visible. In the aftermath of the floods, we may review, revisit and rethink plans, policies, governance, administration, leadership with regard to disasters but we already know that what we have built so far is not sufficient as we lack continuous, careful and alert systemic approach to manage disaster risk. Reducing vulnerabilities and checking climate change processes form a long term game which demands rigorous decision making processes.

To harness the benefits of DRM we need investments to reduce the impacts of disasters. We need investments to reduce vulnerabilities on different region specific and identified indicators in required contexts. The SFDRR 2015- 2030 also stresses on this aspect. The investment requirement also faces severe challenges in terms of implementation. To improve a disaster situation we require significant investments to be made. Mumbai floods, Assam floods , Bihar floods, West Bengal floods shows the requirement of investments in disaster management systems like early warning system. Investments also have to be made in the maintenance and updation of technologies, creation of trained and skilled personnel's in larger numbers, and other significant societal issues.

The receding water levels is one layer of problem but the bouncing back to normalcy requires us to deal with the several other layers of issues. We need a multidimensional approach to the research of disasters to deal with multidimensional issues. The long term effects are determined by long term players making the DRM complex. The context is never the same both spatially and temporally. In the start when we devise a strategy we consider the context and then suddenly the societal dynamics changes and the strategy and its impacts may fail. DRM is not about one solution. To solve one issue we need to undertake the changed patterns of issues. This makes the so called "improved" situation a myth. Disasters may lead to creation of more complex structures to be dealt with in the post disaster phase.

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 Jiringam 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.

Assam: Wholesale market of dry fish at Jagiroad on the verge of closure

<http://www.assamtribune.com/scripts/detailsnew.asp?id=aug0517/state050>

The wholesale market of dry fish at Jagiroad, which caters to the need of this commodity for the entire North-east, might close down if the Government does not stop levying GST over it. The site of the market already looks deserted for want of import of the item from the coastal areas, as the traders there have stopped the manual processing of fresh fish due to imposition of this new tax. The whole market of dry fish does an average transaction of Rs 40 crore per annum providing avenues of livelihood to many a needy people of the area apart from generating a steady source of income for a number of entrepreneurs of the locality. The market has been contributing handsomely to the socio-economic uplift of the community by playing a catalytic role in generating direct and indirect avenues of livelihood to thousands of people. Supply of dried fish is made from the coastal areas of Gujarat, Andhra Pradesh, Tamil Nadu, West Bengal.

The trade on the item has suddenly come to a halt leading to an uncertain future for the traders and the suppliers. A spokesman of the local dried fish traders association pointed out that the dried fish is considered a perishable good. “There is also no tax prevalent upon the trading of fresh fish. Dried fish is not a processed food. It is made by drying manually the fresh fish in its state of rottenness by wage labourers in the coastal areas. Therefore, any tax on dried fish is deemed to be injudicious,” he said. For almost all the tribal people of the North-east and a chunk of other people of the region, dried fish is an indispensable part of their traditional food culture. The GST on the item may therefore deprive them of their most sought after food item. “Further, dried fish is one of the poor people’s food and imposition of GST upon it would increase its retail price causing anguish in the minds of these people,” pleaded another trader of the item. Jagiroad Dry Fish Marchants’ Association including the local people of the area too have urge the Government to consider withdrawal of any proposal for imposing of GST upon the commodity saying that closure of the dried fish market will retard the socio-economic development of the locality by aiding unemployment.

When contacted, Munin Borthakur, a senior citizen of the area, who was associated with the market since its inception, told this correspondent that the origin of the market can be traced back to the early sixties. At that time, in the swampy, low-lying areas surrounding Jagiroad in Morigaon district, a dry fish market appeared. The market started growing in stature and fish from different regions of the State were sold in the market. In 1965, dry fish from Gujarat, Maharashtra, Uttar Pradesh, Andhra Pradesh and Tamil Nadu were imported with the gradual

expansion of the market. Initially, the market catered to the local needs, but with its expansion, neighbouring States like Meghalaya, Manipur, Nagaland, Tripura and Arunachal Pradesh entered the market and Jagiroad became an important dry fish trading centre of the North-East Region. The market generally operated on Thursday, Friday and Saturday. There are now about 200 dry fish shops which are operated by mahaldars. Over 4000 people are directly or indirectly associated with this thriving trade. The price of fish varies according to size and quality.

Sea fish and fresh water fish like bamla, puthi, misa range from Rs 10 to Rs 110 per kilogram. The market situated very near the Jagiroad Railway Station is well served by rail and NH-37. The famous dry fish trade is controlled by the Jagiroad Dry Fish Merchants' Association. The association has to pay a substantial amount of money as taxes. The association donates parts of its profits to schools, colleges, organisations and sports activities, claimed the president and the secretary of the Jagiroad Dry Fish Merchants' Association Kamal Dey and Rajesh Deka respectively. The association in tandem with the Jagiroad Lion's Club has also constructed footpaths and drains in the market area, they added.

Assam: Bid to trace history of fishing community through literature

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jul2617/city055>

A literature and storytelling festival will be held at Ananda Nagar, North Guwahati, from July 28 to 30. The festival is being initiated and facilitated by the Directorate of Museums, Assam, under the aegis of the Numaligarh Refinery Limited, Guwahati and Samata Sainik Dal, Barpeta. The inhabitants of the village are from the Malo and Burman community who are traditionally fishermen by occupation. Nearly 300 families reside in this village. This community migrated from Bengali-speaking regions of larger Kamrupa Bengal expanse and has a very unique culture, social history and custom. The project seeks to record an inclusive set of documents on cultural, intellectual and enigmatic layers of life, history and heritage of villagers of Ananda Nagar, according to the Directorate of Museums. Most importantly, the process and methods of recording will be initiated by the collective efforts of the community.

“In this project we will give particular emphasis on writing/sharing the old stories from our grandparents' history, on the cultural roots, experiences being a community that bears various spiritual relationships with the river, experiences that are beyond the comprehension of other communities,” an official in the Directorate of Museums said. Another aspect of the programme is to investigate complex factors of history and the surrounding cultural influences and exchanges in the formation of identity of each other. In the festival, the villages will revisit their history through storytelling methods, where they will write about their history and memory, recreate literature reflecting their daily living and struggle of complex issues. It envisages to create a bridge of knowledge and empowerment of their life, economy, social and cultural ethos.

It will further invigorate intellectual and spiritual dimensions of the community life. Around 60 villagers will participate in the festival.

Assam: Consumption of ‘salani’ fish a health hazard

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jul1917/state058>

Due to shortage of production of local varieties of fish and extinction of some of the local fish, the fish traders of Assam bring ‘salani’ fish from States like Andhra Pradesh, West Bengal, Bihar and Madhya Pradesh to meet the needs of the people here, purchasing tonnes of fish to the tune of Rs 150 crore annually. As a result, the Government of Assam is losing revenue which is said to be a matter of concern. Formerly, the State Government realised 0.5% on ‘salani’ fish but due to implementation of GST, the Government is unable to collect the taxes as before. Sources close to the traders informed that the Government of Madhya Pradesh has requested the State Government not to collect any tax on their consignment of fish. Sources further informed that the traders of the district of Dhubri mainly bring in rou, katla, chital, ari, pava, borali and Thailand magur in well-sealed thermocol cartons filled with ice so that the fish could be easily preserved for a pretty long time without rotting and formalin, a chemical is used to keep the fish fresh.

Some fishery scientists opine that regular consumption of ‘salani’ fish may cause serious health problems like blockade of blood circulation, heart problems, kidney failure and stomach troubles of various kinds. Huge stocks of ‘salani’ fish are regularly brought to be sold in fish markets of Dhubri, Gauripur, Bilasipara, Sapatgram, Golakganj, Agomani, Halakure, Boxirhat and even in small markets located in the remote places of the district. It is also interesting to note that the ‘salani’ fish brought from outside the State are usually reared in big ponds and the fish so reared are fed chemicals for rapid growth and to increase their weights. These chemicals are also harmful to health specially for the children. Enlightened people from all sections have urged the Government to clarify its stand on the issue as regular consumption of such fish usually is said to be the main cause of dehydration among the consumers in general and the children in particular.

Assam: Why Assam faces floods every year

<http://www.livemint.com/Politics/JEGERRSFHOVCAM86Pd1tnL/Why-Assam-faces-floods-every-year.html>

Year after year, the biggest state in the northeastern region, Assam, is ravaged by floods. It displaces thousands and damages property worth billions—but lessons are rarely learnt. While natural topography and excessive rainfall are obvious causes, floods are also caused by human intervention—like encroachment of river banks and wetlands, lack of drainage, unplanned urban growth, hill cutting and deforestation. The Brahmaputra, a trans-boundary river and among the mightiest rivers in Asia, is braided and unstable in its entire reach in Assam except for a few places. As per the Brahmaputra board’s latest annual report, the main reasons behind the

instability of the river are high sedimentation and steep slopes. Additionally, the entire area falls in an earthquake-prone zone and experiences high rainfall. The Brahmaputra board is a central government body that is tasked to carry out surveys and investigations in the Brahmaputra Valley and to prepare a master plan for the control of floods, bank erosion and improvement of drainage.

“Topography of Assam and meteorological factor (high rainfall) are the obvious reason behind Assam floods every year. Also, Brahmaputra is the largest water carrying river of India and the second-largest silt carrying river in the world. But the way we deal with rivers is further accentuating the disaster faced by the region,” said Himanshu Thakkar, coordinator of South Asia Network on Dams, Rivers and People (SANDRP). SANDRP is a network of organizations and individuals working on issues related to the water sector with a focus on large dams. “The dams that are being built are further creating disasters. Not just that, the wetlands forests and local water bodies are being systematically destroyed which in turn is adding to the disaster vulnerability of the area,” Thakkar added. The region is also extremely vulnerable to breaches of embankments. “Floods happen due to a breach of embankments. More than 80% of these embankments have not been reinforced in several decades because there is a huge contractor-administration nexus that benefits monetarily from a flood situation,” said Kishalay Bhattacharjee, professor and commentator on the northeastern region.

According to data released by the Assam State Disaster Management Authority (ASDMA), 2017 has been the worst of the last four years in terms of floods. In 2014, due to floods, 1,846 villages were affected and about 1.6 million people were displaced. In 2015, the number of affected villages was 1,031 and about 1.5 million people were displaced. The numbers saw a huge jump in 2016 with 2,893 villages affected and about 1.7 million people being displaced. This year, about 2,450 villages have been already affected by floods and more than 1.7 million people across the districts of Lakhimpur, Biswanath, Karimganj, Kokrajhar, among others, displaced. The monsoon season is still ongoing. ASDMA has set up 123 relief camps and 259 relief distribution centres across the state but the number of displaced is increasing. The camps are housing close to 29,000 refugees. The current death toll across 58 districts in Arunachal Pradesh, Assam and Manipur is 80.

Thakkar said authorities also need to improve the flood forecasting system and coordinate with local administrations. “The central water commission (CWC) puts out flood forecasts but that’s not good enough as local administration is not able to use it. CWC also needs to take it into account rainfall data and not just upstream water flow. All such measures along with addressing man made causes can help reduce the level disaster in the region,” he added. Floods also are a cause of worry for the administration as they spread disease. “Japanese Encephalitis has already spread here. We fear that other water-borne diseases such as jaundice and cholera will also affect the refugee camps because there are too many displaced people and the situation is only becoming worse with each passing day,” said a senior union home ministry official, requesting

anonymity. A team from Niti Aayog and the union home ministry's National Disaster Response Force (NDRF), led by union minister of state for home affairs Kiren Rijiju, carried out a ground assessment of the Assam floods earlier this week. The government has also drafted in experts from Isro for carrying out an assessment of the damage in the northeast by satellite.

Assam: Kids face flood woes in Assam - Toll mounts, fury grows as relief fails to reach the homeless

https://www.telegraphindia.com/1170718/jsp/frontpage/story_162518.jsp

Seven-year-old Moushumi is fast asleep. Her father, Jula Ali, one of the nearly 100 families taking shelter here since their houses were flooded two weeks ago, sits beside her under a tarpaulin sheet along the Guwahati-Jagiroad road near Pobitora wildlife sanctuary. "She is down with fever and did not sleep a wink last night. I gave her two tablets which I bought from a pharmacy today. After that the temperature has dropped," Ali told this correspondent as he anxiously waited for a government doctor to visit them. "We are somehow managing our food. Many children here have fallen ill. Forget about us, the government should at least look after our children," he added. No baby food from the state government has reached the flood-affected people here yet. Ali's three sons, aged between nine and 14, were playing by continuously jumping into the floodwaters from a culvert on the other side of the road while two of his daughters waited behind fishing nets for their next catch.

"As children bathe in the floodwaters and go fishing, many are falling ill, suffering mostly from fever and earache. Moreover, they run the risk of being run over by vehicles as they keep crossing the road. My daughter Asma got injured yesterday after being hit by a motorcycle," Khairun Nessa, another flood-affected woman, said pointing to her six-year-old daughter. Drowning and trafficking also pose a serious risk to children affected by the deluge. Nearly 500 children have taken refuge with their parents by the wayside. They are primarily residents of Kusiani, Bordia, Murkata Number 1 and Murkata Number 2 villages in Morigaon district, about 40km east of Guwahati. The government, however, says people in the district have not left their homes because of floods.

The Assam State Disaster Management Authority (ASDMA), which issues a flood bulletin every evening, does not have any break-up of the children and women affected by flood, which, like every year, has wreaked havoc in the state. "Of the 60 flood-related deaths in the state so far, 23 are below 14 years. We are collecting data on the affected children," the project officer of ASDMA in Guwahati, Rajib Prakash Baruah, said. The current floods have affected nearly 4,000 villages, covering more than 25 lakh people in 29 of the state's 33 districts. The government data issued on Saturday said more than 1.21 lakh people had taken shelter in 320 relief camps opened by the government. Save the Children, an international NGO working in Assam since 2002, said more than six lakh children have been affected in this year's floods. "During a natural disaster

like flood, children are more vulnerable to abuse and exploitation as their parents remain busy either in managing a shelter or food. Many children drown in floodwaters. Nutritional needs of the newborn, lactating mothers and pregnant women are affected due to lack of proper supply of baby food in relief camps.

Schools get damaged or eroded every year and sometimes remain shut for months, affecting children's education in the long run," Chitta Priyo Sadhu, general manager of Save the Children, told The Telegraph. Sadhu is the team leader of the NGO distributing relief items to flood-affected children. "The government agencies and civil society should work out child-specific relief mechanisms so that children are protected, provided proper food and the impact on their education is minimised," Sadhu said. "In 2003, we had launched a project in which child-friendly spaces are facilitated in some relief camps during floods every year. Under it, children are provided both play and study materials. We engage two facilitators in each centre. In 2014, we trained district disaster management officials in 23 districts on how to ensure child protection. Such child-friendly space can be facilitated by the government in every flood-prone district," Deba Prasad Sarma, project co-ordinator of the NGO in Assam, said. Chiranjeeb Kakoty, director of the Northeast Society for Promotion of Youth and Masses, another NGO, had written to ASDMA on Saturday, seeking details on the number of flood-affected children, pregnant women and the elderly for specific relief measures.

India: Data from India helps Bangladesh prepare for floods, but Assam reels

<http://www.sify.com/news/data-from-india-helps-bangladesh-prepare-for-floods-but-assam-reels-news-others-rhnoaghjhaed.html>

As the monsoon begins, some parts of Bangladesh are already flooded, and the Brahmaputra and Ganga rivers are expected to burst their banks sooner rather than later. But the people are now more aware of potential disasters thanks to improved flood forecasting and monitoring systems. 'We made a forecast for the ongoing flood in the Surma-Kushiyara basin prior to June 30, and now we are forecasting that the water level at many points of the Brahmaputra and Ganga might cross the danger level in the next three days,' said Sazzad Hossain, Executive Engineer at the Bangladesh Flood Forecasting and Warning Centre (FFWC). The projections made by the centre are based on data about water flow upstream in the Brahmaputra, Ganga, Teesta, Feni and Barak -- all transboundary rivers flowing in from India. It is provided to the Bangladesh Meteorological Department by their Indian and Chinese counterparts and gives the authorities more time to prepare and even evacuate the vulnerable residents if necessary.

Under bilateral agreements between the countries, India and China provide information twice a day during the monsoon to help Bangladesh update its flood forecasting systems. India provides data from two points on the Ganga, five on the Brahmaputra, and one each on the Teesta, Feni and Barak rivers, while China provides river flow information from three points on the

Brahmaputra river in Tibet. People living in the Ganga-Brahmaputra-Meghna basin are used to floods during the monsoon season. Just last year, Bangladesh experienced a severe flood due to heavy monsoon rains in the Brahmaputra basin and in 2015, 200,000 hectares of Aman paddy and 50,000 hectares of vegetable fields were inundated with floodwater, according to the Department of Agricultural Extension (DAE). In early June this year, heavy rainfall in Bangladesh and in Assam and Meghalaya caused floods in some parts of the country. Northeastern Bangladesh was badly hit, with the Surma river in Sylhet district flowing 72 cm and 78 cm above the danger level at two points.

According to the Bangladesh Water Development Board, the ongoing flood has affected several hundred people in the districts of Sylhet, Sunamganj, Habiganj and Moulovibazar, where 280 schools have been closed and around 300,000 people have been cut off. But now that the country can learn about potential hazards a few days in advance, preparations can be made earlier. The DAE has made preparations to provide fresh Aman paddy seeds to farmers, in case crops are damaged by the floods. 'We have enough preparation to supply farmers Aman paddy seeds after the flood so that they can continue their cultivation,' Chaitanya Kumar Das, Deputy Director of the DAE, told thethirdpole.net. 'Considering the FFWC's forecast, we have made preparations, including relief and rehabilitation mechanisms, to tackle the natural disaster,' Abu Saleh Mohammad Ferdous Khan, Deputy Commissioner of Kurigram district administration, told thethirdpole.net.

'We get enough time to evacuate people living in low-lying areas near the rivers.' Meanwhile, in Assam, over 1.25 million people have been affected by the floods, and at least 33 already reported killed. Major highways have been disrupted, and the famed Kaziranga National Park, home of the one-horned rhinoceros, is mostly under water, with animals seeking higher ground. It is unclear why, if Bangladesh is better prepared for floods at least partially due to information shared by India, Indian states do not seem to be. In the past, the states of West Bengal and Assam have blamed lack of information from upstream riparians such as Bhutan and China. The floods are a regular catastrophe, occurring year on year with comparable amounts of people affected. And while it is argued that India and Bangladesh must work together to deal with transboundary floods, the challenges for India seem to be as much within than outside its borders.

Assam: In the world's biggest river island lies India's first carbon-neutral district

<https://yourstory.com/2017/06/assam-majuli-carbon-neutral/>

It's the world's biggest river island and the first such in India to be declared a district. Now plans are afoot to declare it the country's first carbon-neutral district by 2020. It is by no means a mean feat, but ambitious projects, with the help of locals, NGOs, and corporate houses, are getting underway to achieve this. The roadmap for the project has been developed by IORA Ecological Solutions, an environmental finance, policy, advisory, and project development group.

Mitigation through forestry and biodiversity conservation will be the starting points in this carbon-neutral agenda, followed by other interventions over the next three years. Pallav Jha, the District Commissioner of Majuli in an interview with IANS said, To begin with, we are now collecting data for preparing a carbon audit. Information on electricity consumption, emission levels by different industries, and emissions by agricultural practices like burning of crops.

Also, what is the total forested area. “At the moment, it’s the rural emissions, be they agriculture-based practices or burning of fuel, that we have to check. But we have to keep in mind the increase in vehicular pollution in the near future—when Majuli gets connected with the mainland by a national highway, as declared by the central government,” Jha told IANS. After years of poor connectivity, the central government promised a bridge connecting Majuli—Assam Chief Minister Sarbananda Sonowal’s constituency—to the mainland and is also thinking about an access-control highway along the Brahmaputra to ease traffic flow. With better connectivity, this ancient seat of Vaishnavite culture, which is already an attraction for tourists, more people and traffic are expected to pour into Majuli. This is good news for tourism and will create more job opportunities for the locals, but its impact on the environment is also being carefully considered.

The connectivity to Majuli should be completed in the next three-four years. Keeping in mind the increase in vehicular pollution and increase in carbon footprint that it will be bring along, we may impose a Green Cess on tourism, the District Commissioner said. But that is for the future. At the moment, efforts are on to make locals aware of the implications of climate change and nudge them towards adopting changes in their lives. Organic farming, for one, is being encouraged. Development of fisheries is also being encouraged. Launched by the Assam government as Sustainable Action for Climate-Resilient Development in Majuli (SACReD), this project is part of the French Development Agency-assisted Assam Project on Forest and Biodiversity Conservation to combat climate change and reduce greenhouse gas emissions. As part of efforts to check fuel emissions, the District Commissioner said that LPG connections will be given to those who lack these.

Over and above that, the District Commissioner said, public participation will be sought to raise ‘organic pockets’ for wood for fuel so that indiscriminate deforestation can be checked. Plantation drives, in any case, are already underway across the riverine island. In the absence of electricity, most people in Majuli—much like everywhere else in Assam or the rest of India—resort to the use of kerosene lamps. To address this, a 5-10 MW project by the National Hydroelectric Power Corporation (NHPC) will help electrify villages that are now bereft of power. The contribution of solar energy to light up homes in an eco-friendly way has also been taken into account. The government plans to extend this programme to other districts once Majuli succeeds in its aim.

Assam: NEC-sponsored mega fish project begins in Nalbari dist

<http://www.assamtribune.com/scripts/detailsnew.asp?id=may2617/state053>

With the financial assistance of the North East Council (NEC) under the Ministry of DoNER, the Assam Agriculture University, Jorhat is implementing a mega fish project in Nalbari district involving the poor fish farmers. The mega project to improve the livelihood of poor and ultra poor farmers through fishery-centric growth and employment intervention in Nalbari district is being implemented by Pancharatna Multipurpose Co-operative Society Ltd (PMCS), a reputed development-based society of the district. In this connection, an awareness cum input distribution programme was held at no. 2 Sagarkuchi village on May 20. The inputs, including limes, fingerlings, feeds, manure, were distributed among 200 fish farmers of Sagarkuchi, Hablakha, Nankarboira and Ghohkuchi villages. MLA of Nalbari LAC Ashok Sarma formally distributed the inputs among the farmers.

In his speech, he appreciated the approach taken by PMCS and encouraged the fish farmers to work efficiently so that the economic condition of their families in particular and the district in general, improves substantially. The Program Co-coordinator of Krishi Vigyan Kendra (KVK), Nalbari, Mridul Deka assured full technical support and training to the fish farmers so that they can increase their productivity. Mahendra Baishya, Chairman, Pancharatna Multipurpose Co-operative Society Ltd told the farmers that the society will work to build the co-operative model among the selected farmers so that their livelihood gets better. The meeting was presided over by well-known social worker of the area Kanshadhar Das.

Assam: Raid on violators of fishing ban

<http://www.assamtribune.com/scripts/detailsnew.asp?id=may1917/city051>

A team of the State fisheries department led by its Director Swapan Kumar Das, conducted a raid on violators of fishing restrictions during the breeding season in areas near the Digaru and Kolong rivers on the city outskirts on Wednesday. Ten various types of fishing nets of banned specifications, besides banned fish-catching appliances were seized during the raid. The restriction bans catching of brood fish (fish carrying eggs and sperm) during the breeding season. An awareness camp was also held at the Gowardhan market for disseminating information on the do's and don'ts during the restrictions imposed on fishing and creating mass awareness. Fishery Officer Dhrubajyoti Sarma, who held the interactive session with the villagers, said that the people's response to the department's appeal was encouraging.

“More and more people are becoming aware of the need to restrict fishing in various natural water-bodies like rivers, beels, lakes and streams during the breeding season. We explained the pros and cons of the Assam Fisheries Rules-1953 to the people, especially those whose livelihood is linked to fishing and related practices,” Sarma told The Assam Tribune. The members of the fishery department team included besides Sarma, Anushree Das, Ajar Hussain and Poziruddin Ahmed. Violations of the prohibitory orders on fishing restriction during the

breeding season have been common across the State. Conservationists are worried that unchecked catching of fish in their breeding season stands to jeopardise the fish progeny. The rule also bans catching of brood fish (fish carrying eggs and sperm) species like rohu, bahu, mrigal, mali, chital, kharia, puthi, gharia, kurhi, etc.

Assam: Regional consultation on open water fisheries development

<http://www.assamtribune.com/scripts/detailsnew.asp?id=may0817/city056>

The ICAR-Central Inland Fisheries Research Institute (ICAR-CIFRI) of Barrackpore in West Bengal organised a regional consultation on ‘Open Water Fisheries Development in the North East Region’ in the city recently. A total of 40 delegates, including scientists and researchers from ICAR-CIFRI, participated in the consultation. Dr BK Bhattacharjya, Head of ICAR-CIFRI Regional Centre, Guwahati, welcomed the participants and sought inputs from the delegates on the roadmap for open water fisheries development in the North East prepared by the institute, before publishing it. In his inaugural address, Dr BK Das, Director of ICAR-CIFRI, emphasised the need for developing open water fisheries in the region and assured of providing research support to the State Fisheries Department. He explained the background and purpose of the regional consultation and stressed the need to prepare an effective roadmap for developing open water fisheries of the region through consultation among the stakeholders. In his inaugural address, Parimal Suklabaidya, Minister of Fisheries stressed the need for making the region self-sufficient in fish production by utilising all available fishery resources.

He urged all the fisheries departments of the region to work with the common goal of achieving self-sufficiency in fish production through concerted efforts. He also highlighted the recent initiatives of the Government of Assam to bring about a Blue Revolution in the State through the ‘Ponds For All – Fish For All’ scheme launched by the Government. The technical session was chaired by Dr BK Das and co-chaired by Dr PK Pandey. Dr BK Bhattacharjya and other scientists from the Centre proposed State-specific roadmaps for open water fisheries development in the region. The updated data showed that the total fish production in the North East stood at 4,23,749 metric tonne (mt) during 2015-16 – (Assam 2,97,000 mt, Tripura 68,331 mt, Manipur 32,000 mt, Nagaland 8,220 mt, Mizoram 6,828 mt, Meghalaya 6,560 mt, Arunachal Pradesh 4,410 mt and Sikkim 400 mt). This was four per cent of the country’s total fish production and met 86 per cent fish requirement of the region (present requirement estimated at 4,82,384 mt). The presentation showed that the region has tremendous potential for enhancement of fish production from inland open waters. The potential of fish production in open water fisheries of the North East has been estimated at 1,39,846 tonnes (14,142 tonnes from rivers, 8,358 from reservoirs, 1,17,346 from wetlands, lakes and swamps).

Assam: Farmers give shape to State’s first ornamental fish village

<http://www.assamtribune.com/scripts/detailsnew.asp?id=apr2417/at055>

Every week, ornamental fish worth Rs 20 lakh is imported to Assam, mostly from Kolkata, the production of which in Assam is negligible despite the fact that some of the exotic species produced in the State are of better quality. And now a nondescript village in Nagaon's Dhing is witnessing the dawn of a 'rainbow revolution' in Assam, as a group of farmers gives shape to the State's first 'ornamental fish village'. From a humble beginning way back in 2012, as many as 52 farmers of Aathgaon village, about 23 km from Nagaon town, are now involved in breeding ornamental fish. Backed by technical support from institutions like Fishery College (Raha), Dhing College, KVK (Nagaon), State's fisheries department and National Fisheries Development Board (NFDB), the farmers are now producing around 3.5 lakh ornamental fishes of eighteen varieties and supplying them in some six districts of the State. Leader of the farmer's group, 39-year-old Partha Rathi Hazarika is a science graduate (industrial fish and fisheries) from Nowgong College.

"Around 20 years back, I had visited Kerala and had worked in some ornamental fish farms there and even in Kolkata. I was attracted to the field. I came back and started an aquarium service centre at Nagaon. This was followed by some exposure visits to places like Hyderabad under the aegis of NFDB, NABARD and Marine Products Export Development Authority (MPEDA). Soon I began breeding some ornamental fish species in twelve small tanks on the premises of my residence in Nagaon town," Hazarika told The Assam Tribune. By then Hazarika had bigger plans. In 2012, he initiated an ornamental fish farm at a plot of three-katha land at Aathgaon village. Five years on, the farm now has an aquarium house (400 sq ft), 40 concrete tanks in 2.5 katha land and another 50 terracotta tanks in the periphery. He roped in the curious villagers and one by one trained and involved 52 of them in the trade.

"Mostly they are women. They have built small ponds in their houses and are breeding the fish using traditional pisciculture techniques. Of the eighteen species we have, four are indigenous. The prices of the fish are in the range Rs 10 to Rs 300 per fish," he said, adding that though their production capacity is five lakh, they are yet to reach the target. The farmers are also making the fish feed themselves. According to fishery officials here, locally produced ornamental fish is priced about 25 per cent less than those from Kolkata. Besides, there is no transportation costs involved. The quality of some species bred here are better than those of Kolkata.

Assam: Capacity building programme on scientific fish farming held

<http://www.sentinelassam.com/state1/story.php?sec=2&subsec=2&id=304551&dtP=2017-04-09&ppr=1>

A six-day capacity building programme on scientific fish farming was held at Lahowal College recently. Organized jointly by Jeeva Suraksha, a Sibsagar based NGO working on conservation, education and employment generation in Northeast India, and ICAR-Central Institute of

Fisheries Education, Mumbai, the programme was sponsored by Mising Autonomous Council, Gogamukh, Dhemaji for the Mising community people of Dibrugarh and Sivasagar districts. With a view to exploring opportunities and providing a platform for technical support to the rural folk in order to become self-sufficient in fish production and to explore employment opportunities, the programme envisaged various subjects that covered composite fish culture, integrated farming systems, fish seed production and raising as well, ornamental fish culture and promotion of aquarium industry along with hands-on training on construction of aquarium and cage for fish farming in beel and river systems, particularly for flood-affected areas at NR hatchery, Lahowal.

A total of 46 participants were trained in two batches. The inaugural function of the programme was attended by Lohit Deka, Head Programme, All India Radio, Dibrugarh as chief guest along with Jagannath Bania, Ranjan Dutta of State Fisheries Department- Dibrugarh, Niranjana Pike, successful entrepreneur of the State. The function was chaired by JP Dutta, Principal of Lahowal College. Prof SP Biswas, Department of Life Sciences, Dibrugarh University, Ranjan Dutta, Rafique Saikia, Fisheries Extension worker, Department of Fishery, Niranjana Pike, entrepreneur, Dr Binku Dutta, Lekhanta Borah, Nipen Nayak, Dr Ranjita Bania and Lohit Deka acted as resource persons for the programme. A book on scientific fish farming written by the Course Director Dr Ranjita Bania, titled Assam Meen Palon was also inaugurated in the programme by Jagannath Bania, social worker and advisor of the society. The Principal of the college, JP Dutta chaired the inaugural programme.

Assam: Call to tap resources to enhance State's fish output

<http://www.assamtribune.com/scripts/detailsnew.asp?id=mar2217/city056>

A daylong conference on the Fisheries Mission under Chief Minister's Samagra Gramya Unnayan Yojana was held yesterday at the Assam Administrative Staff College, Khanapara. In his welcome address Principal Secretary to the Government of Assam MC Jauhari urged the officials to identify the potential resources for pisciculture activities for enhancing fish production in the State. He also stressed utilisation of the untapped resources for fish production which may help in employment generation in rural areas. Attending as resource persons, Dr Dilip Kumar, former Director of the Central Institute of Fisheries Education, Mumbai; Dr KK Tamuli, Dean of College of Fisheries, Raha; Dr BK Bhattacharjya, Principal Scientist and Head, CIFRI, Guwahati Centre; Padma Hazarika, Nodal Officer (Fishery), BTC and Tiwa Autonomous Council and Dr Ramen Barman, Nodal Officer (Fishery), Blue Revolution, highlighted the various issues relevant to development of the fisheries sector in the State.

Fishery Minister Parimal Suklabaidya attended the conference as the chief guest. In the interactive session the participants interacted with the resource persons and all were of the opinion that the Fisheries Mission under the Chief Minister's Samagra Gramya Unnayan Yojana

would help in rural employment generation and make the State self-sufficient in fish production within a short span of time. Altogether two hundred fishery officials from different parts of the State attended the programme. Director of Fisheries SK Das explained the objectives of the conference, while Dr DJ Sharma, Fishery Officer, Department of Fisheries anchored the programme, stated a press release.

Assam: Training on ornamental fish farming at Tinsukia

<http://www.sentinelassam.com/state1/story.php?sec=2&subsec=2&id=302018&dtP=2017-03-18&ppr=1>

The ICAR–Central Institute of freshwater Aquaculture, Bhubaneswar in collaboration with Jeeva Suraksha, a reputed NGO of Sivasagar, Assam working in the field of conservation, education and employment generation in North East India organised a two–day training programme on ornamental fish farming at Department of Life Sciences, Dibrugarh university on March 16 and 17. The objective of the programme is to make people aware about the lucrative business of ornamental fish farming, its trade and how the rural folk of Assam get to know about the technology of ornamental fish breeding and culture. Since Assam is the goldmine of indigenous ornamental fishes, many indigenous varieties are being exported outside the country through the exporters from all over the country, but the local people and even the suppliers do not know the price in national and international market.

Consequently, some of indigenous ornamental fishes are under the threat of extinction due to overexploitation and hence, awareness and motivation of the stakeholders is very much essential for conservation of these species. During the Inaugural function Krishnashree Das Kalita, District Fisheries Development Officer, Dibrugarh explained about different government schemes and ask support for implementation of Assam Fisheries Act in the district. Prof S.P Biswas in his inaugural talk motivated the entrepreneurs about the conservation of indigenous ornamental fish species of Assam. Dr Ranjita Bania, Fisheries biologist and Coordinator of the programme addressed the gathering and said that Assam is far behind in ornamental fish farming compared to the other states and it is almost non–existent in upper Assam. She thanked Dr J Sundaray, Director, CIFA– ICAR for the training programme at Dibrugarh and requested him for future such collaboration in the field of aquaculture in NE India.

Dr Saroj Kumar Swain, Principal Scientist ICAR–CIFA and Course Director delivered lectures on breeding and culture of indigenous and exotic ornamental fishes and also showed CIFA prepared documentary films on ornamental fish farming across the country. Likhanta Borah, an entrepreneur from Moran also shared his experience. On the 2nd day, Kripan Sarkar, a renowned entrepreneur of Siliguri shared his experience on live food culture and on farm production of aquarium fish. Dr. S.P Biswas, Professor, Dept of Life Sciences shared his experience on acclimatization and prophylactic measures needed in aquarium fish breeding. The training

programme was attended by 38 participants from Jorhat, Golaghat, Dhemaji, Nagaon, Sivasagar, Dibrugarh and Tinsukia district along with some research scholars and faculty members of Dibrugarh University. Dr Amal Bawri, Secretary, Jeeva–Suraksha and Bhadra Kumar Dutta, executive member of the NGO conducted the programme.

Assam: Fisheries dept to look after natural water bodies

<http://www.assamtribune.com/scripts/detailsnew.asp?id=mar1917/at056>

In a landmark move, the State government has decided to hand over the administrative control of all natural water bodies – beels, oxbow lakes, low lying areas, swamps, derelict water bodies, dead river courses, river tributaries and reservoirs, which were so far being settled by the Revenue & Disaster Management Department – to the Department of Fisheries. The move has been initiated for proper scientific conservation and management of the natural resources in a productive manner for sustainable development and economic development of the people in the vicinity of such natural water bodies. The State fishery department had only 141 government farms as its asset and they were primarily engaged in fish seed production and distribution. The Assam Fisheries Development Corporation has 185 beels, comprising around 10,000 hectares of land. There are around one lakh hectares of beels (430 registered and 767 unregistered) in Assam under the State revenue department.

Derelict water bodies comprise around 1,16,444 hectares of land. “Such natural bodies shall be administered by the fishery department through its directorate/district/subdivisional level officers,” a government notification stated. “It is a bold initiative of the government. It will have a major positive impact in fish production. We will have to adopt a mission mode approach. It will also generate thousands of rural livelihood opportunities,” Fisheries Director SK Das said. Nodal officer (Blue Revolution) Dr Ramen Barman said the present average fish production of these beels has been 300 kg per hectare per year and 250 kg in case of derelict water bodies. “Using a better management system, we can enhance the production up to 1,500 kg in case of beels and 3,000 kg in case of derelict water bodies,” he said. The State’s current fish production is 2.94 lakh tonnes against the demand of 3.36 lakh tonnes. The fisheries department is in the process of formulating a modality for managing these water bodies once transferred to it from the revenue department.

The department is planning to engage a technical officer with each MLA to help manage the water bodies in their respective constituencies. According to the notification, in case any such natural water body has been already leased out by the DC/SDO, the right of fishing in the water body will be retained by the lessee till the expiry of the lease period, unless he or she obstructs the developmental steps taken by the fishery department.

Assam: Bid to boost fish output in State

<http://www.assamtribune.com/scripts/detailsnew.asp?id=mar0517/at054>

Around 1,400 new ponds will be built in the State within April this year covering around 210 hectares of land which are expected to raise the fish production in the State by around 700 tonnes by next Magh Bihu. The project is part of the flagship 'Blue Revolution', under which steps have also been taken to set up 12 fish feed mills of 500 quintal capacity (per day), 10 fish seed hatchery and 75 houses for fishermen, including community halls. "It is an integrated approach to boost fish production and attain self sufficiency. We hope to put in place the infrastructure targeted for this year within April. Already 60-70 per cent of the ponds have been completed," nodal officer of State's Blue Revolution Dr Ramen Barman told The Assam Tribune. The project is funded by the Agriculture Ministry's Department of Animal Husbandry Dairying & Fisheries (DADF). An amount of Rs 16.41 crore will be spent under the various components of this project within this financial year.

The fisheries department has also decided to enforce penal provisions against those beneficiaries and officers who fail to meet the target or are involved in misuse of funds. The average size of the ponds in the private compounds is one bigha, while the community tanks will be of one hectare each. "We have earmarked Rs 7 lakh for each hectare of pond. An additional Rs 1.5 lakh will be spent on fish feed and seed per hectare of pond. By next Magh Bihu we hope to get a yield of 3,000-3,500 kg per hectare of new pond," Dr Barman added. The State's current production is 2.94 lakh tonnes against the demand of 3.36 lakh tones, and the average growth rate in fish production in the last 10 years has been 4.2 per cent. "We have now set a target of 6 per cent growth rate from this year. If things go as planned, we hope to raise the production to 3.71 lakh tonnes by 2022 against the projected demand of 3.60 lakh tonnes in that year," the nodal officer said. He said the marketing system is also being strengthened by construction of new cold storages and nine new hygienic markets. "The projects are part of a five-year plan. We expect good results by the end of five years," he added.

Assam: Political intervention stalls Centre's Blue Revolution in Lakhimpur district

<http://www.assamtribune.com/scripts/detailsnew.asp?id=mar0217/state059>

Blue Revolution, a centrally launched scheme of Integrated Development and Management of Fisheries, the Neel Kranti Mission – through potential utilisation of water resources for fisheries development in a sustainable manner – is facing trouble in Lakhimpur district following alleged political interventions. According to the guidelines of Central Sector Scheme on Blue Revolution: Integrated Development and Management of Fisheries, Government of India, Ministry of Agriculture and Farmers Welfare, Department of Animal Husbandry, Dairying and Fisheries of June, 2016, the scheme is to be implemented by State Governments/Union Territories as nodal departments with 80 per cent funding from the Centre for Northeastern and hill States.

While the State Fishery Department is the nodal agency to implement the Neel Kranti Mission in Assam, the district fishery development offices are supposed to select beneficiaries for the scheme. Named as Ghore Ghore Pukuri (fishery in every household) by the State Fishery Department, beneficiary lists are to be prepared by district fishery development offices for the Rs 70,000 per scheme, where Rs 56,000 will be in the form of subsidy and the remaining Rs 14,000 will be borne by the beneficiary. Any interested person with two bighas of land for a fishery can apply for the Neel Kranti Mission scheme in Assam. In Lakhimpur, the scheme is to be implemented in a way in which 13 beneficiaries will be selected from each of the four LAC areas of the district. But the alleged role of all the four MLAs from the district in selecting the beneficiaries for the Neel Kranti Mission in Lakhimpur district is creating problems for the fisheries development office.

As the common fishery entrepreneurs are enquiring about the criteria of beneficiaries for the scheme at the district fishery development office in North Lakhimpur, the selection of the beneficiaries by the four MLAs on political grounds are jeopardizing the ambition Central Government's plan for tapping the full potential of the inland and marine culture fisheries of the country by developing it as a professional modern world class industry, ensuring doubling of income of fishers and fish farmers of the country and ensuring sustainability of, bio-security and address environmental concerns for enabling sustainability of the fishing industry – a sunrise sector of the country. The Centre has already sanctioned Rs 16.41 crore for Assam to usher in a Blue Revolution under this Neel Kranti Mission.

Assam: Chamaria fishery body adjudged first

<http://www.assamtribune.com/scripts/detailsnew.asp?id=feb2617/city060>

The Chamaria Fishery Farmers Producers Organisation, Kamrup, secured the first position in the field of Farmers Producers Organisation by NABARD, Assam Regional Office. The organisation was promoted by an NGO North-east Welfare Development Society through the financial assistance of NABARD. The organisation got technical guidance of Dr Sanjay Sarma, Senior Executive (Technical), National Fisheries Development Board. It needs mention here that fisheries and aquaculture sectors are gaining importance at present not only because of their significance in food production sector, but also because of their value in export earnings and economic development of the country. At the same time, for the State of Assam, it is also instrumental in providing sources of livelihood for a large section of economically backward people, particularly in the rural areas.

However, there are some major constraints experienced in expanding aquaculture industry in the State including non-availability of quality fish seeds at the right time and un-organised marketing system, which fetches comparatively low price for the producers, a statement said. To address

such issues in the selected cluster areas, where large-scale fish farming is going on, NABARD has taken the initiative to form Fishery Farmers Producers Organisation through NGOs.

Assam: Fresh mapping of all Kaliabor wetlands

<http://www.assamtribune.com/scripts/detailsnew.asp?id=feb0417/state055>

With an aim to protect a number of wetlands under Kaliabor subdivision, the subdivisional administration had decided to go for fresh mapping of all the wetlands of Kaliabor subdivision. This was stated by Pankaj Chakravorty, SDO, (Civil), on Thursday at Kaliabor while observing the World Wetland Day. Chakravorty also informed this correspondent that wetlands of Kaliabor, part of which comes under Kaziranga National Park happens to be an important breeding ground for fishes. If proper conservation of these wetlands were not done in a scientific manner, then it will have an adverse affect on fish population throughout Assam. “Mapping of the wetlands are very important because this will help in creating demarcation and further checking encroachment,” said Kaliabor Civil SDO, Chakravorty, adding that mapping will be done both through satellite, having present status and at a field level in terms of social-economic condition.

If there is any encroachment at the wetlands, then those would be evicted very soon and if necessary Sec 144 would be imposed by the administration if people fail to obey rule of the land and continue fishing in the wetlands, said Chakravorty. Dr Pranab Bora from WWF India said that for the first time the World Wetland Day has been celebrated at Kaliabor and responses from the stakeholders was very encouraging. He said that conservation of wetlands is important given its necessity for the survival of avi fauna and other aquatic lives. He also added that Nagaon district has the second highest number of wetlands in the State. He explained the importance of two wetlands namely Joysagar Doloni and Muamari beel for a balance ecosystem. The meeting was attended by people from different walks of life. Resource person Parthajyoti Das outlined the importance of wetlands in context of wildlife.

Assam: Stork deaths may not be due to water toxicity: Pramila

<http://www.assamtribune.com/scripts/detailsnew.asp?id=feb0217/city051>

Minister for Environment and Forest Pramila Rani Brahma today said that the recent death of greater adjutant storks at the Deepor Beel is most likely due to consumption of poisonous water or fish at some other location and not due to food poisoning or toxicity of the waters at the wildlife sanctuary. Replying to a Zero Hour notice moved by AGP MLA Ramendra Narayan Kalita in the Legislative Assembly, Brahma said that 26 greater adjutant storks and two kites died at the Deepor Beel during the recent days. Carcasses of six greater adjutant storks have been sent for forensic tests. The minister said that no other birds, fish species or other animals have

been affected and that shows that the dead storks might have consumed poisoned substances at some other location.

Brahma said that the construction of a railway line through the wildlife sanctuary and also the presence of high power electricity lines have negative consequences for the place, which is famous for its migratory birds. She said the Government has made a plan for the beautification of the Beel for which some land acquisition will have to be carried out. She added that action has been taken against fishermen who have flouted prohibitory orders to carry out fishing in the Beel, but added that the Government is also concerned about the welfare of the local fishing community and is looking at ways to mitigate their concerns by allowing them to carry out fishing once or twice every week. Earlier, raising the issue, Kalita cited media reports to state that the Deepor Beel has been heavily polluted due to the presence of a dumping ground in its vicinity and the carriage of pollutants from the Guwahati Refinery in the Bharalu river to the wildlife sanctuary.

He said the recent death of greater adjutant storks is a cause of concern as they are an endangered species and added that despite repeated pleas, no action has been taken by the State Government and the Guwahati Metropolitan Development Authority (GMDA) to take remedial measures for conservation of the place, protection of its species and curbing pollution. He also added that local fishermen have been harassed in the name of conservation efforts and enforcement of laws and suggested that alternative arrangements should be made for them so that their livelihood is not affected. "Can there be a wildlife sanctuary in such a place?" Kalita said, citing the railway line passing through the place and the high-powered electric lines. He also cited data from the Central Pollution Control Board to stress that high content of arsenic and mercury has been found in the waters of the Deepor Beel.

Assam: Cashless transactions in Assam hamlet for over five centuries

<http://indianexpress.com/article/india/cashless-transactions-in-assam-hamlet-for-over-five-centuries-4487427/>

Cashless transactions may be the latest buzzword in the country's economic arena, but in a small hamlet about 32 km from Guwahati, members of Assam's Tiwa tribe meet every year to carry out an unique trade fair where the dealings are totally cashless. The system of barter trade has been kept alive for more than five centuries by the Tiwas, a tribe of Central Assam and neighbouring Meghalaya, who hold the three-day annual fair in the third week of January in Assam's Morigaon district. Popularly known as the 'Junbeel' Mela, meaning moon (Jun) and wetland (beel), as the fair is held beside a large natural water body shaped like a crescent moon. Assam Chief Minister Sarbananda Sonowal, who attended the just concluded fair, said people have a lot to learn from these practices of the Tiwas which exemplify the cashless tenets of the modern day society.

He also announced that a permanent plot of land for the fair would be allotted so that the historic event can continue to thrive in the future and tourism receives a boost to benefit the local people. “On the occasion of the mela, a big market is held here where these tribes exchange their products in barter system which is perhaps the only such instance in the country,” secretary of Junbeel Mela Development Samiti, Jur Sing Bordoloi said. A few days before the fair, members of Tiwa, Karbi, Khasi and Jaintia tribes come down from the neighbouring hills with various products. The products usually traded during the fair include ginger, bamboo shoots, turmeric, pumpkin, medicinal herbs, dried fish and ‘pithas’ (rice cakes). The fair is declared open by the ceremonial ‘Tiwa’ king Deep Sing Deoraja, (also called Gova Raja as the ancient kingdom of the Tiwas was known as Gova) who along with his ‘courtiers’ participates in a community feast and then collect a customary tax from his subjects.

Bordoloi pointed out that the significant part of the fair was its theme of harmony and brotherhood among various tribes and communities and they also perform their traditional dance and music to celebrate it. As per tradition, community fishing is held on the second day of the fair and people from all walks of life participate in it with great enthusiasm. “I have been coming here and taking part in the barter trade since my childhood. This is a very old custom of ours and is the most important event of the mela though we also enjoy the fishing, singing and dancing,” said 60-year-old Raja Bordoloi, who emptied his stock of dried fish in exchange for ginger and medicinal herbs. The fair, which has been dated to 15th century by historians, begins with an ‘Agni Puja’ (an obeisance to the fire god) for the well-being of humanity.

The erstwhile Congress government in the state, in its bid to promote this unique fair, had announced an ‘Annual Royal Allowance’ for the 19 customary kings from different communities under the Gova kingdom, which include parts of three districts of Assam — Morigaon, Nagaon and Kamrup. “The step taken by the Assam government is indeed welcome and we had been demanding it for long as the economic conditions of all these customary kings is going down. We also urge the government for more assistance to hold the traditional fair which is unique in today’s world,” Deoraja said. Sonowal handed out cheques of royal subsistence grant to Gova King Deep Sing Deoraja and other 17 ceremonial kings of Tiwa Kingdom and announced that the payment of these grants would be regularised from now onwards.

Assam: Fresh fish at the click of the mouse soon

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jan1317/city051>

Soon, you will be able to get your favourite fish, whether local or imported, at the click of the mouse. Assam Apex Cooperative Fish Marketing and Processing Federation Limited (Fishfed) will launch an online purchase platform this financial year through which consumers can place their fish orders online. “We are in the process of building an integrated communication technology. We should be ready within this fiscal,” Fishfed Managing Director Ghana Pegu told

The Assam Tribune. Initially, Fishfed would provide the facility to consumers of greater Guwahati area and later, depending on the viability, expand the area of operation. “Our men will take the orders to the customers’ doorsteps. Initially, we will not accept online payment, Customers will have to pay cash on delivery or through the card swiping machines the delivery men will carry,” Pegu said. Besides, fresh local ones and dressed fish, rare fishes will also be made available online.

“We will also take bulk orders, say for marriages and other functions. But these orders will have to be placed in advance,” the MD said. Meanwhile, in view of the Bhogali Bihu, Fishfed has opened seven outlets – at its office at Rupnagar, Wireless, Chandmari, Noonmati, Kahilipara, Ulubari and Maligaon, to sell fish in Guwahati. The live local sitol fish – available in various sizes - have been priced at Rs 650 per kg, while imported katla, some even weighing up to 7/8 kgs, are being sold at Rs 230 per kg and rohu at Rs 160. “We have procured two quintals of live sitol and another 1,400 kg of different variety of fish for this Bihu. People can buy the fish till Friday noon at these points. Most of the local fish has been procured from Barpeta,” the MD said. Fishfed official Arup Jyoti Patgiri said last year Fishfed had procured some 50,000 kgs of fish from its societies in the State for marketing. There are 256 registered societies under Fishfed, with a farmer base of around 23,000 spread across the State.

Assam: Darrang fish mahal reaps profits by supplying local varieties

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jan1317/state055>

Preparations for the celebration of Bhogali Bihu are in full swing on the eve of Uruka today. The community feast on the night of Uruka under the bhela ghar is always considered to be of special significance. And the community Uruka feast is not complete without the local fish dishes. At a time when fish is being imported from States like Andhra Pradesh, Uttar Pradesh, etc., local fishes are always at a premium, especially for the lower income groups. But there is some good news. Management committees of some community fisheries like the Suri Pukhuri Meen Mahal Committee and Lakhimpur Anchalik Meen Mahal Committee near Balipota village under the Kalaigaon Development Block in Darrang district have been contributing to the local fish varieties amid the huge demand of local fishes for Uruka. “The demand for fish produced in Suri Pukhuri Meen Mahal, covering a land area of above 20 bighas, is on the rise as most local varieties of fish like chital, rohu, bhakua, silver carp, common carp, etc., are bred under completely natural conditions without the use of chemicals,” said Gajen Sarma, president of Suri Pukhuri Meen Mahal Committee.

“Moreover, we fix the rates in consideration of the purchasing power of rural consumers, which are 20 to 30 per cent less per kilogram in comparison to the prices prevailing in the retail market ahead of Uruka,” he maintained. Sarma said that last year in the Uruka markets in Guwahati, Mangaldai, Tangla and Kharupetia, besides his native village, the Mahal supplied about 60

quintals from which they managed to earn a net profit of around Rs 10 lakh. “This year we have already sent nearly 50 quintals of fish to Guwahati and Mangaldai and expect another 20 quintals for supply on Friday morning. We hope to increase our net profit to Rs 15 lakh,” Sarma added.

Apart from Suri Pukhuri, Lakhimpur Anchalik Meen Mahal, which consists of an area covering around 100 bighas of land, is also a major supplier of local fish in the Uruka market. However, this year’s yield of the fishery in terms of size and volume has not been satisfactory after the death of nearly 40 quintals of fish due to environmental reasons some months back, a source of the fishery management committee. Meanwhile, the Darrang District Fishery Development Department has estimated a demand of approximately 40 tons of local fish on Friday in comparison to that of 36 tons last year. Apart from these two community fisheries, the Fish Production Organisation of Dighirpar and fish farmers of Janaramchowka village are also ready to supply local fish in the Uruka market, a source added.

Assam: Police crack down on fishing in Deepor Beel

<http://timesofindia.indiatimes.com/city/guwahati/police-crack-down-on-fishing-in-deepor-beel/articleshow/56366387.cms>

Police have prohibited the assembly of more than five persons in and around the Deepor Beel Wildlife Sanctuary to prevent community fishing during Magh Bihu. "The order shall remain in force till January 31. Any person aggrieved by the order is at liberty to appear before Guwahati West police district to file a written objection," police said. The order after the forest department informed the authorities that people from villages around Deepor Beel were likely to fish in the water body during Magh Bihu in violation of the provisions of the Wildlife (Protection) Act, 1972.

Assam: Fishery implements distributed among beneficiaries

<http://www.sentinelassam.com/cachar/story.php?sec=2&subsec=12&id=293887&dtP=2017-01-04&ppr=1>

Karimganj MP Radheshyam Biswas urged upon the fishermen of Matijuri Paikan to make use of the implements given away by the government to raise production to ameliorate their economic condition. Speaking at a distribution function organized by the District Fishery at its office complex, MP Biswas said the farmers must make proper use of the implements to raise their standard of living, stated a press release. “I urge upon the beneficiaries to make optimum use of the implements provided by the administration to raise production as well as their income for a better life,” he said. Biswas cautioned them not to sell-off the implements for one-time gain but to make proper use for long term gains. “If you sell-off the implements, you will earn only once. But if you make proper use of the implements, you will continue to make regular profits out of it,” he said.

Deputy Commissioner Moloy Bora, too urged upon the farmers to pitch in their efforts to make Matijuri Paikan an economically vibrant and resilient model village under Sansad Adarsh Gram Yojana (SAGY). Bora appealed to the beneficiaries to make use of the implements to supplement their income and not to fall prey to the evil machinations of vested circles by ‘selling off’ (the implements) for petty gains. MLA of Hailakandi, Anowar Hussain Laskar exhorted upon the beneficiaries to make optimum use of the implements to get regular flow of income. Laskar assured the farming community that they would get all the facilities once Matijuri Paikan comes up as a model village under Sansad Adarsh Gram Yojana. MP Radheshyam Biswas and Deputy Commissioner Moloy Bora gave away bicycles fitted with containers, cast and drag nets to some of the beneficiaries in the presence of the MLA Hailakandi and fishery officials. Altogether 17 beneficiaries got bicycles with containers, 26 cast nets and 10 drag nets

Assam: Bid to develop ornamental fisheries in NE

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jan0317/city050>

The National Fisheries Development Board (NFDB), an autonomous body under the Ministry of Agriculture, Government of India, is keen to develop ornamental fisheries in the Northeast, including Assam. Ornamental fishes, also known as ‘living jewels’, have been attracting the unemployed youths in the State to try out other option of livelihood. It needs to be mentioned that exotic ornamental fishes have seen a rise in domestic demand, while the indigenous variety is becoming popular abroad. Of the available 267 fish species in the region, about 50 have attracted international attention, an official in the Fisheries Department stated.

“The main advantages for trade in exotic ornamental fish include – they require less space, the same water can be used for several times, and the technology is easy to use,” said the official, adding that the domestic demand for aquarium and ornamental fishes is about 20 lakh per month in the State, and nearly 50 per cent of them are produced in the State. Considering the potential of this sector, the NFDB has already sponsored two national workshops on ornamental fisheries at the Gauhati University and St Anthony’s college, Shillong. The NFDB Regional Centre, Guwahati, also organised a three days’ training programme on ornamental fisheries in collaboration with ICAR-CIRI, which was attended by a total of 52 participants from different parts of this region.

Assam: Stress on systematic, scientific fish farming

<http://www.assamtribune.com/scripts/detailsnew.asp?id=dec2716/city056>

A workshop on the theme ‘Fish Feed Formulation, Preparation and its Importance in Northeast India’ was organised recently by the National Fisheries Development Board (NFDB) in collaboration with ICAR-Central Institute of Freshwater Aquaculture (CIFA) and ICAR-Central Inland Fisheries Research Institute (CIFRI) at ICAR-CIFRI, Regional Centre here, stated a press

release today. Altogether 35 entrepreneurs from the North East took part in the programme. The workshop was inaugurated by Fisheries Minister Parimal Suklabaidya, who was also the chief guest of the function.

In his inaugural address, he emphasised the need for systematic and scientific fish farming to ensure a good source of livelihood for fish farmers' families. He laid stress on supplement feed in the fish farming system for better return. Dr Sanjay Sarma, Officer in Charge, NFDB Regional Centre, Guwahati gave the welcome address. SK Das, State Director of Fisheries, who was present in the inaugural session as a special guest, highlighted the need for setting up a fish feed industry in the region to promote growth of the fishery sector in the State and the country as a whole. Dr KN Mahanta, Principal Scientist and Head, Nutrition Department, ICAR-CIFA, highlighted the production potential of aquaculture in India and importance of use of fish feed in aquaculture. He talked in detail about the use of locally available alternative protein sources for minimising fish feed cost. He encouraged the participants to resort to better fish feeding techniques for increasing fish production.

Other resource persons, including Dr KC Das, Dr SC Rath, Dr BK Bhattacharjya and Dr Dandadhar Sarma, also highlighted different aspects of fish feed production and management specially suitable for the north-eastern region. At the plenary session, apart from the resource persons, Dr Dilip Kumar, ex-vice chancellor of CIFE, Mumbai and Dr RS Biradar, ex-joint director, CIFE, Mumbai also interacted with the participants. They were of the opinion that the four points needed to be remembered for fish feed industry in the region were, awareness about use of fish feed, farm-made feed concept for small and marginal farmers, assessment of feed demand and supply and commercial feed production.

Assam: Assam imports fish from other states despite huge potential

http://www.business-standard.com/article/pti-stories/assam-imports-fish-from-other-states-despite-huge-potential-116112200888_1.html

Assam imports fish from other states like Andhra Pradesh despite having huge potential for fish farming, Parliament was informed today. The state imported 14,835 tonnes in 2015-16, higher than 12,531 tonnes in the year-ago period. "Assam imports fish from other states though the state has huge potential for fish farming in water resources such as ponds, tanks, beel, oxbow lake, swamps, low lying (areas) and reservoirs," Minister of State for Agriculture Sudarshan Bhagat said in a written reply to the Lok Sabha. During the last three years, Assam has imported fish, mainly from Andhra Pradesh, Uttar Pradesh and West Bengal, he said. To a query whether the Centre has formulated any special scheme to promote fish farming in the state, Bhagat said the the Centre has restructured the existing schemes under the umbrella of central plan scheme called 'Blue Revolution: Integrated Development and Management of Fisheries'.

The scheme focuses mainly on increasing fisheries production and productivity from aquaculture and fisheries resources. Besides, the state government is implementing schemes for development of fisheries, he added. To promote fishery sector, the minister said the Centre is providing financial assistance to coastal states for setting up of fishing harbours based on the techno-economic feasibility reports. Many states namely Maharashtra, Karnataka, Gujarat, Tamil Nadu, Andhra Pradesh and West Bengal have shown interest, he said replying to a separate query. That apart, the central share for fishermen under the saving-cum-relief scheme has been enhanced to Rs 1,500 per fisherman, from Rs 900, effective this financial year.

Assam: Breeding and trading of ornamental fish – a profitable venture

<http://www.sentinelassam.com/state1/story.php?sec=2&subsec=2&id=287562&dtP=2016-11-11&ppr=1>

To promote entrepreneurial competencies and for enthusing new generation business ideas among students, the UGC-Deen Dayal Upadhyaya Kaushal Kendra has set up an Ornamental Fish Breeding Centre in its campus at Tengakhat College. Attending the meeting as a chief guest, the national secretary of Yuva Vikas Society (YVS), a premier NGO of New Delhi, Ashish Vilas Bhave, who works in the Youth Development Sector, inaugurated the newly-built aquariums for fish breeding in Aqua World. Gracing the inaugural event, the Principal of Tengakhat College and Director in-charge of UGC-DDU KK, Dr Kiran Hazarika in his deliberation elaborated on the various youth development activities being undertaken in the entire country. Breeding and trading of ornamental fish is the latest profit-making venture for many youths in the country. Bright colours, contrasting stripes and spots, they come in all colours, designs and sizes, swimming with a lazy countenance in placid aquamarine waters. Aquariums with ornamental fish lend a sense of serenity and beauty to the space they occupy and are popular in all metro cities.

The Red Cap, Black Gold Fish, Bubble Eye Gold Fish, Angel Fish, Fighter, Guppy, Sharks and many others that adorn the living rooms or star hotels are actually bred and nurtured in large quantities in rural areas. By taking the advantage of good climate and availability of required resources at a cheap rate, in future the project may be expanded to house-to-house level in Tengakhat for the benefit of unemployed youths and housewives by DDUKK. There is lack of knowledge about the breeding business of ornamental fish in Assam in comparison to the ornamental fish activities carried out in the States of West Bengal, Maharashtra, Karnataka, Tamil Nadu and Kerala, where a few number of people initiated the activity of ornamental fish breeding. Most of the ornamental fish activities are concentrated in five States of India -West Bengal, Maharashtra, Karnataka, Tamil Nadu and Kerala. Initially a handful of people started breeding ornamental fish in these States, with most of them having good business in this sector. The demand for ornamental fish and skilled aquarium designers are increasing in the State as there is no such organized business on ornamental fish breeding.

To fill the vacuum, some students of B.Voc under UGC Deen Dayal Upadhaya Kaushal Kendra, Tengakhat College, after analyzing the demand supply gap, formed a group named 'Aqua World' in the college for ornamental fish breeding and for its trading. In this context, the coordinator of the project, Radheesh Gopalan, by elaborating the aims and objectives in his speech, said that at first the Centre would start its business with Red Cap, Bubble Eye, Gold Fish, Black Gold Fish, Siamese Fighter Fish, Angel and Guppy and as per demand in the coming days, they would breed some more varieties of ornamental fish here.

Assam: Erosion takes grim turn in Morigaon district

<http://www.assamtribune.com/scripts/detailsnew.asp?id=oct2916/state056>

The Brahmaputra's erosion in riverine areas under Lahorighat revenue circle in Morigaon district has taken a grim turn in the last few days rendering 40 families homeless in Kathoni village, official sources said. The affected homeless people took shelter on dyke and nearby highlands. Though the water level of the Brahmaputra is down, yet the devastating erosion of the mighty river is going on in several parts of the dyke of the river in Lahorighat and Bhuragaon revenue circles under Morigaon district. The Kathoni village and its surrounding areas were affected due to the erosion forcing the villagers to go nearby areas. In the area, one high school, one health centre, one panchyat office are on the verge of going into the bosom of the river.

The catastrophe caused by the Brahmaputra during this year's monsoon has led the rural economy of Bhuragaon and Lahorighat to a moribund state. All crops and vegetable fields were devastated. The flood and erosion affected the agriculture sector besides damaging fisheries and animal husbandry. The road communication systems in rural areas of Lahorighat and Bhuragaon were completely damaged. The additional dyke constructed in between Bhuragaon and Baralimari at the cost of Rs 5 crore by the Rural Development Department was breached during the last flood in the month of August. Now the river may again cause devastation in between Bhuragaon and Mayong as there is no erosion-protective measure in the 27- sq km area along the bank of the Brahmaputra.

Assam: Swachhta Pakwada campaign

<http://www.assamtribune.com/scripts/detailsnew.asp?id=nov0116/city057>

As part of the Government of India's Swachhta Pakwada campaign, the State Department of Fisheries, in association with the National Fisheries Development Board (NFDB) organised a workshop today on hygienic fish handling in the conference hall of the Directorate of Fisheries. In his welcome speech, SK Das, Director of Fisheries laid stress on achieving the desired goal of the fishery sector in the State. Jurie Deka Thakur, Joint Secretary to the Government of Assam, Fishery Department inaugurated the workshop, which was attended by scientists, researchers, administrators and a large number of fish farmers and fish traders. She hoped programmes like

this would help the fishery sector in the coming days. Dr BK Bhattacharjee, head, Central Inland Fisheries Research Institute, NE region and Dr Sanjay Sarma, officer in-charge, NFDB, Regional Centre among others were present as guests of honour. Dr Sarma hoped that such programmes would strengthen the fishery sector and assured of every possible help from the NFDB. Dr Bhattacharjee shared his ideas about how to handle fish hygienically in a scientific manner.

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 can not 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.

Assam: Bhutan blamed for devastation in Manas National Park

<http://www.assamtimes.org/node/17857>

The Manas National Park and Tiger Reserve suffered huge loss as flood waters of river Beki inundated 60 per cent of the Park since the last four days. Floodwaters entered the Park breaching the embankment at Panchmile under the Bansbari Range and submerged large areas of

National Park on Wednesday night. The release of waters from the Kurichu dam by Bhutan has been attributed to the untimely disaster. "The waters have receded now but have left a trail of devastation. The flood breached the embankment at three sites making the Park all the more vulnerable, besides damaging most of the roads making movement almost impossible," Dharanidhar Boro, deputy director of the Park said. "The bridge at Lata jhar was washed away cutting off road communication to Bhutan.

The picturesque Mathanguri, main attraction for tourists, remains cut off as the road to Mathanguri was also washed away. Many animals took shelter on narrow strips of highlands. However, there were no reports of animal casualties. The forest beat camps in the Park--- Bispaani, Burha-burijhar, Latajhar, Kuribeel, Bhatgali, Kahibari, Katajhar were reeling under 5/6 ft of flood water.," Boro added. Manas National Park was opened for tourists on October 1 but authorities are now seriously thinking of limiting tourist access to the Park. Tourism in Manas suffered a setback during the 90s due to insurgent activities. Since the last 10 years Manas has been gearing up to make up for the loss of those years. The Park has also seen an increase in the number of footfalls since the last few years. But with the opening of the gates this 'season', the Park suffered a severe jolt. Tour operators fear another season to go waste as reconstruction and repair of roads will take time.

Agriculture, fishery affected Authorities of Barpeta and Baksa districts said there was no prior warning by Bhutan about the release of water, which flooded the Manas and Beki rivers, inundating large tracts of cultivation in these two districts affecting more than 24,000 people. Dhruva Nath, a local youth, lamented that this sudden surge has washed away the dreams of many like him who were engaged in pisciculture. Fisheries in many villages—Gyatigaon, Raghabeel, Chunbari, Kaalpani and Narayanguri received a setback as the gushing waters Beki and Manas devastated the ponds and tanks in the districts bordering the Himalayan nation. A State Disaster Management Authority official said that 12 villages in Kalgachia revenue circle in Barpeta district were inundated by the sudden rise in water level in the Beki river. Beki and Manas are the two principal tributaries of the Brahmaputra in lower Assam. Earlier instances Although there is an agreement between India and Bhutan to share information on the release of water from the Kurichu dam, Bhutan allegedly continues to release water from the dam without sharing the information with the Indian (Assam) authorities.

There are instances when unannounced release of water Kurichu dam by Bhutan jeopardized the lives of thousands of people downstream. The sudden surge of water released on Wednesday once again caught Assam authorities off-guard. It so happens that during incessant rains, waters from the dam is released flow down to Assam. In July this year, there was a sudden rise in the water levels of the Beki river that washed away a part of the embankment at Panchmile, inundating the entire Manas National Park. In June 2010, hundreds of villages in the two districts of Barpeta and Baska were severely affected. Huge loss and devastation in the floods of 2007 were also attributed to Bhutan. In 2004, Barpeta and Nalbari districts were flooded suddenly. It

was reported later that an artificial lake on the upstream of Kurichu dam burst that was located north of the international border shared by Assam.

The Kurichu continues to be a nightmare downstream, having created havoc at regular intervals. In the last 10 years, over one lakh families were rendered homeless while more than 60 thousand hectares of farmland were devastated in the downstream districts of Baksa, Barpeta and Nalbari as estimated by the Assam Disaster Management Authority. Downstream concerns The Manas River (Drangme Chhu in Bhutan) is a transboundary river in the Himalayan foothills between southern Bhutan and India. It is the largest river system of Bhutan. The DrangmeChu, also the largest drainage in Bhutan with area of nearly 18, 300 square kilometers, connects the Bhutanese Himalaya and the Indian subcontinent. Bhutan decided to build a hydropower dam over the KuriChu and DrangmeChu to cope with the increasing demand of power in Bhutan. The Himalayan kingdom now earns more than 50 per cent of its revenue from its sale of hydro electricity. Interestingly, the Indian government has aided Bhutan in all its major hydel projects, including Kurichu.

The government of India invested 560 crore in Kurichu Given the complexities involved in the exercise of the extracting electricity through large dams and the haste in which the projects are pushed through without addressing the genuine concerns such as downstream impacts in the form of floods, sedimentation, deposition of sand and morain, loss of biodiversity and livelihood of people, seismic vulnerability etc, the situation definitely calls for a resentment of the Central Government's hydropower policy for the north-east Indian region, specially Assam. The state is already a victim of dam-induced floods several times in the recent past. Further, the threat of Kurichu looms large on pristine wildlife habitats like Manas—a world heritage site, an elephant project, a tiger project and a biosphere reserve. Situated on the western flanks of Assam, Manas National Park is one of the most vibrant forest ecosystems in India. Situated on the foothills of the eastern Himalayas, brushing the Bhutan border, this pristine and primordial wilderness reserve is a treasure trove of bio diversity.

Chandan Kumar Duarah of Centre for Conservation, Education and Research (CCER), voiced the concern of the downstream people. “the situation prevailing in Manas is likely to happen in wildlife habitats of upper Assam when hydro electric power projects are commissioned in Tibet and Arunachal. Happy Bhutan has been unleashing unhappiness in the form of water to the people of Assam for years without informing concerned authorities. While the Union Government and stakeholders are opposing Chinese dams on the Himalayan rivers flowing into India, our government is not concerned over dams built by Bhutan over trans boundary rivers. On the other hand, the Union government is patronizing hydro projects upstream in complete disregard to the interests of the people of Assam downstream.”

Assam: Move for self-sufficiency in fish production

<http://www.assamtribune.com/scripts/detailsnew.asp?id=sep2216/city053>

The ICAR- Central Inland Fisheries Research Institute, Guwahati Regional Centre organised an interactive workshop, “Aquatic Animal Diseases in Assam” under the National Surveillance Programme on Aquatic Animal Diseases (NSPAAD) on Tuesday. A total of 77 individuals, including fish farmers, government officials from 17 districts of Assam and other officials took part in the workshop. Dr BK Das, Director, ICAR-CIFRI, welcomed the participants and emphasised developing fisheries in the NE region with assurance of technical support and co-operation from the institute. He outlined the activities carried out by the institute in the State. Dr AK Sahu, DBT visiting professor and former head of aquaculture production, ICAR- CIFA, emphasised water fisheries development in the NE region. MC Jauhari, Principal Secretary Fisheries, Government of Assam, outlined the steps initiated by the State Department of Fisheries for attaining self-sufficiency in fish production. He stated that at present the State is producing 2.94 lakh tonnes against a demand of 3.25 lakh tonnes, thereby reducing the gap to 42,000 tonnes. “The department has launched an ambitious scheme ‘Ghare ghare pukhuri, ghare ghare machh’ for increasing area covered under pond aquaculture in 25,000 villages of the State,” he revealed.

He requested the Director, ICAR-CIFRI, Barrackpore, to provide technical support for fish disease management to the department by entering into an MoU. The Principal Secretary also released the workshop manual. The technical session which followed, enlightened the farmers on various topics as chemotherapy and aquaculture medicine, breeding of magur and larval rearing, prevailing fish diseases in Assam and best management practices in aquaculture. Dr BK Das, Dr AK Sahu, Dr BP Mohanty, Dr BK Behera, Dr AK Sahoo, Dr KK Tamuli and Dr B Kalita acted as resource persons at the workshop. State Minister of Fisheries Parimal Suklabaidya and Bimal Borah, MLA, Tingkhong constituency, attended the valedictory session of the workshop. Addressing the gathering Suklabaidya emphasised making Assam self-sufficient in fish production. He reiterated the need and importance of controlling fish disease to reduce economic losses. He also highlighted the recent initiatives of the Government of Assam to bring about a blue revolution in the State and improve export of fish from the State.

Assam: Angling fest in Nagaon from Oct 1

<http://www.assamtribune.com/scripts/detailsnew.asp?id=sep1616/state052>

An angling festival and a workshop on recreational fisheries and eco-tourism in North East India will be held in Nagaon from October 1. The two-day programme is being organised by the Jasingfa fish-based eco-tourism centre in collaboration with the ICAR-Directorate of Coldwater Fisheries Research, Bhimtal, and the Coldwater Fisheries Society of India. It may be mentioned here that Jasingfa is the first fish-based eco-tourism centre of the State and is situated at Dimoruguri, Nagaon. This centre has been attracting a sizeable number of foreign tourists

besides domestic tourists. Internationally noted scientists, policy makers, anglers, environmentalists, researchers, tourism experts and government officials will attend the workshop. A special programme with school students on conservation and angling will also feature during the event.

Assam: Lightning kills four fishermen

<http://thenortheasttoday.com/assam-lightning-kills-four-fishermen/>

In a tragic incident, four fishermen died after being struck by lightning on Dandua Beel (pond) in Morigaon district of the state on Tuesday. Three others who were also fishermen, were critically injured. Chief minister Sarbananda Sonowal expressed grief over the deaths and announced Rs four lakh ex gratia for the kin of the deceased. He also announced Rs 60,000 for the injured. Sonowal also directed the deputy commissioner of Morigaon to make arrangements for the treatment of the injured in a proper manner.

Assam: Brahmaputra leaves a desert behind

<http://indiaclimatedialogue.net/2016/08/16/brahmaputra-leaves-desert-behind/>

In a village about 20 kilometres from Lakhimpur – the main town on the north bank of the Brahmaputra in Assam – Kushal Das stands on the road and strains his eyes to locate dry patches in his farmland. All he sees is muck and water. Although there has been some respite from the constant rains, and the floodwaters have started receding, the farmer knows better than to smile in relief. “The river has taken away my land’s fertility,” he says, unsure of what the future holds. Das is not alone in his predicament. As floodwaters of the Brahmaputra start receding – at least for now – the farmers are not celebrating. Instead, they are staring at what the waters have left behind – more sand than silt. Their farmlands are now infertile. “Aagote enekua naasil (It wasn’t always like this),” says Lakhi Gogoi, another farmer in Lakhimpur. “Earlier, after the floodwaters receded, we could still plant our paddy, we could still hope for a decent harvest. But in the last few years things have changed.

The soil left behind is very sandy and coarse, unfit to grow paddy.” With the South Asia summer monsoon barely halfway, Assam has already had three floods this year. At least 49 people were killed and 4.1 million affected, Pallab Lochan Das, minister of state for disaster management, told legislators last week. Of the 35 districts in the state, 29 are flood-hit. The minister said 41,426 hectares of cropland had suffered “massive damages”. The Kaziranga National Park was among the worst-hit. Nearly 80% of it was inundated; animals were killed or swept away. See: From drought to floods in 45 days. Floods damage, but they also used to bring a boon. For millennia, the annual flooding of rivers that flow down from the Himalayas – especially the Brahmaputra – has replenished the soil of South Asia, South East Asia and East Asia with silt.

This material – in size the particles are somewhere between clay and sand – is largely mineral-rich rocks from the Himalayas that the flowing river waters have broken down into granules.

The deltas of Asia – of the Indus, Ganga, Brahmaputra, Irrawaddy, Salween, Chao Phraya, Mekong, Yangtze or Yellow rivers – are essentially made up of silt that the floodwaters left behind when they receded. This regular replenishment of silt has maintained soil fertility in this intensely farmed continent. But the Brahmaputra has not been doing this for the past few years, in Assam or downstream in Bangladesh. “The river’s waters have started leaving behind more sand than silt,” Partha Jyoti Das, head of the Water, Climate and Hazards Programme of the Guwahati-based think tank Aaranyak, told indiaclimatedialogue.net. Effect of climate change There are various reasons for this change of behaviour, he said. Climate change is one of them. “It has always rained a lot during monsoons, and floods have always happened in Assam. But over the last few years, the intensity of rain has increased. So now you have heavy spells of rains over a handful of days instead of a stretched-out period, resulting in flash floods. This is because of climate change.” When it rains hard, the water flows down the hills faster – from Bhutan and Arunachal Pradesh to the Assam valley. It also dissipates with more force. Scientists have measured that major tributaries of the Brahmaputra, such as Ronga Nodi and Hingora, have faster water flows than before.

“The cumulative effect of this micro seismic activity or vibration that takes place every day, combined with the monsoon, makes the Himalayan hills erode more easily,” Das explained. “This sediment goes to the river channels. Then again, with more development activities taking place in the hills, there is more digging of the soil for building dams, roads and factories. This sediment again goes to the rivers.” “As a result of all this, the river gets laden with an abnormally large quantity of sediment. Now, normally, the river would break all this down into tiny particles, which is silt. But now the sediment load is too high. So much of the sediment remains as large coarse particles, which ultimately gets left behind in the fields when the floodwaters recede.” Effect of dams Some experts blame the building of a spate of dams on the Brahmaputra — more specifically, the run-of-the-river projects — for the change in the composition of what the floodwaters carry.

In a run-of-the-river project, a dam is built in the river and the water diverted to a tunnel. The silt-laden water is first taken to a settling tank, where the silt settles at the bottom so that it does not damage the turbine blades when the water turns the blades to generate electricity. The silt-free water is then led back to the river. Policymakers who approve these hydroelectricity projects know the importance of silt downstream, so they have ensured the silt gets back to the river through an exit at the bottom of the settling tank. The trouble is, this silt then accumulates behind the dam wall, where there is not enough water flow to carry it along. Most of the water is led back to the river up to 10 kms downstream, after it has done its job of turning the turbine blades. See: Brahmaputra dams hold back silt, not water. But Partha Jyoti Das is not sure to what extent the dams are responsible for the deposition of sand rather than silt. He points out that the dams

are a “fairly recent” phenomenon, while the silt-to-sand change by the Brahmaputra has been gaining momentum over the last two decades.

Effect of embankments Himanshu Thakkar, coordinator of the South Asia Network on Dams, Rivers and People (SANDRP), has another explanation. He blames the embankments that line the Brahmaputra to protect people from floods. “Where there are embankments, sand (from the river water) accumulates while the silt flows downstream. Embankments provide temporary flood protection, and, as seen in several cases, they are then breached. The breach starts with a hole in the embankment and water flows through it, taking along the sand that has accumulated. This is also called sand casting,” Thakkar said. Comparing the situation with other places in India and with other rivers, he added, “I have seen similar cases of sand casting in Gorakhpur (Uttar Pradesh) in the early part of this millennium. It has happened in the Koshi flood plain.” Das, the scientist from Aaranyak, agreed, and added that the concrete embankments hold back sediments till they breach, and then everything mixes with the floodwaters. “Since this sediment has more sand than silt, it is sand that gets deposited in the farms,” he said.

“In some areas on the north bank of the Brahmaputra, the river is taking away the top fertile layer of soil, and started leaving behind five-six feet of sand. It will take at least five years, may be even seven or eight years, to reclaim this soil. Until then nothing will grow on it,” Das said. “There are places like Jiadhhol in Sonitpur district where the river has left behind 10 feet of sand.” Adaptation through new crops Where there is an appreciable amount of silt mixed with the sand, traditional rice farmers are now growing other crops on the advice of experts – watermelons, peanuts, kidney beans, sugarcane. Akhil Sharma, a local farmer activist, however feels that these measures are not enough. “Even when he is growing watermelons, a farmer here keeps hoping that very soon his land will be fertile enough for rice, which he will harvest in quantities large enough to both sell and consume for the whole year. And where the soil has become too sandy, the farmer can grow nothing. Until special measures for soil reclamation are introduced, the farmers are staring into an uncertain future.” Experts also say that there is an urgent need for a scientific study of this phenomenon.

Assam: Kokrajhar latest dist to go under water

<http://timesofindia.indiatimes.com/city/guwahati/Kokrajhar-latest-dist-to-go-under-water/articleshow/53330998.cms>

The flood situation in Assam continued to be desperate on Thursday with 1.80 lakh people affected across seven districts. Kokrajhar became the latest district to be inundated. According to the Assam State Disaster Management Authority, there was no let-up in the rise of water level of the Brahmaputra and its tributaries on Thursday. The Brahmaputra, which originates in the Tibetan plateau, continued to flow above the danger mark at Nematighat in Jorhat, Tezpur in Sonitpur and in Dhubri on Thursday. Tributaries of the river like Dhansiri, Jia Bharali,

Puthimari, Beki and Sankosh also flowed in spate. Almost 19,000 hectares of agricultural land remained inundated on Thursday and some new areas, too, went under water. The situation in Golaghat and Jorhat in upper Assam turned grave on Thursday with over 60,000 and 50,000 people affected in the two districts, respectively.

The floods have spelt disaster for areas like Malowpathar, a major fish production hub of the state about 8 km from Jorhat city. The fisheries of Malowpathar provide employment to hundreds of youths in the district which has over 6,000 fish ponds and tanks spread across 1,177 hectares. Many of these fish ponds have suffered during the second wave of floods in the state. "The floods have dealt a devastating blow to fisheries. All the ponds in our locality are under water. Many families had invested money in the fisheries but they have lost their fishes and funds. I don't know how this sector will be revived," Basanta Gogoi, who works in a local school, rued. Officials of the state fisheries department said they were assessing the damage caused by the floods.

Assam: Toxic materials kill fish in Deepor Beel

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jul1916/city051>

Here is yet another report confirming the death of fishes in the Deepor Beel, the lone Ramsar Site wetland of the State, due to contamination of its water by the toxic materials that find their way into the water from the municipal solid waste (MSW) dumped by the authorities on its fringe area at Paschim Boragaon. The report submitted by the Fishery Extension Officer of the Chayani Borduar Development Block of Kamrup District on October 19 last year, was made available by the fisheries department to RTI-cum-environment activist Rohit Choudhury in response to an RTI application recently. The report states, "The contamination of water of the beel is mainly due to leakage of the toxic water from the dumping ground. Thus, if we can stop this leakage, we can stop the contamination of water in the beel and save the aquatic life." The Fishery Extension Officer said that he had 'specifically' seen 'catla, rohu and borali dying in the beel, floating lifeless in its waters.'

"It so happens that, the water from the dumping ground leaks into the Deepor Beel, that results in the contamination of its water, growing algae blooms which ultimately have a toxic effect for the aquatic animals in the beels, e.g., the fishes and kills them," said the Fishery Extension Officer. The Deepor Beel has an enormous reserve of flora and fauna. Among its flora, microphytes, macrophytes, aquatic weeds, algae, plankton are found sufficiently. Among its fauna, minor carps (that is puthi, dorikona, bata, lachim-bhangan etc), Indian major carps (that is, catla, rahu, mrigal), exotic carps and tortoise are found. Besides these, chital, kanduli, borali, sal, sol, magur, singhi, amphibians, reptiles and avifauna are found. Many of its avifauna are migratory. Among the land fauna elephants, wild cats, porcupines are found, said the Fishery Extension Officer.

Assam: One lakh fish farmers to get insurance

<http://www.assamtribune.com/scripts/detailsnew.asp?id=jul1216/city056>

The Assam Government has envisaged a scheme to provide accidental insurance coverage to one lakh fish farmers in the State. The scheme is being executed as a part of the new BJP-led Government's 100 days programme for the promotion of fish economy and the development of fish farmers. Chairing a meeting on finalising the 100-day programme for the Fishery Department at the Assam Secretariat here today, Chief Minister Sarbananda Sonowal said, "The proposed insurance coverage will be in sync with the State Government's commitment to develop the socio-economic conditions of the fish farmers of the State." Moreover, steps have also been taken to supply two million fish seeds to 2,000 fish farmers at the rate of 1,000 seeds per farmer, along with registration of 150 hatcheries and 500 fish farmers. As a part of 100 days' priority programme of the department, model schemes will be developed and awareness programmes will be launched in one block of every subdivision.

Further steps have also been taken for establishment of aqua-shop at Nagkata Pukhuri in Guwahati, he said. The Chief Minister laid stress on making an exhaustive fishery policy to revamp pisciculture in Assam and use it "as a ladder" in the State's pursuit of development. He also asked the officers of the department to explore ways and means for large-scale production of fishes which have medicinal values. Fisheries Minister Parimal Suklabaidya, Chief Secretary VK Pipersenia, Principal Secretary for Fishery Department MC Jauhari, Commissioner and Secretary to the Chief Minister Sanjay Lohia and other senior officers were present at the meeting.

Assam: World Fish Migration Day in Dimapur

<http://morungexpress.com/world-fish-migration-day-dimapur/>

Anglers Association Nagaland (ANN), a govt. registered organisation with more than 400 members all over Nagaland, will celebrate the World Fish Migration Day (WFMD) on June 18 at Nouné Resort in association with Mahseer Trust, All India Game Fishing Association, Pelagic Tribe, Mustad, Surecatch, Agwetor, and Zerek. 50 school children between the age group of 10-15 years will participate in the event, which will be held from 9am-5pm. The event will include talk about India and its Migratory Fish, activities like Angling for Conservation, Catching & Releasing a Fish, Handling a Fish, Fish Anatomy, Drawing and Painting and Birding, according to a press release. Resource person for the event is Derek Dsouza, a world renowned angler from Bangalore. To participate in the event, one can contact the organizers at 9402686734. The release further mentioned that the objective of WFMD in India is to educate the younger generations about fish, rivers, and conservation.

May 21 to June end is celebrated as World Fish Migration Day to create awareness on the importance of open rivers and migratory fish. The event is being celebrated in 263 locations worldwide. The concept of WFMD is that organizations from around the world volunteer to organize their own event around the common theme of: connecting fish, rivers and people.

Meanwhile, the goal of WFMD is to activate citizens around the world to join and take action, create awareness and commitment for free flowing rivers and open swim ways for migratory fish. Migratory fish of India include Mahseer (all species), Barramundi (Asian/ Indian sea bass), Indo-Pacific tarpon, Indian shad and snapper. Some of these species are already endangered, while others, subject to several anthropogenic threats, may become threatened and potentially extinct in the future if they are not given urgent attention, the release stated.

Assam: Assam environmentalists alarmed at proposed Wetland Rules 2016

<http://www.arunachaltimes.in/assam-environmentalists-alarmed-at-proposed-wetland-rules-2016/>

Assam's rivers and wetlands which crisis cross the state may soon lose the much needed protection under the Central Government's new Draft Wetland Rules 2016, a consultation meeting said today. To analyse the impact of the new Draft Wetlands (Conservation and Management) Rules 2016 on wetlands of Assam, environment groups Aaranyak and ActionAid jointly organised a consultation in Guwahati. Comparing the Wetland Rules 2010 with the Draft Wetland Rules 2016, the consultation found that the new Wetland Rules offers very few protective measures to Assam's wetlands when compared to the 2010 Rules. The consultation suggested a complete revision of the Draft Wetland Rules 2016 to ensure better Wetland management and conservation in Assam. Aaranyak's Wetlands expert Dr Partha J Das stated, "Many important provisions which were included in 2010 have now been removed from the new Draft rules which is alarming from an environmental perspective.

For instance, rivers have now been completely excluded from the definition of 'Wetlands'. " Today's consultation recommended that at least those parts of a river or rivers directly connected to wetlands should also be recognised as part of the Wetland ecosystem and provided protection. It was also recommended that in the context of Assam's wetlands, the connecting channels must be accorded similar protection, maintenance and restoration. The new Draft rules fail to mention the list of prohibited activities which were part of Wetland Rules 2010, which must be rectified immediately with the re-inclusion of the list to protect Assam's wetlands, Das said. Stating under the Draft Wetland Rules 2016 only selective Wetland would be accorded protection, the meeting was of the view that the new Rules are therefore considerably weaker when compared to the 2010 version with an added Clause which states that 'under special circumstances' even these protection may be nullified.

"Such a clause can easily open a portal of exploitation of Wetlands in Assam, and it is of utmost importance that under no circumstance is the protection diluted," he added. The key note presentation was delivered by Prasanna Barua of Assam Remote Sensing Application Centre, Department of Science and Technology, Government of Assam. Barua provided an overview of the current status of wetlands in Assam and highlighted the challenges in wetland conservation.

The conglomeration of environmentalists, academicians, lawyers and activists gathered during the event also proposed the introduction of a Wetland Conservation Act, which would be much more effective than the newly proposed Wetland Rules. Traditional community rights also have to be retained, but without compromising on the delicate eco-system of existing Wetlands, the meeting averred.

“Assam has more than 3000 wetlands under different categories and these wetlands are part and parcel of the larger eco-system. Gradual and changing ‘development’ work has led to degradation of important wetlands which also negatively effects communities around Wetlands”, commented ActionAid Programme Manager Swapan Singha. “We urge the Central Government to consider how the new Rules will impact the communities and make these new Rules to be people-centric while keeping in mind protection of the larger eco-system of Wetlands,” Singha said. The meeting decided to forward to the Union Ministry of Environment and Forest the recommendations made during the consultation. Aaranyak is a registered society working in the North East region for the past 26 years towards nourishing the area’s natural heritage to secure the flora and fauna in the region known as one of the biodiversity hot spots of the world.