

# India News Articles from January 2021 to April 2022



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



## **‘Indian Antarctic Bill 2022’ introduced in Lok Sabha**

<https://science.thewire.in/environment/indian-antarctic-bill-introduced-lok-sabha-treaty-tourism-fisheries/>

On April 1, the Union minister of state (independent charge) for science and technology Jitendra Singh introduced a Bill in Parliament to provide for national measures to protect the Antarctic environment and associated ecosystems and to give effect to the Antarctic Treaty.

Antarctica has a geographical area of 14 million sq. km and has had no indigenous population (i.e. “Antarcticans” don’t exist). However, a few thousand people reside there, in some 40 research stations spread across the continent, throughout the year. In 1959, 12 countries – Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the USSR, the UK and the US signed the ‘Antarctic Treaty’. Their aim was to prevent the continent from being militarised and to establish it as a centre of peaceful activities.

Later, more countries, including India, have become party to the treaty, and today it counts more than 54 members. As a follow up to the treaty, countries signed the ‘Convention on the Conservation of Antarctic Marine Living Resources’ at Canberra in 1980 to protect and preserve the Antarctic environment generally and marine living resources specifically. They also signed the ‘Protocol on Environmental Protection’ to the Antarctic Treaty in 1991, which designates Antarctica as a “natural reserve, devoted to peace and science”.

India maintains two research stations on the continent: ‘Maitri’ (commissioned in 1989) at Schirmacher Hills and ‘Bharati’ (2012) at Larsemann Hills. It has also launched 41 scientific expeditions every year thus far. Together with ‘Himadri’ station in Svalbard, above the Arctic circle, India is among an elite group of countries with multiple research in the polar regions.

The growing presence of Indian scientists in Antarctica and the commitment to Antarctic research and protection prompted the government to adopt domestic legislation consistent with its obligations as a member of the Antarctic Treaty system. These laws will enable India’s courts to deal with disputes or crimes committed in parts of Antarctica, and help build credibility vis-à-vis India’s participation.

The Protocol on Environmental Protection to Antarctica Treaty requires each party to take appropriate measures within its competence, including the adoption of laws and regulations, administrative actions and enforcement measures, to ensure compliance with the protocol.

The new Bill introduced on Friday, entitled the ‘Indian Antarctic Bill 2022’, fulfils this requirement. Among other things, it will allow the government to establish a committee on Antarctic governance and environmental protection to monitor, implement and ensure compliance with the relevant international laws, emissions standards and rules of protection.

The panel is to be headed by the secretary of the Ministry of Earth Sciences, as ex

officio chairperson; this position is currently occupied by Muthalagu Ravichandran. Among other roles, he has also been the vice-president of the Scientific Committee on Antarctic Research of the International Science Council since 2018.

The committee will have ten members from various ministries, departments and organisations of the Union government, plus two experts on the Antarctic environment or other relevant areas. The proposed law will aim to provide a harmonious policy framework for India's Antarctic activities through a well-established legal mechanism; facilitate activities of the Indian Antarctic programme, including management of Antarctic tourism and sustainable development of fisheries.

Full document is available: <https://www.icsf.net/resources/the-indian-antarctic-act-2022/>

### **2004 Indian Ocean tsunami: 17 years on, a look back at one of the deadliest natural disasters in history**

<https://www.hindustantimes.com/world-news/2004-indian-ocean-tsunami-17-years-on-a-look-back-at-one-of-the-deadliest-natural-disasters-in-history-101640476494667.html>

"December 26, 2021, marks 17 years since the devastating Indian Ocean earthquake and tsunami of 2004 which struck the coasts of multiple countries in south and southeast Asia and took a fatal toll on the population there. Listed among the worst calamities in this part of the world, more than 230,000 people across India, Sri Lanka, Maldives, Thailand, and Indonesia were and the countries sustained billions of dollars worth of damages to property after the 100-foot tsunami triggered by a magnitude 9.1 earthquake.

The 2004 Indian Ocean Tsunami is also known as the Boxing Day Tsunami or, in the scientific community, the Sumatra-Andaman earthquake. According to a report by CNN, the tremors were so powerful that it was one of those rare instances when the entire planet vibrated and no place on Earth escaped movement.

"Globally, this earthquake was large enough to basically vibrate the whole planet as much as half an inch, or a centimeter," the report quoted an associate professor of geosciences at the Penn State University in the United States. "Everywhere we had instruments, we could see motions."

Triggered by the undersea earthquake activity offshore, the 100-foot-high tsunami waves laid bare complete annihilation in as many as 14 countries, making it one of the deadliest natural disasters in recorded history.

According to geological estimates, the 2004 earthquake was the third-largest of its type to ever be recorded, and it managed to even trigger aftershocks as far away as in Alaska. The plight of the affected people and countries prompted a worldwide humanitarian response, with donations totalling more than \$14 billion.

Indonesia, hit worst by the disaster, was however no stranger to earthquakes, lying between the Pacific Ring of Fire and the Alpide Belt along the south and west. The 2002 Sumatra earthquake is, in fact, believed to have been a foreshock to this main event.

### **6,000 boats and 40,000 fishermen escorted safely to harbours in 2020, says Indian Coast Guard**

<https://www.wionews.com/india-news/6000-boats-and-40000-fishermen-escorted-safely-to-harbours-in-2020-says-indian-coast-guard-360399>

"Ahead of its 45th Raising Day on Monday, February 1st, the Indian Coast Guard (ICG) has said that their force has grown from operating seven surface platforms in 1978 to operating 156 ships and 62 aircraft as on date. The Indian Coast Guard is the fourth largest Coast Guard in the world and is slated to have 200 surface platforms and 80 aircraft by 2025.

Amid the pandemic year, the Coast Guard has been deploying 50 ships and 12 aircraft every day to maintain vigil within India's Exclusive Economic Zone (EEZ), which is approximately over 2.3 million square kms. The Coast Guard's actions at sea enabled seizure of contraband worth about 1,500 Crore and apprehension of more than 10 foreign fishing boats with 80 miscreants illegally operating in the Indian EEZ in the bygone year

6,000 fishing boats with about 40,000 fishermen were escorted to safe harbours during the passage of 11 cyclones in the previous year, this is in line with the ICG's 'Preventive and Measured Response' stance of operations introduced around 2019. Some of the highlights of the bygone year have been - dousing a raging fire onboard the 333 M long Very Large Crude Carrier MT New Diamond with about 3 Lakh Metric Tonnes of crude oil off Sri Lanka, thereby averting a major ecological disaster.

In addition to this, ICG also provided Pollution Response assistance to Mauritius during the grounding of Merchant Vessel Wakashio and provided 30Tons of Pollution Response equipment, besides training. In consonance with the Prime Minister's vision of 'SAGAR', Security And Growth of All in the Region, besides rescue and aid, ICG is also collaborating with littoral countries to combat transnational maritime crimes and enhance maritime safety.

ICG conducted SAR Exercise-2020 (SAREX-2020) to validate the existing strategy for undertaking Mass Rescue Operations. The service is also working in close coordination with Central and State agencies to put in place a robust Coastal Security mechanism.

### **A tour of unloved fishes in India**

<https://www.hakaimagazine.com/features/a-tour-of-unloved-fishes/>

"Behind a lighthouse on Marina Beach in Chennai, the capital of India's southeastern state Tamil Nadu, two clashing scenes play out. On one side, early morning walkers wander the vast expanse of sand embracing the sea. On the other, opposite a row of identical green and pink buildings

where the local fishing community lives, the atmosphere is frantic. Fishers are pulling in their boats and folding their nets on the beach.

Vendors aggressively clean their fish stalls with water and brooms, readying them for customers. The fish that the sellers begin to stack into slippery pyramids on their tables represent a mix—some of it landed on this beach by small-scale fishers, while the rest was caught by industrial trawlers operating farther away. That combination makes this open-air market an ideal place for a lesson in sustainable seafood, explains marine geographer Divya Karnad of Ashoka University in Sonapat, northern India.

She's addressing a group of college students and professionals from Chennai who have gathered at the lighthouse this February morning for a Fishploration event—a scientifically guided walk through fish markets that aims to help urban seafood eaters in India make more sustainable choices.

Many city consumers tend to be familiar with just a few varieties of high-value fish like seerfish and pomfret, Karnad says. This partly has to do with where they get their fish from. City consumers are increasingly relying on supermarkets and online stores that predominantly stock popular seafood varieties.

Most restaurants, too, have just a few types of fish on their menus. The result is a mismatch between what small-scale fishers can provide and what people frequently seek out, says Karnad. "I feel like at least with the younger generation, they're totally disconnected." This rings true for Yogabhavani Manogaran, who works at Barclays bank. A regular fish eater, Manogaran has long steered clear of fish markets, letting her father do the shopping. But today, she's eager to get a clearer perspective on what the city's beachside market has to offer. "Because I eat fish regularly, I want to know if I'm doing it ethically," she tells me.

Building a connection with seafood and buying more responsibly requires three things, Karnad tells the Fishploration participants: identifying fish correctly; understanding which varieties are in season and okay to eat—that is, choosing non-threatened species that aren't breeding that month; and recognizing how the fish was caught, to avoid destructive fishing practices. "You should be able to go out and identify exactly what fish you're eating because the greater diversity of fish you eat, the healthier it is for you and for the ocean," she says.

To help the participants identify fish, Karnad hands out A3-sized posters displaying more than 50 marine species from India's east coast that are safe to eat in February. Karnad has compiled this guide for every month of the year and for both of the country's coasts as part of InSeason Fish, a collective she started with her wildlife biologist husband, Chaitanya Krishna, and friends to create awareness about seafood sustainability.

In Season Fish's website also lists species that should be avoided each month. To make the lists, the team scoured official government data and scientific studies for details on species' breeding seasons. For about 10 percent of the species, the team corroborated the scientific information with knowledge from local sellers, who are mostly women. The fisherwomen are the ones who

cut the fish and see when the eggs are inside, so they know when the breeding season is, Karnad explains.

Where scientific data wasn't robust enough, such as for threadfin bream and ribbonfish, Karnad's team relied mainly on the fishing communities' knowledge. A participant asks if anchovies will be available today. "Everything will be available," Karnad says. "The question is whether you want to eat it throughout the year."

Ironically, some of the fish the women have purchased from Kasimedu may have originated on Marina Beach. Small-scale fishers are increasingly selling their high-value catches like seerfish to traders at harbors such as Kasimedu for export, S. Velvizhi, a marine researcher at M. S. Swaminathan Research Foundation in Chennai, who's not involved with Fishploration, later tells me.

At the harbors, fishers are assured a sale at a good price, unlike in the local markets where customers are less reliable. But then, on busier market days, the fishers' own family members or neighbors might pick up the same fish and bring it back to their stalls. "They feel like unless they have a seerfish on their table nobody is even going to look at the table," Karnad says.

To keep driving forward with their goal of shifting buyer behavior, Karnad's team has added new initiatives. They're documenting recipes for the lesser-known fish varieties, for instance, and are collaborating with chefs and restaurateurs to get them to offer more diverse, in-season fish varieties sourced locally from small-scale fishers.

### **Annual ban period ends, but fishermen in Tamil Nadu, India, fret over lack of clarity on sale, export**

<https://www.dtnext.in/News/City/2021/06/15043757/1301014/Annual-ban-period-ends-but-fishermen-fret-over-lack-.vpf>

"“Though there is no restriction on fishing after the ban period, fishermen are going to face multiple issues, including sale and export of fish, and high price of diesel. They don't know whether the fish they catch will be sold and will be exported during the pandemic time,” K Bharathi, president, South Indian Fishermen Welfare Association, told DT Next.

The 61-day annual fishing ban period started on April 14 and will end on Monday night. However, the situation before and after the ban period are not the same. Before the ban period, there were no restrictions. But now, due to the pandemic lockdown and restriction in sale, fishermen are confused whether to venture for fishing or not.

Pointing out the restrictions on the sale of fish, Bharathi said the State government permitted only wholesale traders into fishing markets. When mechanised boat fishermen enter Kasimedu fishing harbour, there would be chaos due to the restrictions imposed as part of the lockdown, he added. Apart from that, Kerala is an important market for the catch from Chennai. Now, however, the fishermen are not sure whether the fish would be allowed into Kerala.

Last year, the catch from Tamil Nadu were thrown on the road by Kerala officials on many occasions citing restrictions. Similar doubts persist among fishermen from Nagapattinam coast to Rameswaram, as majority of the catch is exported, said V Kumaravel from Vangakadal Meenavar Sangam. In the absence of clarity from the union government whether export would be allowed, many from the region are not ready to venture to the sea, he said.

“Though there is no ban on export of fish, there is no clear permission from countries that have to receive the fish from Tamil Nadu,” Kumaravel added. When asked about the lack of clarity about export of fish, a senior official from Fisheries Department, who took charge only recently, said that State government would fully cooperate with the fishermen, and assured that any issue brought to their notice would be sorted out.

### **Artificial reefs: Sri Lanka minister dismisses Indian concerns, says ban bottom trawling first**

<https://economynext.com/artificial-reefs-sri-lanka-minister-dismisses-indian-concerns-says-ban-bottom-trawling-first-83114/>

"Dismissing objections raised by Indian fisherman against Sri Lanka's artificial reef project, State Minister of Fisheries Kanchana Wijesekara said India must ban the destructive practice of bottom trawling instead. Fisherfolk in Tamil Nadu have objected to a Sri Lankan initiative to submerge discarded buses in the island's northern waters in an effort to create an artificial reef. Twenty such buses were submerged near the Delft Island off Jaffna on June 11. The New Indian Express reported July 16 that experts in India have called the move irresponsible while fishing communities have expressed fears that the buses would drift underwater into India's territorial waters affecting their fishing industry.

Defending the project, State Minister Wijesekara told EconomyNext June 17 said it was the result of years of study. "It is not irresponsible project but one that is globally proven and practiced. We don't accept their claims or the statements they are making," he said. According to Wijesakara, this is the fourth phase of a project initiated about six months ago by the Department of Fisheries and Aquatic Resources to cultivate artificial reefs around Sri Lanka.

The first phase was in Trincomalee, while the second and third phases were carried out in Galle and Matara respectively. The fourth phase, this time in the country's northern waters, is ongoing. Marine research in Sri Lanka is carried out by the National Aquatic Resources Research and Development Agency (NARA), which is currently dealing with the aftermath of the X-Press Pearl shipping disaster, one of Sri Lanka's worst ecological disasters in history.

“For about two to three years, NARA and the Department of Fisheries have been studying how we can develop artificial reefs for fish spawning. That is the main idea behind this project. Similar projects have been done all over the world, even in developed countries. Sri Lanka is the first country in the region to do it,” said Wijesakara.

“We did a couple of underwater museum galleries as well,” he added. Responding to claims made by the Indian fishermen and experts, the minister said they're probably baseless, as

artificial reef building has been tried globally. Marine conservationists worldwide have, indeed, attempted to construct artificial reefs with varying degrees of success.

Large steel structures such as shipwrecks are considered suitable, while smaller unsecured structures are considered less so. “If a scientific agency is saying this is an irresponsible move, then they probably don’t have scientific research to back it. The most irresponsible act of the Indian marine research institute is not banning bottom trawling. This is a banned and illegal practice globally which damages marine environment and reserves,” said Wijesakara.

Indian fishermen encroaching into Sri Lankan waters in the north has been a long-drawn issue, as has the alleged robbing of Sri Lanka’s marine resources thanks to bottom trawling. Fishing vessels from South India had got into the habit of straying over the Indo-Lanka maritime border during a 30 year civil war when Sri Lanka fishermen were banned from entering the Northern waters – a practice that didn’t quite end with the war.

Wijesekara said that despite requests made on numerous occasions to stop bottom-line trawling by Indian fishermen, nothing has been done to minimise it, while Sri Lanka banned the practice entirely in 2017. “I don’t know who these fishermen are that are objecting to [the reef project], but I assume they engage in bottom trawling. Their concern might be that the submerged vehicles would affect their fishing gear.

But this is a 100% scientifically proven method; it doesn’t cause any damage to the sea bed,” he said. “This will create more artificial fish spawning spaces and coral beds so I urge our Indian counterparts to make a move on banning bottom trawling instead and to consider its impact to the ocean,” he added. According to US National Oceanic and Atmospheric Administration, an artificial reef is a manmade structure that may mimic some of the characteristics of a natural reef. These are often made by submerged shipwreck, oil rigs, gas platforms and other offshore structures.

Marine resource managers also create artificial reefs in underwater areas that require a structure to enhance the habitat for reef organisms, including soft and stony corals and the fishes and invertebrates that live among them, the National Oceanic and Atmospheric Administration said on its website.

Materials used to construct artificial reefs have included rocks, cinder blocks, and even wood and old tires. Nowadays, several companies specialise in the design, manufacture, and deployment of long-lasting artificial reefs that are typically constructed of limestone, steel, and concrete.

### **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.

### **Bangladesh and India: Economic ties: Addressing the next generation of challenges**

<https://www.thedailystar.net/opinion/news/bangladesh-india-economic-ties-addressing-the-next-generation-challenges-2074361>

"Over the past decade particularly, the Bangladesh-India bilateral economic relationship has entered a new terrain with the strengthening of traditional ties and foundations being laid to deepen and broaden the partnership in going forward. The recent state visit of the Indian prime minister to Bangladesh—to join the celebrations of the golden jubilee of Bangladesh's independence and the birth centenary of Bangabandhu, the Father of the Nation—marked new initiatives to further strengthen the bilateral ties.

The communique issued at the end of the visit states that ""the ties reflect an all-encompassing bilateral partnership based on equality, trust and understanding that transcends even a strategic partnership"". As Bangladesh prepares for its dual graduation journey (middle-income graduation and LDC graduation), it will be important to harness the potential opportunities of

this partnership by addressing the attendant concerns and leveraging the initiatives that have been flagged in the communique.

The economic issues mentioned in the joint communique may be categorised in three groups: reiteration of the traditional areas of cooperation, adding new dimensions to the ongoing initiatives, and proposals for initiatives in new areas to broaden and deepen the ties. The communique emphasised the need to address prevailing non-tariff barriers and underscored the importance of upgrading the infrastructure at land customs stations (LCSs). In this connection, the Bangladesh side had raised two concerns with a request for their earliest resolution: one concerned the new policy of the Indian Customs that requires verification of certificates of origin issued from Bangladesh, and the second related to the anti-dumping duties imposed on Bangladesh's jute products exported to India.

The first originates from the fact that Bangladesh receives duty-free market access which India has offered to the SAARC LDCs under the SAFTA. Access to this requires compliance with the stipulated rules of origin. The Export Promotion Bureau (EPB) has traditionally served as the issuing authority for purposes of certification which was accepted by the concerned Indian authorities. It was stated in the communique that in the event of a conflict between provisions of customs rules and the rules of origin of a trade agreement, the latter shall prevail. Bangladesh has maintained that the SAFTA rules of origin do not envisage such verification and therefore the EPB certification should suffice.

Hopefully, the issue will now be resolved. At the same time, the concern that was raised sends a cautionary note to Bangladesh's relevant authorities as regards the need to strengthen oversight mechanisms to ensure that terms of preferential market access are strictly maintained. This will become even more important in view of Bangladesh's ongoing trade negotiations with other countries, since partner countries will want to be ensured that local value addition (or change of tariff headings) requirements for preferential market access are duly enforced and complied with by Bangladesh.

As regards anti-dumping duties (ADDs) on jute products, the Indian side has agreed to look into the matter. As a matter of fact, this issue has been there for some time, since January 2017, with the ADDs on jute yarn, hessian and jute bags ranging from USD 19 to USD 352 per tonne depending on specific exporters. These duties have also been imposed on Bangladesh's exporters of hydrogen peroxide and fishing nets. Several consultations have already taken place in this regard but without any result.

The ADDs have seriously undermined the competitiveness of the exporters of the concerned items from Bangladesh; a number of them have been priced out of the market already. One hopes that the direction from the highest authorities, as stipulated in the communique, will now result in speedy review and withdrawal of the ADDs. The need for predictability of trade policies, regulations and procedures was stressed in the communique. If this serves as a policy guideline, the possibility of such disputes arising can be effectively pre-empted, on both sides.

Issues of strengthening the capacity of Bangladesh Standard and Testing Institute (BSTI) and its collaboration with the Bureau of Indian Standards (BIS), harmonisation of standards and signing

of mutual recognition of certificates have been on the table for some time. Indeed, strengthening of BSTI was included as one of the projects which was prioritised under the first Indian Line of Credit in 2010. It will be good if a timeline is now set to realise this in accordance with the communique directives, as regards the signing of the Mutual Recognition Agreement between the BSTI and the BIS. With respect to the second group of issues, the communique mentioned further initiatives to expand the ones already in place.

The number of border haats was to be raised; LCSs and land ports were to be upgraded; India wanted an LCS to be established without port restrictions (or with a negative list) on the border with India's north-eastern region. Against the backdrop of the BBIN Motor Vehicle Agreement, and the routes now being identified, the need for upgradation of LCSs—both on the western and eastern sides of Bangladesh's border with India—has assumed heightened interest.

Without integration and interoperability of systems, electronic data exchange, standardised digital platforms and single windows at the LCSs, the potential benefits of not only the Motor Vehicle Agreement but also of the rail and coastal shipping linkages will not be realised to the fullest extent. These initiatives also need to be looked at from the perspective of multi-modal connectivity and deepening of cooperation beyond the remit of bilateral ties with India, and in the context of the sub-regional cooperation that also embraces Nepal and Bhutan.

One critically important initiative that was mooted in the communique relates to a comprehensive economic partnership agreement (CEPA) between the two countries. The communique recognised the significant benefits of bilateral economic and commercial ties, and stated that both sides had emphasised the need for expeditious conclusion of the ongoing joint study on the prospects of entering into a CEPA.

A CEPA, by definition, is a multi-dimensional concept that embraces a wide range of areas including trade liberalisation plan, preferential market access for goods and services, transport and multimodal connectivity, investment cooperation, customs standardisation and harmonisation, mutual recognition agreements, harmonisation of labour and environment standards and disputes settlement mechanism, among others. Such a study ought to be based on evidence and sound analysis and informed by appropriate consultations with the private sector, chambers, experts, professionals and representatives of other stakeholder groups, including civil society organisations.

One hopes that on the Bangladesh side, these will be done with due importance and openness. For such a comprehensive partnership to be grounded on broad-based support, the offer and request lists will need to be appropriately calibrated to reflect the relative strengths of the two economies—one an emerging powerhouse of the twenty-first century, and the other still an LDC poised for graduation after five years. A balanced, two-track implementation road map will be the best way to go forward.

As regards connectivity, both sides have also indicated their preferences in terms of modes and routes, which will need to be considered with the urgency these deserve. Bangladesh, understandably, is keen to emerge as a regional connectivity hub, not only of South Asia but also

of the Southern Asia region, and as a major exporter of services, through deepening of sub-regional and regional cooperation.

A CEPA with India should be seen as a building bloc for the realisation of such a broad vision. For buy-in in Bangladesh of CEPA type of deepening of cooperation, a speedy resolution of the water sharing issues within the perimeters of joint river basin management as well as resolution of other contentious issues will be the key.

However, physical connectivity will not be translated automatically into business ventures and drivers of development. Modalities of public-public and public-private partnerships and cross-country joint venture initiatives involving the private sector will need to be identified—and realised on the ground—to reap the potential benefits originating from the various ongoing initiatives including multimodal connectivity, coastal shipping agreement and BBIN-MVA.

For Bangladesh, a key challenge will entail making greater use of the duty-free access to the Indian market, the potential of which continues to remain largely underutilised. One strategy in view of this is to be able to attract Indian investments that take advantage of the preferential market access to be offered under CEPA. Taking the discourse beyond bilateral trade deficit to areas of trade creation will be important, with concrete initiatives to realise potential export opportunities.

Transforming the transport corridors into economic corridors will be the key here. From this vantage point, concrete actions will need to be taken towards triangulation of trade, transport, and investment connectivities to develop the production networks and establish the backward and forward value chains that serve the interests of trade, business and commerce—both bilateral and beyond. What is needed is a time-bound road map, phased and sequenced in a manner that is geared to taking advantage of the emergent window of opportunity.

### **Bangladesh and India: Threats to Meghna river basin ecosystem: A wake-up call**

<https://thefinancialexpress.com.bd/views/threats-to-meghna-river-basin-ecosystem-a-wake-up-call-for-bangladesh-india-1627142147>

"A wide range of threats facing the ecosystem of Meghna river basin constitute a wake-up call for both Bangladesh and India. But neither country is showing any interest to protect or promote the basin's ecosystem. An ecosystem is a geographical area, where plants, animals, and other organisms, as well as weather and landscapes work together to form a bubble of life. The ecosystem of the Meghna, flowing southward across India and Bangladesh, is neglected by both the countries, despite its huge importance as the natural 'biogeographical gateway' located in the transition zone between Indian, Indo-Malayan and Indo-Chinese regions.

The Meghna river basin drains a total area of 82,000 square km, of which 47,000 square km or 57 per cent of the total area is in India and 35,000 square km or 43 per cent is in Bangladesh. According to a recent study, the basin's ecosystem is endangered by a number of threats. The study, supported by the International Union of Conservation of Nature (IUCN), is a wakeup call to address large socio-economic disparities throughout the region.

At a three-day virtual dialogue, split into 10 thematic sessions, hosted by the Meghna Knowledge Forum (MKF), participants from Bangladesh and India called upon the two neighbouring countries to develop cooperation to protect and promote the ecosystem services in the Meghna river basin for the benefit of 50 million people in the two countries including the Garo, the Khasi and the Jaintia communities. They said such cooperation would also increase the benefits to the people in downstream Bangladesh, and build trust between stakeholders across the border. The Meghna river basin, shared by Bangladesh and India, has 29 transboundary rivers originating in India which flow through Bangladesh before falling into the Bay of Bengal.

Located in the transition zone between Indian, Indo-Malayan and Indo-Chinese regions, the Meghna river basin is their 'biogeographical gateway'. The ecosystem services provided by the river basin directly support life and livelihoods of over 50 million people in Bangladesh and India including the Khasi, the Garo and the Jaintia communities. The study is also a call to wake up without wasting further time to develop cooperation for joint solutions and basin level integrated approaches to tackle challenges posed by recurring floods and droughts troubling millions of people in the two neighbouring countries.

The two countries could make the Meghna river basin the most vibrant region in South Asia. Over 100 participants, 40 of them from the Garo and the Khasi communities, of the two countries took expressed concern over neglecting the basin's eco system. Saber Hossain Chowdhury, MP, chairperson, Parliamentary Standing Committee on Environment, Forest and Climate Change Ministry, called for moving from conflict to cooperation through the Meghna Knowledge Forum. PR Sambharia, senior joint commissioner, Ground Water and Flood Management at Indian Jal Shakti Ministry, requested the IUCN to share its findings with Bangladesh-India Joint River Commission and provide them to the relevant government departments of the two countries.

Malik Fida A Khan, executive director, Centre for Environmental and Geographic Information Services, said that Article 6 of the Framework Agreement for Cooperation between Bangladesh and India, mandates the two countries to work together for the preservation of ecosystems of shared rivers. He said, "This provides an entry-point for strengthening cooperation for the formation of the Mghna River Basin Organisation for multi-level cooperation for the sustainable management of the Meghna basin."

" The IUCN will disseminate the outcomes of the Meghna Knowledge Forum (MKF) at bilateral and global platforms, including at the September 2021 IUCN World Conservation Congress, to be held in Marseille, France, the IUCN said a news release. "We felt the need to assess the downstream benefits to the people in Bangladesh from such initiatives. However, this will help build trust between stakeholders across the border and for the benefit of 50 million people living in the region shared by the two countries across the border," said Dr P Shakil Ahammed, principal secretary, Water Resources, Fisheries, Food and Civil Supplies.

The basin's importance stems from the fact that more than 50 million people in Bangladesh and India, particularly, farmers, fishermen and forest dependent communities like the Khasis, the Garos, and the Jaintias in the haors in Sylhet region of Bangladesh depend on it for their

sustenance. The two countries have no choice but to cooperate, and work together to protect the basin's ecosystem. The three-day dialogue laid the foundation for a multi-stakeholder knowledge exchange platform for the inclusive management of the Meghna river basin.

The participants shared their perspectives on a wide range of issues linked to culture, water governance, climate change and inland navigation to promote partnerships among the stakeholders to address knowledge gaps for integrated water resource management in the Meghna river basin. About the significance of Barak-Meghna river system, Dr Rajdeep Roy, MP, from Silchar, Assam, India described the Barak river as 'rich in biodiversity with its more than 100 species of fish, including the Ganges Dolphin, listed as endangered.'

More than 70 community managed fish sanctuaries have been established across Meghalaya, and many of these are located in transboundary tributaries of the Meghna river basin, such as the Someshwari, and Simsang rivers originating from Garo hills in India, he said. The initiative led to increase in the fish population and improvement in water quality. At the first webinar participants discussed the importance of the Megha basin from the socio-economic and ecosystems perspectives.

The Meghna basin supports one of the largest Hilsa fisheries in the world, providing a source of protein for millions of people living in Bangladesh and India. Vishwa Ranjan, programme officer, water and wetlands, IUCN Asia, said, ""The basin includes more than 1,000 wetlands located in the haor region of Bangladesh and the Barak Valley of India. These buffer against flooding, and also provide habitat for thousands of migratory waterfowl annually."" The basin has high cultural significance, with a number of indigenous communities including the Jaintia and the Khasi living in it, said Sabyasach Dutta, executive director, Asian Confluence.

He said, ""The ancient Jaintia kingdom used to span both sides of the border and was replete with monuments, cultures, folklore and art forms. The ancient Jadukatar river festival, celebrated even now, is an example of the cultural value of the rivers for the people."" Despite such importance, the Meghna basin is facing a wide range of threats, shows the IUCN supported study. Dr Saudamini Das, professor, the Institute of Economic Growth, Delhi University, said, ""Indigenous communities living in the forest dominated landscapes of Meghna basin are poor, and depend on the forest for their socio-economic well-being.""

""Development of innovative Payment of Ecosystem Services mechanisms could provide economic security of indigenous people and the protection of watersheds for the long-term water security across the basin."" FW Blah, chief forest officer of the Jaintia Hills Autonomous District Council, Meghalaya pointed out the impact of mining and shifting cultivation on the forests of the Jaintia Hills, the source of many transboundary tributaries of the Meghna river, including Myntdu and Umngot. He said, destructive mining has stopped, but deforestation, forest fragmentation, and soil degradation continue to threaten the ecosystem.

Blah described the Jaintia Hills Autonomous Council as an elected governing body of the Jaintia people and it plays a key role to promote the region's culture. Panelists and participants discussed the benefits of sharing as an opportunity in the transboundary context. Dr AK Enamul Haque, director of the Asian Centre for Development, Dhaka, highlighted the potentials of bilateral

benefits of sharing the Meghna basin. The webinar highlighted the need to strengthen collaboration within the basin to maintain the Meghna's status as one of the last remaining long free-flowing rivers in Asia.

According to a recent article published in the Nature journal, Mapping the Worlds Free-Flowing River, the Meghna river has been identified as one of the last remaining long free-flowing rivers in Asia. The Brahmaputra river is, however, listed as a non-free-flowing river, with good connectivity, and the Ganges is also categorised as a non-free-flowing river, with very limited connectivity.

The webinar also demonstrated the cultural importance of the river to indigenous communities, and their dependence on the ecosystem services provided by the river. The webinar series aims at building the water governance capacity of a network of Civil Society Organisations (CSOs) in the GangesBrahmaputraMeghna (GBM) River Basin.

The webinar series is funded by the Swedish International Development Cooperation Agency (SIDA) through the Oxfam Transboundary Rivers of South Asia (TROSAs) programme. Its focus is to strengthen CSO engagement in transboundary water management issues.

### **Bangladesh and India: Trade talks turn barren**

<https://thefinancialexpress.com.bd/economy/bangladesh-india-trade-talks-turn-barren-1615256259>

"Bangladesh's proposals have received a lukewarm response from the Indian side at the bilateral meeting on trade issues held in Dhaka on Monday. Dhaka could not derive any concrete result from the meeting on its two main concerns--- anti-dumping duty and Indian new customs rules on Bangladesh's export items, officials said. ""The discussion will continue...,"" an official, who took part in the Bangladesh-India commerce secretary-level meeting, told the FE after the meeting.

Asked whether any assurance came from the meeting on the issues of concern, another participant answered in the negative. ""No, no, no,"" he uttered. Asked, commerce secretary Dr. Md. Jafar Uddin, the Bangladesh team leader, however, expressed the hope that India would review the anti-dumping duty that it slapped on jute goods, hydrogen peroxide, and fishing net back in 2017 and afterwards. ""We've tabled the issue very strongly.

They'll let us know after reviewing it because there are some technical matters,"" he said. While addressing the anti-dumping duty issue, Mr. Uddin said, the Bangladesh side referred to some articles and provisions of the World Trade Organisation and the South Asian Free Trade Area (SAFTA) agreement. ""They will examine it."" Regarding new customs rules of Indian, he said Bangladesh requested India not to send a large volume of 'country of origination' certificates together for verification. "

"We told them that the new customs rules were not in conformity with the SAFTA rules,"" he said. Asked about the Indian response, Mr Uddin said that in most cases immediate decision does

not come from such types of meetings. "They will go back to their capital and examine (our arguments) and will let us know (the decision). You can write, they have assured us and may look into the matters positively," he said. He said the meeting also discussed about the signing of Comprehensive Economic Partnership Agreement (CEPA) between the two countries. "After graduation, the CEPA with India as a big trading partner will be very positive one," the secretary said. "We have to sign the deal as soon as possible."

"The meeting, according to a press release, also discussed harmonisation of standards and mutual recognition of standards, cooperation under different common regional forum, facilitation of trade by removing non-tariff barriers, and import and export restrictions. Enhancing the number of border markets (haats) and volume of trade through the haats, and expansion of port facilities were also discussed in the meeting.

The Indian new Customs Rules-2020 now administers the rules of origin under all trade agreements signed by India. The new rules have made the getting of tariff preference in its market tough for the countries having preferential deal with it. Bangladeshi exports, officials said, are facing new types of barriers since the new rules came into effect in last September. India slapped the anti-dumping duty on Bangladesh's jute yarn, hessian and bags, ranging between US\$19 and \$352 per tonne, in January 2017.

A similar duty, ranging between \$27.81 and \$91.47 per tonne, was also imposed on export of hydrogen peroxide to India from Bangladesh in April 2017. In 2018, India also put anti-dumping duty, \$2.69 per kilogramme, on fishing net, exported from Bangladesh to its domestic market. Bangladesh failed to get the duties removed despite scores of consultations with India for years.

### **Bangladesh and India: Urged to cooperate on Meghna River basin**

<https://www.dhakatribune.com/bangladesh/2021/06/26/bangladesh-india-urged-to-cooperate-on-meghna-river-basin>

"Speakers at a dialogue have called on Bangladesh and India to boost cooperation in protecting and promoting the ecosystem services of the Meghna River basin for the benefit of 50 million people living in the region shared by the two countries. The two neighbours should work together to make the basin as one of the most vibrant regions of South Asia, Planning Minister Abdul Mannan said. "

"There is no alternative to cooperation and working together," he said while addressing the first ever knowledge forum on the Meghna River basin, according to a release from International Union for Conservation of Nature (IUCN) on Saturday. It is estimated that more than 50 million people in Bangladesh and India depend on the ecosystem services provided by the basin, including indigenous forest dependent communities such as the Khasia, Garo, and Jaintia; and the fishermen and farmers depending on the extensive wetlands (Haors) of Sylhet region in Bangladesh.

RR Sambharia, representing India's Ministry of Jal Shakti and senior joint commissioner, Ground Water and Flood Management, advised the IUCN to share the result of the forum with

the Joint River Commission (JRC) of Bangladesh and India, and its dissemination to the relevant government departments at the state level. To maintain the momentum created through the Meghna Knowledge Forum (MKF) 2021 and to attract international donor agencies to the Meghna River basin, IUCN will disseminate the forum outcomes at the bilateral and global platforms, such as IUCN World Conservation Congress in Marseille France planned in September 2021.

Malik Fida A Khan, executive director, Center for Environmental and Geographic Information Services, said the article 6 of Framework Agreement for Cooperation between Bangladesh and India, mandates the two countries to work together for the preservation of ecosystem of the shared rivers. ""This provides an entry point for strengthening the discourse on the formation of Meghna River Basin Organization (RBO), which needs to ensure multi-level coordination for the sustainable management of the Meghna basin.”

More than 100 participants from across the Meghna basin joined the three-day forum held recently, said IUCN on Saturday. The three-day forum laid the foundation of a multi-stakeholder knowledge exchange platform for the inclusive management of the Meghna river basin. Designed as a virtual event, the forum’s objective was to facilitate partnerships among different stakeholders and sectors to address knowledge gaps in the implementation of an Integrated Water Resource Management (IWRM) in the Meghna River basin.

Highlighting the significance of Barak-Meghna river system, Dr Rajdeep Roy, member of Parliament, India (Silchar, Assam) said: “Barak river is rich in biodiversity and more than 100 species of fish, including the Ganges Dolphin, listed as endangered species have been recorded from Barak river in India.” The forum included 10 different thematic sessions and more than 40 speakers from diverse sectors, including from the Garo and Kashi indigenous communities.

The speakers shared their perspectives on the wide range of issues linked to culture, water governance, climate change and inland navigation. “There are more than 276 shared river basins across the world, Meghna basin is one of them,” said Saber Hossain Chowdhury, MP and chairperson of Parliamentary Standing Committee in Ministry of Environment, Forest and Climate Change, Bangladesh.

He reiterated that through MKF 2021, they hope to move from a situation of conflict to cooperation, as the forum dialogue is linked to creation and enhancement of the benefits from the Meghna basin through trans-boundary cooperation. The forum also highlighted the need to strengthen the governance of the basin, and make it more inclusive and responsive to the needs and aspirations of the indigenous community. "

"More than 70 community managed fish sanctuaries have been established across Meghalaya, and many of these are located in transboundary tributaries of the Meghna river basin, such as the Someshwari or Simsang river originating from Garo hills in India. The initiative led to increase in the fish population and improvement in water quality,” said Dr. P. Shakil Ahammed, Principal Secretary, (Water Resources, Fisheries, Food & Civil Supplies). Shakil also emphasized the need to assess the downstream benefits to the people in Bangladesh from such initiatives, as this will help build trust between stakeholders from across the border.

## **Can unprecedented warming of Indian Ocean serve as a wake-up call?**

<https://weather.com/en-IN/india/environment/news/2021-08-19-unprecedented-warming-of-indian-ocean-serve-as-a-wakeup-call>

"Last week, the Intergovernmental Panel on Climate Change (IPCC) released the first instalment of the Sixth Assessment Report (AR6) that lays out the physical science basis for climate change. This report, produced by the first of its three working groups, puts forth what many are calling the clearest and strongest warning so far.

The message is unequivocal that human beings are responsible for the changes we are seeing in nearly every part of the world. Like most of the world, the South Asia Region has also witnessed warming since the beginning of the 20th century, with rapid increases in the last few decades. This unprecedented warming has been accompanied by increases in extreme heat and heavy precipitation as well.

In addition to greenhouse gases, changes in temperature involve substantial tempering by the aerosols that we co-emit and know as atmospheric pollution. This is particularly true for South Asia, and the overall rainfall in the monsoon regions has indeed decreased due to these aerosols that have overwhelmed any increase resulting from greenhouse gases.

## **Centre asks Tamil Nadu govt for list of fishermen for India-Sri Lanka talks**

<https://www.dtnext.in/News/TamilNadu/2021/12/21100510/1335025/Centre-asks-Tamil-Nadu-govt-for-list-of-fishermen-.vpf>

"India's Union Ministry of External Affairs has directed the Tamil Nadu government to provide a list of people representing fishermen associations in the state for talks between the Indian side and the Lankan side on the dispute over fishing.

The Tamil Nadu government, according to sources, will be soon sending the list of participants after consulting the fishermen associations and leaders. The move assumes significance after the arrest and subsequent prison of 55 Indian fishermen from Rameswaram and Mandapam in Tamil Nadu.

The fishermen were arrested on December 19 by the Sri Lankan Navy and according to information they were produced before a Sri Lankan court and subsequently remanded in a Jaffna prison. According to information available, the arrested are remanded in judicial custody till December 31. Eight mechanized fishing boats belonging to the fishermen from India are also in the custody of the Sri Lankan navy.

## **Costly feed and freight rates spoil Indian seafood industry's efforts to cash in on higher shrimp production**

<https://www.moneycontrol.com/news/business/costly-feed-and-freight-rates-spoil-seafood-industrys-efforts-to-cash-in-on-higher-shrimp-production-7454271.html>

"Higher feed prices on top of logistics hurdles have thwarted efforts by Indian seafood exporters to capitalise on the increased output of farmed shrimp this year. The production of aquaculture shrimp, which accounts for over 70 percent of the nearly \$6 billion yearly seafood exports from India, dropped 19 percent to 650,000 tonnes in 2020 from the previous year.

### **Doubts World Bank unit's liability for pollution in India says a D.C. Circuit Judge**

<https://www.law360.com/construction/articles/1378921/dc-circ-doubts-world-bank-unit-s-liability-for-india-pollution?copied=1>

"A D.C. Circuit judge on Monday said U.S. Supreme Court precedent obliges him not to hold a private-sector lending arm of the World Bank responsible for environmental damage caused by a coal-fired power plant, which a proposed class of fishermen and others in Gujarat, India, alleged it has negligently funded. U.S. Circuit Judge David S. Tatel asserted this view as a three-judge panel examined the Indian nationals' bid to undo a lower court order from August that found the Washington, D.C.-based International Finance Corp. was immune from being sued.

The plaintiffs allege that they've continued to experience devastating environmental damage from the Tata Mundra Power Plant, including the killing of marine life, because the construction and operation of the project did not comply with the environmental standards initially set out. The complaint dating back to April 2015 also alleged that the IFC, which helped finance the project with \$450 million in loans, provided the funding that allowed it to go forward. It also claimed that the organization neglected its obligation to supervise the project and failed to comply with its own policies to protect the environment.

The IFC is composed of 184 member countries, including the U.S., and was designed to encourage private enterprise in developing countries. ""It approved all of the design of this plant that harms the plaintiffs,"" Richard Herz of Earth Rights International, an attorney for the Indian nationals, told the panel. ""And it did so knowing the design it approved, and the plant going forward, would pollute the air, destroy the fisheries and ... cause a series of other harms to plaintiffs' communities."" But Judge Tatel, the most vocal jurist on the panel, repeatedly suggested that the IFC has immunity.

Because the alleged injuries did not occur in the U.S., they do not fall under the Foreign Sovereign Immunities Act's commercial activity exception, the judge said. Ignoring where the injuries actually occurred, Judge Tatel emphasized, would also conflict with the Supreme Court's 2015 ruling in *OBB Personenverkehr AG v. Sachs*.

In that case, the high court said a California resident couldn't sue Austria's national railway, which has sovereign immunity under the FSIA, for personal injuries that ultimately necessitated the amputation of both her legs above the knee. Since her lawsuit was based on her injury rather than the ticket she purchased in the U.S., the case didn't fall under the FSIA's commercial

activity exception, the court unanimously ruled. Judge Tatel said Monday that the appellate court must apply this same reasoning in the current dispute. "

"There's nothing wrongful about IFC's decision-making," the judge said. "It just seems that this case is totally controlled by Sachs." Still, Herz maintained that the organization cannot escape liability because its allegedly tortious conduct occurred in the U.S. Senior Circuit Judge A. Raymond Randolph, who seemed skeptical of the plaintiffs' argument, stated at one point that they cannot allege that the IFC is solely responsible and has final approval authority over the design of the coal power plant.

The judge expressed this view after Herz acknowledged that the plaintiffs don't have access to the loan agreements for the other lenders involved in the multibillion-dollar Indian project. But the attorney insisted that the IFC provided key funding and signed off on the project's design, and that none of the other lenders would have provided funds without the organization's involvement. Judge Tatel, unpersuaded by Herz's argument, said he could not find any "material difference" between Sachs and the current case.

In Sachs, the California resident claimed, among other things, that the railway must face strict liability for its failure to warn her about the design defects in the train and platform when she bought her train ticket through a Massachusetts-based online travel agent. In their D.C. Circuit petition, the proposed class said the IFC failed to adequately supervise the power plant project, Judge Tatel explained. Sidley Austin LLP partner Jeffrey Green, an attorney for the IFC, reiterated Judge Tatel's reasoning and said the current case is controlled by Sachs because, as the current complaint also itself alleged, the construction and operation of the coal power plant is the source of plaintiffs' injuries.

U.S. Circuit Judge Judith Rogers asked the attorney whether there's any avenue "to get at the defendant's action" even if the evidence shows the IFC offered the loan despite knowing that the project's design would be environmentally disastrous. Green replied in part that because the IFC is not a "private actor," it is immune from foreign liability claims. He added that the project's design was significantly modified by Coastal Gujarat after the IFC reviewed the proposal and handed over the loan.

Monday marked the second time the appellate court heard the case. The Supreme Court revived the dispute in February 2019, concluding that international organizations do not enjoy broader immunity than foreign governments. In a 7-1 decision, the high court reversed and remanded a D.C. Circuit order, which upheld the district court's initial dismissal and held that international organizations have virtually absolute immunity to U.S. lawsuits under the International Organizations Immunities Act.

The justices said the IFC, like foreign governments, has immunity equivalent to what is offered to foreign sovereigns under the FSIA. Justice Brett Kavanaugh took no part in that decision, having considered the case while he was on the D.C. Circuit. The plaintiffs are represented by Richard Herz, Jonathan Kaufman, Marco Simons and Michelle Harrison of Earth Rights International.

IFC is represented by Jeffrey Green and Joshua W. Moore of Sidley Austin LLP, and Dana Foster and Maxwell J. Kalmann of White & Case LLP. The case is Jam et al. v. International Finance Corp., case number 20-7092, in the U.S. Court of Appeals for the D.C. Circuit. -- Additional reporting by Jimmy Hoover. Editing by Rich Mills.

### **Enrica Lexie case: Injured Indian fishermen move Supreme Court seeking compensation from amount deposited in favour of boat owner**

<https://www.livelaw.in/top-stories/enrica-lexie-case-injured-fishermen-move-supreme-court-seeking-compensation-out-of-rs-2-crores-deposited-in-favour-of-boat-owner-178475>

"In a new development in the Enrica Lexie case, seven Indian fishermen who were on board the fishing boat which was attacked by the Italian Marines in the 2012 sea-firing incident have approached the Supreme Court seeking compensation out of the amount of Rupees 2 crores, which the Republic of Italy has deposited in favour of the owner of the boat.

The fresh application has been moved on behalf of 7 persons, who were among the 12 fishermen who were traveling in the 'St. Antony' boat, which faced the sniper attack from Italian Marines in February 2012 at sea waters near Kerala coast. The applicants say that they were also injured in the incident and are therefore entitled to compensation. The applicants seek a stay on the disbursement of the compensation amount till their claims are determined.

A Division Bench comprising Justice Indira Banerjee and Justice V Ramasubramanian on Friday adjourned the hearing of the petition to August 2 as the Solicitor General was not engaged before another bench.

The application was filed on July 7, after the Supreme Court's order of June 15 which quashed the criminal proceedings pending in India against against two Italian Marines -Massimiliano Latorre and Salvatore Girone - with respect to the 2012 sea-firing incident which killed two Indian fishermen. The Supreme Court quashed the criminal proceedings accepting the compensation of Rupees 10 crores deposited by the Republic of Italy.

### **Enrica Lexie case: India's Supreme Court gives time to boat owner to respond to crew members' plea for compensation**

<https://www.livelaw.in/top-stories/supreme-court-enrica-lexie-fishermen-seeking-compensation-boat-owner-given-time-to-reply-182565>

"The Supreme Court of India today while hearing an application filed by seven fishermen who were on board of the fishing boat that was attacked, seeking compensation out of the amount of Rs 2 crore which was deposited in favour of the owner of the boat, granted 3 weeks time to the boat owner to file its reply on the application filed by crew members and the statement filed by the State of Kerala.

The Supreme Court had on August 19th ordered a stay on the disbursement of the compensation of 2 crores to the owner of the boat named ""St Antony"" which was attacked by the Italian Marines in the 2012 sea-firing incident.

### **FAO report: Insurance coverage for fisheries & aquaculture units inadequate in India**

<https://krishijagran.com/animal-husbandry/fao-report-insurance-coverage-for-fisheries-aquaculture-units-inadequate-in-india/>

"Given the low penetration of insurance products in the fisheries sector, the 'FAO World Review of Capture Fisheries and Aquaculture 2022' has recommended that public and private insurance service providers work together to take proactive measures to help India's fisheries and aquaculture insurance market recover.

With the weather being a factor in the fisheries industry, insurance service providers should be encouraged to participate in order to improve the sector's overall competitiveness and efficiency of service delivery.

When occupational hazards to fishers' and fish farmers' lives and property are on the rise as a result of more frequent extreme weather events in recent years, the report takes on greater significance.

Fishermen and aquaculture farmers, on the other hand, are generally unaware of insurance options. In India, fishing vessels, coastal immovable property, and aquaculture units have abysmal insurance coverage. Appropriate extension efforts by government agencies, non-governmental organizations, and aquaculture societies, with appropriate participation from the fishing community, could bridge the gap and facilitate insurance product marketing at the grassroots level.

The report suggested that bundling disaster risk insurance packages with existing micro-credit schemes could be a viable option, given the strong network of micro-finance institutions and self-help groups in coastal areas."

### **Fewer fishing days, lower catch, poor welfare access leave India's fishers poorer**

<https://science.thewire.in/environment/fewer-fishing-days-lower-catch-poor-welfare-access-small-fishers-impooverished/>

"The number of days Debasis Shyamal, a fisherman from Digha in West Bengal, can take his boat to sea has declined over the last decade owing to cyclonic storms and other adverse weather conditions. "At least 40-50 days of the year go just like that when we don't get to fish and this is apart from the monsoon months, when fishing is banned," Shyamal, the vice-president of a small-fishers' collective, Dakshinbanga Matsyajibi Forum, said.

The western coastline, along the Arabian Sea, also has this problem. Kerala reported a 46% decline in the number of fishing days over a year to 2017 after cyclone Ockhi hit the west coast, a study by the Central Marine Fisheries Research Institute found.

“The number of weather warnings issued by the Indian Meteorological Department has also risen since the cyclone,” said A.J. Vijayan, former secretary of the National Fishworkers Forum. “So it’s not just the big cyclones but local fluctuations such as heavy rain, localised depressions in the sea as well that lead to weather warnings and, therefore, a fall in fishing days.”

### **Fishing island in India keeps coronavirus at bay**

[https://timesofindia.indiatimes.com/city/rajkot/shiyalbet-island-keeps-ncov-virus-at-bay/articleshow/82415547.cms?utm\\_source=contentofinterest&utm\\_medium=text&utm\\_campaign=cppst&pcode=461](https://timesofindia.indiatimes.com/city/rajkot/shiyalbet-island-keeps-ncov-virus-at-bay/articleshow/82415547.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst&pcode=461)

"Luxuries like electricity and potable Narmada water may have touched its shores as recently as in April 2018, but this tiny fishing island, 600 metres away from Pipavav port, didn't let the light of wisdom dim in all these 70 years of dark ages. Villagers knew what good practices will keep them healthy and has proven its worth time and again, including in this second wave of the killer pandemic.

This village, surrounded by Arabian sea, has a population of ten thousand people and not a single case of Covid-19 till now. It's not just luck that's helping the fishermen and their families here stay safe at a time when the entire country is crumbling in the battle against pandemic, but their self preservation methods too.

“The village is small and there is awareness among people. The panchayat is distributing kadha and Ayurveda medicines to boost immunity but the villagers themselves avoid meeting outsiders. This is why those who go out for fishing dont return with infection.” explained Bhanuben Shiyal, Sarpanch of the village. Shiyalbet falls in Jafrabad taluka of Armeli district and is totally dependent on Jafrabad and Rajula for all its needs.

Almost 99 percent population of the village is engaged in fishing activity, while their exposure to the world outside is very minimal as ration and medicines comes in boats to the village. The fishermen only go for fishing in the deep seas and contact with mainland is almost a luxury. “We are also taking all the precautions since last year which have saved us till now,” Shiyal added. Of the villages total population, 4,000 people go out to fish, while the rest including women and old people remain in the village.

District development officer (DDO) of Amreli, Tejas Parmar said, “The village recorded only two positive cases last year, while there has been not a single case in the second wave. We have completed 52 percent vaccination of the first dose for people above 45 years of age in the village.” Parmar further said that no outsiders come into the village and only those who go for fishing leave in their boats.

All education institutes are also closed and students too don't need to go outside. Again, there is scant population of Amreli people in Jafrabad and Rajula taluka and so chances of getting infected from people visiting from Surat too is almost nil. Female health workers from the sub primary health centre in the village are available to address any health related needs.

### **Goa: Can be India's fisheries hub, Rs.400 cr investment discussed with CM'**

<https://www.hindustantimes.com/india-news/goa-can-be-india-s-fisheries-hub-rs-400-cr-investment-discussed-with-cm-101612691243212.html>

"Union Minister Giriraj Singh on Sunday said that Goa has the potential to become the fisheries hub of the country and held a discussion with Goa Chief Minister Pramod Sawant and State Fisheries Minister Filipe Rodrigues about a holistic investment of Rs.400 crore for the fisheries sector in Goa. ""Goa has the potential to become the fisheries hub of the country. I have discussed with Goa CM and Fisheries Minister of the state about a holistic investment of Rs.400 crore for the fisheries sector in the state.

Out of this, Rs.41.47 crore has been approved already,"" said Singh while addressing a press conference. Sea cage culture will be promoted in Goa, the Union Minister added. ""It will lead to an increase in the export of fishes from the state. To be started with 1000 cages, along with the state's fisheries department,"" said Singh. "

"Development of a hygienic wholesale fish market with an investment of Rs.50 crores and a fish aquarium of international standards for the purpose of tourism in the state of Goa has been discussed with the State Government,"" he added. Singh further said the ""Sagar Mitra"" scheme will be implemented in the villages of Goa for educating the local youth dependent on fishing and fisheries Sea-weed culture and ornamental fish culture will be strengthened in the state of Goa. "

"On basis of discussions with the Government of Goa, it has been decided to develop 30 new landing centres for fisheries as well as tourism purposes. Road connectivity from jetties and landing centres to the villages will also be ensured,"" he added.

### **How India's fishing industry could be powered by the sun**

<https://www.thehindu.com/sci-tech/energy-and-environment/solar-power-offers-clean-energy-solution-to-fishing-communities-in-india/article37450899.ece>

"Solar energy projects have become a means of empowerment among rural and remote communities in India, especially those that have never been on the conventional electricity grid. Statistics published by the Ministry of New and Renewable Energy indicate that with about 300 sunny days in a year, India's land area can be used to generate around 5,000 trillion kilowatt-hours (kWh) annually.

According to International Energy Agency's Renewables 2020 report, the country has the world's fifth-largest installed solar power capacity, with 38 gigawatts (GW) in 2019, and

production of 54 TWh of electricity. Removing fossil fuels from the picture is one of the ways to signal traditional professions like fishing to a more environment-friendly way of operation.

### **Illegal driftnet use widespread in Indian Ocean, Greenpeace says**

<https://www.reuters.com/article/environment-oceans/illegal-driftnet-use-widespread-in-indian-ocean-greenpeace-says-idUSL4N2M220B>

"Greenpeace has uncovered widespread use of illegal driftnets in the northwest Indian Ocean, which it says are decimating marine life in what is one of the world's most ecologically vulnerable fishing grounds. During two weeks at sea, the environmental organisation says it filmed seven ships within 20 square miles (50 sq km) using driftnets to catch tuna. It detected another eight vessels on radar using navigational patterns that also suggested use of nets.

"If yellowfin tuna continues to decrease at the current rate then food security in the region, as well as local economies is going to take a huge hit," Greenpeace said. Nicknamed the "walls of death" for the quantity of other sea life they catch in addition to the fish they are set for, the nets were banned by the United Nations 30 years ago.

Greenpeace shared footage with Reuters of sharks and manta rays that had been killed in the nets, set some 500 miles (800 km) east of Somalia. "Because of the issues of bycatch we're concerned about all fish in the Indian Ocean," it said, adding that the same area had also seen a huge increase in unregulated squid fishing.

"What's the point in a U.N. ban on driftnets when all the fishing vessels we saw are using driftnets?" asked Will McCallum, head of oceans for Greenpeace UK, in comments to Reuters. "There is little to no enforcement in international waters... We need a global ocean treaty ... to resolve this enormous governance gap."

Nations are due to meet in August for negotiations over such a pact, designed to attempt to set up safeguards for parts of the ocean similar to reserves established on land. Last month, representatives of 30 nations met to discuss ways to save fast-depleting tuna stocks in the Indian Ocean. The meeting ended without any new agreement.

### **In Jaffna waters, India sinks China bid, but an old net problem rises**

<https://indianexpress.com/article/world/in-jaffna-waters-india-sinks-china-bid-but-an-old-net-problem-rises-sri-lanka-govt-7875678/>

"The Sri Lanka-India Memorandum of Understanding for the project was among several signed in March during the visit of External Affairs Minister S Jaishankar, as Delhi extended a helping hand to Colombo during the economic crisis with financial assistance worth \$2.4 billion.

The Sri Lanka-India Memorandum of Understanding for the project was among several signed in March during the visit of External Affairs Minister S Jaishankar, as Delhi extended a helping hand to Colombo during the economic crisis with financial assistance worth \$2.4 billion.

All of 50 sq km, Delft, also known by its Tamil name Neduntheevu, is located in the Palk Strait. A choppy one-hour boat ride from a Jaffna jetty called Kurikattuwan, Delft lies just 45 km north-east of Tamil Nadu's Rameswaram. In between is Katchatheevu, which India ceded to Sri Lanka in 1974.

Sri Lanka's territorial waters in this entire area are a matter of severe contestation between Indian and Sri Lankan fishermen. "300 to 500 boats. They come at night on Mondays, Wednesdays and Saturdays. Those are their fishing days, and they come that close," said 42-year-old Regeeswaran, pointing to a buoy not far from the shore.

His neighbour, J Arokiyadas, complains that when the Sri Lankan naval unit stationed on the island arrests Indian fishermen trespassing in these waters, "they get calls from the big guys in Colombo ordering their release".

### **India and Bangladesh: High salinity threatens fish spawning in Halda river**

<https://www.thedailystar.net/backpage/news/high-salinity-threatens-fish-spawning-halda-river-2100173>

"The Halda river, the lone natural breeding ground of carp-like fish in South Asia, has seen a poor yield of eggs mainly due to heavy salinity in the river water this year. Saline water entered the river from the sea due to cyclone Yaas. Besides, there was absence of favourable natural phenomena, including heavy torrential rain, gusty wind and thunderstorm, which contributed to the poor breeding of fish, said an eminent Halda researcher.

Brood fish spawned on Wednesday night. Several hundred egg collectors on both banks of the Halda in Hathazari and Raozan upazilas were frustrated as they expected more eggs this year for the decrease in manmade activities that pollute the Halda. The authorities concerned had taken multiple measures to this end. The government last year declared the river as Bangabandu Fisheries Heritage, banning 12 types of activities, including fishing, sand lifting, water withdrawal, plying of mechanised boats, construction of dams, and dumping of any industrial or domestic waste in the river. Apart from this, a unit of river police was deployed to oversee the river.

Visiting the areas on the banks of the Halda, this correspondent talked to around 20 egg collectors who attributed the poor spawning of fish to their bad luck. Monindro Jolodas of Ramdasmunsir Hat in Hathazari told this paper that once they used to live off by fishing in the Halda. As there has been a ban on fishing in the river since 2010, they wait for this time to collect eggs. "This year, we never thought that there would have been such poor spawning of fish. It is our bad luck as there was no enough rain and water from hills.

And on top of that, a rise in salinity in Halda water forced the brood fish to lay less eggs," he said. He added that he collected three buckets of eggs last year, but this year he only got half a bucket of eggs. Abu Bakkar, a resident of Pondit Bari along the Halda, said he sold fish fry worth Tk 18,000 last year. This year the eggs he managed to catch would not hatch as those are

affected by salinity. Echoing the view of Bakkar, Elias Hossain, a seasoned egg collector of Halda, said such salinity was seen in 1991 when a strong cyclone hit the Chattogram coast. "I have never seen such salinity except this time since then.

The cyclone that hit India contributed to a steep rise in salinity in the Halda water this time," he added. Manzoorul Kibria, professor of Zoology department at Chattogram University, also a renowned Halda researcher, has found 77 times more salinity in Halda water in three consecutive tests at Halda Research Laboratory on Tuesday. "The salinity found in Halda water is 36.9 PPT [parts per thousand] where the standard is 0.5 PPT," he said.

No one has ever seen this massive level of salinity. Cyclone storm Yaas has brought saline water to the Halda river from the sea, he said. Farhana Lovely, fisheries officer of Chattogram Fisheries Department, told The Daily Star that they were collecting information of egg collection.

The fisheries and livestock ministry has formed a committee to assess the egg collection, which will send their tally to the secretary of the ministry. Later, the ministry will reveal the total amount of egg collection, she added. Around 25,536kg of eggs were collected from the Halda last year. About 1,000 people collect eggs from the river.

### **India and Bangladesh: Jadukata river buzzing with lives, livelihoods again following SC verdict**

<https://en.prothomalo.com/environment/jadukata-river-buzzing-with-lives-livelihoods-again-following-sc-verdict>

"The Jadukata is one of the 54 transboundary rivers flowing between India and Bangladesh. Originating from the Meghalaya Hills of India, it flows into Bangladesh through Sunamganj's Tahirpur and into Bishwamvarpur upazilas. Known for its scenic beauty, the Jadukata is a reservoir of natural resources. Mountains stand still near the river and the sky seems to lean on the mountains. Barik Tila sits on top of the river.

A Supreme Court decision in June designated two balumahal (sand quarries) in Jadukata. Jadukata-1 is flowing beside Barik Tila. Shimul Bagan, the garden of cotton trees, is on the other side, and this is where another sand quarry called Jadukata-2 has been designated. The ruling of the Supreme Court finally allowed for sand to be lifted from the river again, after being barred for years over environmental concerns.

The area from which sand can be legally mined has been very strictly demarcated. Additionally, it was stipulated that no heavy-duty machinery could be used in the extraction of sand. Since 12 June, workers have been lifting sand from the river again, but now by hand in an environment-friendly way as no one is allowed to extract sand with mining explosives. The precious natural resource in the river is the unlimited sand.

Locals say that the world's best sand is found here, and certainly the sand from Sylhet's hilly rivers enjoys a very good reputation in the construction industry. Like any fast-developing

country witnessing construction booms, sand is in high demand in Bangladesh. The living standards of the workers in the Haor area developed around the Jadukata. Almost all working people lost their jobs because of non-settlement of leases due to legal complications and lawsuits in the high court.

Visiting the area on Wednesday, the area is buzzing again with workers around the two designated quarries. Thousands of workers are lifting sand in small boats. The sand is being sold on to big traders for cash. About 50,000 workers have returned to their old jobs. Each worker is earning Tk 1,500 per day. Shukur Ali, a labourer from Miyarchar, said, "I was in a lot of trouble because of the pandemic as the river remained closed. I wanted to run away from home.

But in the end I didn't have to go anywhere as the river opened. I can earn Tk 1,500 by lifting sand from the river." He also said his family is spending their days happily now. "I used to spend half a day starving as the river was closed. I am happy now with my family after opening the river," said Alamgir of Ghagtia village. Every worker UNB spoke to expressed the same. It means the environmentalists' concerns may be legitimate, but the court verdict has provided a final settlement that all parties must accept. Besides, numerous people, including boat owners and traders, are earning their livelihoods in some way or other from the river.

With the people of the area having money to spend, trade has increased in the markets around the river. Store owners say they are doing up to 50 times more business. In the evening, the workers buy fish and meat from the market as they wish. The prices of the products are also increasing in the market but the workers do not care about that. They have pent-up demand to be met. This is how the economy is growing in the area.

Lessee Selim Ahmed said, "The workers of Haorpar were living an inhuman life as the Balu Mahal was closed due to some litigation. At the end of the legal battle, the Supreme Court returned a verdict in my favour. Now I get a legal lease. And I have nothing else to worry about lifting sand from the river." Deputy commissioner Jahangir Hossain said the lessees have been made aware of the boundaries for sand mining in the Jadukata River. "When I visited the area, I saw the workers here mining sand from the river with super enthusiasm.

Those who had long been unemployed, it is very good to see them active now," he said. Upazila nirbahi officer (UNO) Md Raihan Kabir, who personally demarcated the boundaries of the two quarries, said that the only source of livelihood for the people of Haorpar is the Jadukata River. "Workers are earning by working in this river.

The workers are doing well with their families by working in an environment-friendly way," he said. He has also been vigilant against any violations of the court's stipulations. On 21 June, the UNO led a mobile court that fined two boats Tk 50,000 each for straying outside the boundaries set for sand mining.

**India and Bangladesh: John Kerry appeals to Bangladesh to stop coal-fired power plant near mangrove forest**

<https://menafn.com/1101916537/John-Kerry-appeals-to-Bangladesh-to-stop-coal-fired-power-plant-near-mangrove-forest>

"The Bangladesh government has taken up various initiatives to protect the Sundarbans mangrove forests. But at the same time, it is setting up a coal-fired power plant at Rampal near the forests. Experts have repeatedly said that the power plant will put the mangrove forest at risk, but the government has paid no heed.

During his six-hour trip to Dhaka on April 9, US President Joe Biden's special envoy for climate change, John Kerry, bluntly raised the Rampal plant issue during his official talks with Foreign Minister AK Abdul Momen, according to sources present at the talks. Present at the meeting were the State Minister for Environment, Forests and Climate Change, Md Shahab Uddin, the State Minister for Foreign Affairs Shahriar Alam and Foreign Secretary Masud Bin Momen.

However, Kerry didn't raise the Rampal plant issue in his talks with Prime Minister Sheikh Hasina. But he did say in a general way, that coal-fired power plants are one of the main causes of environmental damage. He drew attention to the US opposition to coal-fired power plants.

The Bangladesh Foreign Minister, Abdul Momen, on his part, highlighted the various steps taken by Bangladesh to tackle threats from climate change and to protect the Sunderbans. At this point Kerry said that he was confused about Bangladesh's stance on the Sundarbans.

On the one hand it is taking steps to protect the forest, and on the other it is taking up projects like the Rampal coal-fired power plant. 'How is this possible', he asked. Several sources present at the meeting said that John Kerry raised the Rampal issue again towards the end of the talks. 'Can I ask an outrageous question? Can you stop Rampal?' John Kerry was then told that Bangladesh has always given importance to environmental protection. Despite resource constraints, various steps have been taken to face the climate change challenge.

The protection of the Sundarbans is being given due importance in the construction of the Rampal power plant, the Bangladesh Foreign Minister said. Several sources in the government, on condition of anonymity, told Prothom Alo that at present, work on the Rampal power plant has advanced considerably.

The government would not be able to do anything about it now, even if objections were raised, they added. Earlier in 2017, the former US Vice President, environmentalist Al Gore, had appealed to Prime Minister Hasina to halt the construction of the Rampal power plant.

He had made this appeal in June that year while sitting next to Sheikh Hasina at a working session in the World Economic Forum held in Davos, Switzerland. Prime Minister Sheikh Hasina asked Al Gore to visit Bangladesh to see the Sundarbans and see if the project is harming the environment. In 1997, the United Nations Educational, Scientific and Cultural Organization (UNESCO) declared the Sundarbans as a World Heritage Site.

The Bangladesh Power Development Board and India's National Thermal Power Corporation are jointly constructing the 1320 MW power plant at Rampal in Bagerhat, next to the Sundarbans,

amidst opposition from environmentalists at home and abroad. UNESCO has been raising objections to the project since 2018. A study carried out by UNESCO and the International Union for Conservation of Nature (IUCN) on the project says that it will do irreparable harm to the Sundarbans.

This may also cause the Sundarbans to lose its status as a World Heritage Site, UNESCO has repeatedly warned. Speaking to Prothom Alo a member of the national committee for the protection of the Sundarbans and general secretary of Bangladesh Paribesh Andolan, Sharif Jamil, said that top scientists of the world have observed that the technology used in the Rampal project is of low standard. In most countries coal-fired power plants are being closed down.

### **India and Bangladesh: Pushed deep into Sundarbans, these Indians brave tigers, storms**

<https://www.aljazeera.com/news/2021/1/14/pushed-deep-into-sundarbans-these-indians-brave-tigers-storms>

"On a warm November afternoon, Parul Haldar balanced precariously on the bow of a small wooden dinghy, pulling in a long net flecked with fish from the swirling brown river. Just behind her loomed the dense forest of the Sundarbans, where some 10,000 square km (6,213 sq miles) of tidal mangroves straddle India's northeastern coastline and western Bangladesh and open into the Bay of Bengal. Four years ago, her husband disappeared on a fishing trip deep inside the forest. Two fishermen with him saw his body being dragged into the undergrowth – one of a rising number of humans killed by tigers as they venture into the wild.

That Haldar, a single mother of four, is taking such risks is testament to growing economic and ecological pressures on more than 14 million people living on the Indian and Bangladeshi sides of the low-lying Sundarbans. They have led to reduced dependence on agriculture, a rising number of migrant workers and, for those like Haldar who cannot leave the delta to work elsewhere, a reliance on the forests and rivers to survive.

"When I enter a dense forest, I feel like I'm holding my life in my hands," said the 39-year-old, sitting outside her ramshackle three-room home on the Indian island of Satjelia after returning from a fishing expedition. In the small yard, her father and some friends smoked wood to use it for building a new boat. Haldar fishes in the river most days. Twice a month, she travels deeper into the forests to catch crabs, rowing six hours on a rickety boat along with her mother and staying in the undergrowth for several days.

Almost all of the 2,000 rupees (\$27) she makes each month to run her household and send her youngest daughter, Papri, to school comes from fishing and crabbing. Her elderly father and other relatives look after the girl while she is gone. "If I don't go to the jungle, I won't have enough food to eat," Haldar told Reuters news agency. It is 11-year-old Papri who keeps Haldar on the Sundarbans rather than seeking work elsewhere. If she goes, there is no one to take care of the child, she said.

"No matter how hard it is, I want to educate her." Life has been getting harder in the Sundarbans. Many of the islands lie below the high-tide water level, meaning homes and farms are often

protected by earthen embankments that are frequently breached. With every rupture, rivers swallow up more land and inundate fields with saline water, wilting crops and rendering plots infertile for months. As climate change pushes up sea surface temperatures, the cyclonic storms that barrel in from the Bay of Bengal have become fiercer and more frequent, particularly in the last 10 years, researchers said.

An analysis of 1891-2010 data showed the Indian Sundarbans saw a 26 percent rise in tropical storms, with the frequency spiking in the last decade, according to a 2020 paper in the *Environment, Development and Sustainability* journal by researchers from the Jamia Millia Islamia university in New Delhi. These more powerful cyclones bring bigger storm surges which can smash through, or rise over embankments, causing widespread damage, a phenomenon not limited to the Sundarbans. “I think the diverse environmental assaults we’re seeing in the Sundarbans are also occurring in many coastal wetlands globally,” said William Laurance, a distinguished research professor at Australia’s James Cook University.

“These ecosystems appear to be caught in a vicious vice – between rising sea levels and intensifying storms on the one side and rapid land-use change and intensifying human uses on the other.” In May, Cyclone Amphan crashed into the Sundarbans, bringing winds of 133km/hour (83 miles/hour), killing dozens of people, flattening thousands of homes and destroying embankments. More damaging weather followed.

Walking over broken embankments on a southern corner of Kumirmari Island, Nagin Munda stared down at his half-acre paddy field that had been flooded by saline water in October. “I have no fish left in my pond, no vegetables in my garden, and half my paddy crop is gone,” said the 50-year-old farmer. Across Kumirmari, some 250 acres (101 hectares) of farmland were flooded last year, affecting more than 1,500 families, local government official Debashis Mandal said. In recent decades, an estimated 1,000 acres (405 hectares) – more than 15 percent of Kumirmari’s total area – has been eroded away, Mandal said, making farmland even scarcer.

“We are not able to stop it,” he said, “The river is eating away our land.” According to the Sundarban Tiger Reserve’s director, Tapas Das, five people have been killed by tigers in India’s Sundarbans since April. Local media, which closely follow such attacks, have reported up to 21 deaths last year, up from 13 each in 2018 and 2019. Many attacks are not recorded, as families are reluctant to report them since it is illegal to go far into the forests.

“The number of reported cases of human-wildlife conflict and fatalities are certainly alarming,” said Anamitra Anurag Danda, a senior visiting fellow with the Observer Research Foundation think-tank. A new factor behind the increase has been the coronavirus pandemic, which trapped tens of thousands of people like the Mondal family on the Sundarbans when they would normally be earning money as labourers elsewhere in India.

In late September, a group of more than 30 men left Kumirmari late in the morning and headed into the forest. Their mission was to collect the body of Haripada Mondal, 31, who had been attacked by a tiger during a fishing expedition. Guided by the fishermen who had accompanied Mondal on his fateful trip, the men first spotted a pair of red shorts caught in the mangrove trees, two members of the party said.

Following drag marks in the soft mud, the group went deeper into the woods, wielding sticks and bursting firecrackers to scare away any tigers, they added. “I found his head first,” said Mondal’s eldest brother, Sunil. The rest of the body lay a few feet away. The youngest of the three brothers, Haripada Mondal, like others in his area, dropped out of school early to find work.

Most years he would leave the Sundarbans to work as an agricultural labourer in southern India and on construction sites near the eastern city of Kolkata, his brother-in-law Kamalesh Mondal said. He grew a crop of paddy on a leased plot behind his small mud house, where he lived with wife Ashtami and a nine-year-old son. “Life was OK,” said Ashtami, 29. “We made ends meet.” Mondal, the sole breadwinner, returned home from a construction job in mid-March, his family said, days before India’s government announced a nationwide lockdown to slow the spread of the coronavirus.

The lockdown halted much of the country’s economy, stalling the informal sector that supports most migrant workers and sending millions back home, including to the Sundarbans. For months, Mondal sat at home without work as savings dwindled until, desperate for money, he decided to go fishing on the rivers encircling Kumirmari, Ashtami said. “He said he would go nearby to fish and make 50-100 rupees to help with household expenses,” she said. He left home before dawn, rowed into the forests and was killed. “If there was no lockdown or no coronavirus, he would have left here to work.”

### **India and Bangladesh: Think Teesta conservation beyond geopolitics, hydropower development: Experts**

<https://www.tbsnews.net/bangladesh/infrastructure/resolve-teesta-issue-bilaterally-ainun-nishat-360124>

"While speaking at the virtual inaugural session of the three-day 7th International Water Conference on Teesta River Basin, they said state parties should assess the morphology and hydrology of the basin and give priority to its ecosystem before undertaking any infrastructural development project such as the construction of run-off-the-river dams. Professor Imtiaz Ahmed, professor of international relations at Dhaka University, presented a keynote paper at the event organised by Action Aid Bangladesh.

He said the Indian government is planning to harness 5,494MW electricity in Sikkim by at least 31 hydropower projects and that some other run-off-the-river dams are going to be constructed in West Bengal. He also seemed skeptical about the possibility of an agreement on Teesta between India and Bangladesh, which has been stalled for the last 10 years. Referring to the Teesta River Comprehensive Management and Restoration Project (TRCMRP), he said there is a chance of a win-win situation for Bangladesh, India and China if Bangladesh can enhance water storage capacity to save monsoon-time discharged water.

Imtiaz also reminded the guests of the historic High Court order on 10 July 2019 that entitles rivers as living entities. A river means water, energy, biodiversity and sediment, he said. The inaugural session was followed by a thematic discussion. Brac University's Professor Emeritus

Ainun Nishat chaired the session. He said India diverts Teesta water unilaterally which is unacceptable and a violation of existing laws of India. Ainun Nishat expressed his confusion about the Teesta River Comprehensive Management and Restoration Project. He said such a project would kill the ecosystem and biodiversity of the Teesta basin. He also cited the negative impacts of silt-trap formed just before the Teesta Barrage at Dalia in Lalmonirhat.

Rohan D'Souza, associate professor at the Graduate School of Asian and African Area Studies of Kyoto University, said the fate of the River Teesta must be decided whether the water is diverted for irrigation or be flown to help fish move. "The voice of fishermen needs to be heard. The water sharing debate should be framed upon the ecological unit rather than the average water flow unit," Rohan said.

Professor Ashok Swain, director at Research School of International Water Cooperation under Uppsala University, said leadership in West Bengal is using Teesta as a matter of sub-national politics. The undemocratic attitude of the regional leadership is undermining voices of the Teesta riverines, he added. Iftexhar Iqbal, associate professor of Arts and Social Sciences at the Universiti Brunei Darussalam, said the solution of the Teesta impacts: flooding in monsoon and drought in dry season, lies upon what gets the priority. "

"Is the problems of Teesta people addressed or the hydroelectricity development agenda rule the issue?" he said. Former information minister and parliament member Hasanul Haq Inu, Action Aid International Bangladesh Society Chairman Barrister Manzoor Hasan and Action Aid Bangladesh Director Farah Kabir also addressed the discussion.

### **India and Bangladesh: To expand cooperation in river pollution mitigation, flood management**

<https://www.deccanherald.com/national/india-bangladesh-to-expand-cooperation-in-river-pollution-mitigation-flood-management-962980.html>

"India and Bangladesh have agreed to expand cooperation across the entire gamut of water resources issues including framework for sharing of river waters, mitigation of pollution, river bank protection, flood management, basin management, according to an official statement on Wednesday. The India-Bangladesh Water Resources Secretary level meeting under the framework of the Joint Rivers Commission took place on March 16 here.

The Indian delegation was led by Pankaj Kumar, Secretary (Water Resources, River Development and Ganga Rejuvenation). The Bangladesh delegation was led by Kabir Bin Anwar, Senior Secretary, Ministry of Water Resources. Noting that India and Bangladesh share 54 common rivers which directly impact the livelihood of people in the two countries, both sides commended the close cooperation that exists between them in the matter. "

"Both sides agreed to expand cooperation across entire gamut of water resources issues including framework for sharing of river waters, mitigation of pollution, river bank protection, flood management, basin management, etc.," the statement said. A Joint Technical Working Group will provide inputs on the matter. The discussions were substantive and held in a cordial

atmosphere, it added. Both sides also agreed to schedule the next secretary-level meeting in Dhaka on mutually convenient dates.

### **India and Bangladesh: Transboundary rivers support millions of riverine communities**

<https://www.sentinelassam.com/topheadlines/livelihoods-along-india-bangladesh-trans-boundary-rivers-in-peril-584771>

"India and Bangladesh share 54 transboundary rivers and earlier these rivers greatly supported the livelihoods of millions of riverine communities in both countries and facilitated the locals in numerous ways. However, over the years the condition of these rivers worsened, adversely affecting the economic condition of lakhs of people.

Though the Inland Waterways Authority of India (IWAI) and the Bangladesh Inland Water Transport Authority (BIWTA) have been jointly trying to boost trade and transportation using National Waterway-1 (Ganga river) and National Waterway-II (Brahmaputra river), the condition of the riverine communities has not improved.

India's Jaipur-based think-tank and NGO -- CUTS International -- under a regional programme "'Transboundary Rivers of South Asia (TROSAs)'" studied the rivers' condition, the dwindling economy of the riverine communities and the forest and environmental situation along the rivers. Senior Programme Officer of CUTS International, Sumanta Biswas said that increasing urbanization, deforestation, intensive agricultural processes besides the effect of climate change have adversely impacted the normal course of many rivers leading to unpredictable floods, siltation, declining navigability and increasing erosion and pollution.

"Several dams were constructed for different purposes including power projects and irrigation and these have also stifled the downstream flow of waters. Due to heavy siltation during floods, the rivers have become shallow and wide causing erosion of their banks every year," Biswas told IANS. He said: "'Due to scarcity of fish in these rivers, the fisherfolk are compelled to work elsewhere as labourers. For many decades, the riverine communities shared close cultural ties and similar lifestyles and depend on the rivers for agriculture, fisheries and navigation.'"

Biswas said that the communities living upstream and downstream of the rivers have their diverse perceptions and interests to utilize the rivers and these dissimilar objectives often affect them and the rivers. "'Mutual misperceptions among the upstream and downstream communities need to be defused through consultative dialogue,'" he observed and suggested that to save and secure the river centric livelihoods the rivers should be protected..."

### **India and Maldives: Sign agreements on wide range of domains including fish processing, public broadcasting**

<http://www.newsonair.com/News?title=India%2C-Maldives-sign-agreements-on-wide-range-of-domains-including-fish-processing%2C-public-broadcasting&id=410252>

"India and Maldives on Saturday signed agreements on wide range of domains including fish processing, public broadcasting, sustainable urban development, road infrastructure and housing. The agreements were exchanged after the talks between External Affairs Minister Dr. S. Jaishankar and his Maldivian counterpart Abdulla Shahid in Male.

The agreement in the field of broadcasting is for cooperation between Prasar Bharati and PSM, the official State Media of Maldives. The MoU intends to facilitate collaboration and capacity building in the field of public broadcasting.

Dr Jaishankar and Mr Shahid reviewed the entire gamut of bilateral ties as well as progress of ongoing bilateral projects and held discussions on the ongoing COVID situation, including India's continued assistance to the Maldives for its post-COVID economic recovery.

Dr Jaishankar also handed over one lakh additional doses of COVID vaccine to Mr Shahid and Maldivian Health Minister Ahmed Naseem. Dr Jaishankar reached Male today on the first leg of his two- nation visit to Maldives and Mauritius. During the visit, the External Affairs Minister will call on President of Maldives Ibrahim Mohamed Solih and have substantive discussions with the Ministers for Foreign Affairs, Defence, Finance, Economic Development and Planning and Infrastructure. He will also call on Speaker Mohamed Nasheed and meet with other political leaders.

### **India and Maldives: To sign pact on mega Greater Malé Connectivity Project**

<https://www.dnaindia.com/india/report-india-maldives-to-sign-pact-on-mega-greater-mal-connectivity-project-2907894>

"India and Maldives will sign a contract on the mega Greater Male Connectivity project (GMCP), the largest infrastructure project in the country. The project is a 6.74 km long bridge and causeway link that will connect the national capital Male with the islands of Villingli, Gulhifalhu and Thilafushi. It is funded under a grant of \$100 million and a Line of Credit of \$ 400 million from India.

The signing ceremony will take place at 11 am and will see the participation of four ministers of Maldives— Ministers of National Planning & Infrastructure Mohamed Aslam, Minister of Economic Development Fayyaz Ismail, Finance minister Ibrahim Ameer, Transport Minister Aishath Nahula, Maldives foreign secretary, Indian High Commissioner Sunjay Sudhir and senior Management from AFCONS. The contract will be signed between India's AFCONS and the Maldives government.

The project was first discussed during EAM Jaishankar's September 2019 visit to the country. During the visit, President Solih and Foreign Minister Abdulla Shahid had requested such a project, one that will not only be a connectivity link but become the economic lifeline of the country. The project essentially connects four main islands of the country, where almost half of the Maldivian population lives.

The project will use solar power for lighting purposes. Once completed, it will dwarf the 1.4 km long Sinamalé Bridge which connects Male with Hulhule' and Hulhumalé. The Bridge was built with Chinese support was completed in 2018. India has been involved in other infra projects of the country.

This includes expansion of the airport at Hanimadhoo and gan, Roads and Reclamation in Addu, expansion of fisheries plants, cricket stadium in Hulhumalé, water and sanitation project in 34 islands and road project in the Southern city of Addu. All in All, the Indian line of credit is being used in 10 projects which include a cancer hospital whose survey work is in progress. Earlier this year, an additional amount of \$4.5 mn for High Impact community development projects was approved by the Indian government.

### **India and Nepal: China's building spree in Nepal is putting strain on the Himalayan ecosystem**

<https://scroll.in/article/1014734/chinas-building-sprees-in-nepal-is-putting-strain-on-the-himalayan-ecosystem>

"Trucks stir up dust on the gravel road here in Syabrubesi, an eight-hour drive from Kathmandu, the capital of Nepal. From Syabrubesi, the road winds 11 km north to the border with China, the only open route north since a 7.8 magnitude earthquake in 2015 devastated much of the region. The road itself is being widened and the trucks carrying rock and gravel here are part of China's global Belt and Road Initiative, one of many infrastructure projects in Nepal being financed by its powerful neighbour.

Next to the road, a group of Nepali workers are building a tunnel through a mountain, watched over by a Chinese supervisor. Further up the road, Neehima Sangbo Tamang is bracing for the inevitable moment when his land and home are lost to the road-widening project. "We will have to move shortly," he said, adding that the government's promised compensation will not cover for the loss. China's role in Nepal has intensified in the period since the 2015 earthquake, mostly in the form of investments in rebuilding projects.

For decades, Nepal's southern neighbour, India, was its main economic partner, a role that is now being challenged by China. In 2019 alone, China initiated a series of projects, including factories and hydropower plants, worth \$2.4 billion in Nepal – about 7% of the latter's GDP. The Belt and Road Initiative, under which China is building a web of roads, railways, power plants and other infrastructure across countries along key trade routes, arrived in Nepal in 2017. Here, it includes airports, hydroelectric plants and paved roads.

There's also a planned 70-km railway line from Gyirong in the Tibet Autonomous Region to Kathmandu, which has raised concerns in India about Beijing's growing influence in the region. Finding a balance But there is more than geopolitics at stake under the infrastructure boom. Tourism accounted for nearly 8% of Nepal's economy prior to the Covid-19 pandemic, and was the fourth-largest industry by number of people employed.

More than half of the million-plus foreigners who arrived pre-pandemic came to visit national parks, including the Himalayan ones that are home to the highest peaks on Earth. Yet many of the road and tunnel projects run through sensitive environments, including national parks, and the construction of hydropower plants has been criticised by environmental organisations and local communities for destroying river ecosystems. Shakti Bahadur Basnet, Nepal's minister of forests and environment, said he is well aware of this emerging problem.

“We need to find a balance to preserve nature and develop our infrastructure,” he tells Mongabay at his office in Kathmandu, adding that the government conducts environmental assessments in sensitive areas before any projects are allowed to commence. “It is not prioritised to develop those areas.” The aim is to keep protected areas intact, he said. “Our policy is not to build roads in the core of national parks but instead in buffer zones,” Basnet said. He adds Nepal has ambitious replanting plans ahead.

Forty-five percent of the country is already covered in various forms of forests, and 24% is protected in national parks and conservation areas. The government wants to add to that tree cover. “We have a much higher percentage of protected areas than the international standard of 14%, but we still want to plant more forests,” Basnet said. “We will focus on parts where there is no forest, and areas prone to landslides, as well as planting trees in urban areas.” He adds the government will plant native trees, as well as herbal and fruit trees.

Basnet said infrastructure projects, particularly road building, will boost development in Nepal by creating jobs and lowering transportation costs and travel time. Many parts of the Terai, the lowland region of southern Nepal, have already seen construction projects benefit local economies. But in the country's less-developed Himalayan region, where tourism and traditional livelihoods such as yak grazing and small-scale farming are the dominant economic drivers, many worry the environmental and social costs will be too high.

They warn that infrastructure projects will pay little consideration to fragile alpine ecosystems and that carving up the land for roads and tunnels could exacerbate landslides caused by the yearly monsoon. Raj Bhatta, a trekking guide in the Himalayas for the past 17 years, is among those who are wary of the projects in this region. He said they will ruin villages, farmland and trekking trails. The explosives being used to carve tunnels through the mountains disrupt farming activity, he said, and push wildlife out of their natural habitat.

Bhatta cites reports of monkey troops raiding villages for crops. “Nepal needs roads and hydropower, but at the same time the government needs to develop our country sustainably,” he said. He adds that many nature trails that previously wound through serene and ancient landscapes have been expanded into roads, which has affected the trekking industry negatively: “Tourists do not want to trek dusty roads.”

Critics say the new roads will also open up access for illegal loggers into once-remote forests and help fuel the trade in endangered species, such as parts from tigers, rhinos and elephants, which are highly prized in China. Natural haven Raj comes from a village near Langtang National Park, Nepal's first Himalayan national park, created in 1976. A day's drive from Kathmandu, the Langtang Valley is one of Nepal's most popular trekking sites and rich in biodiversity. The park

is home to species like the red panda (*Ailurus fulgens*), as well as deer, wild boars, Nepal gray langurs (*Semnopithecus schistaceus*) and occasionally Indian leopards (*Panthera pardus fusca*).

The more elusive goat-like Himalayan tahr (*Hemitragus jemlahicus*) and snow leopard (*Panthera uncia*) prowl the park's higher altitudes. The narrow trekking trails through Langtang National Park weave through a lush subtropical forest, where ferns and mosses clothe the tree trunks, and rivers rush by from snowcapped peaks and glaciers. These forests, at an altitude of 4,000 meters, are home to Indigenous Tamang communities.

Now, this natural haven is under threat from modern development. "I have heard plans of road construction in Langtang," Raj said, adding he worries that the nation's exporting electricity further up the gravel road from Syabrubesi, and closer to the Chinese border, lies the village of Timure. Since the 2015 earthquake razed the area, the rebuilding, with Chinese assistance, has gone remarkably quickly.

Semi-finished hotels and restaurants, made of concrete and wood, dot the side of the road. Prior to the pandemic, the area was buzzing with foreign tourists, Nepali truck drivers, Chinese businessmen, and officials. Work on the Rasuwagadhi hydroelectric project, part of China's Belt and Road Initiative, resumed here in 2016, despite protests from locals who blamed the dam for mass fish deaths.

Taxi driver Njawang Dorje, one of around 20,000 Tibetan refugees living in Nepal, said the Chinese presence in the village has been good for business, but he still resents it. He said the environment is ruined and describes the river where the dam is built as "once pure white rapids, and now ... a clogged-up waterway with filthy dark water". The national park will end up like the famous Annapurna Circuit, where roads have been built. Another such area is the Manaslu Conservation Area, also in the Himalayas.

The Manaslu treks are, like in Langtang, famous for their breathtaking scenery. Manaslu, centred around the world's eighth-highest peak of the same name, is also protected and of high value to the trekking industry. Despite this, several road projects are underway that will cut through its ancient forests and isolated valleys. "I am really worried," Raj said. "This will destroy our environment and scare away the tourists."

A detonation shakes the massif above the river; work is still underway on the 111-megawatt plant. It will not benefit the Nepali people, Njawang Dorje said, since the electricity will be sold to India. "It is only the government making money, and at the same time China controls the river and road," he said. For Basnet, the minister of forests and environment, Nepal's rivers cutting through mountainous terrain are an untapped powerhouse.

The country currently generates 787-megawatt of hydroelectricity, but could potentially boost this to 1,00,000 megawatt within a decade, with the help of China, Basnet said. That is more power than Nepal needs, and it can sell the surplus to neighbouring countries. "Nepal takes advantage of the collaboration, both directly and indirectly," Basnet said. "Hydropower generates electricity that we can use in our factories, as well as selling the residual electricity to India and Bangladesh."

But Njawang Dorje, the ethnic Tibetan, warns against betting Nepal's resources on China, which he said has "no respect for the environment". "We Tibetans have no freedom in China," he said. "It will be the same situation here."

### **India and Norway hold diplomatic talks to further boost bilateral cooperation in blue economy**

<https://www.republicworld.com/india-news/general-news/india-norway-hold-diplomatic-talks-to-further-boost-bilateral-cooperation-in-blue-economy-articleshow.html>

"On the sidelines of the Raisina Dialogue, External Affairs Minister Dr S Jaishankar on Tuesday held diplomatic talks with the Norwegian Foreign Minister Anniken Huitfeldt. During the talks, EAM Jaishankar raised global issues and matters of mutual interest with his Norwegian counterpart. Discussion on boosting bilateral cooperation in Blue Economy and energy sector was also done.

India has maintained firm relations with Norway in maintaining Maritime cooperation, cooperation on Fisheries and Aquaculture, Research and Science, and Marine Pollution initiatives. In the meeting, the duo also discussed their perspectives on Myanmar, Afghanistan and Ukraine. EAM apprised that India had pledged support and close cooperation with the United Nations Security Council (UNSC).

Informing about the talks, Jaishankar took to Twitter and wrote, "'A good meeting with FM @AHuitfeldt of Norway. Our health and education partnership advances steadily. Discussed further cooperation in blue economy and energy. Shared perspectives on Myanmar, Afghanistan and Ukraine. Agreed to continue our close cooperation in the UNSC.'"

India- Norway's shared commitment to enhancing ties

Norwegian FM is on a three-day visit to India from April 25-27 as the minister is participating in the seventh Raisina Dialogue edition being held in New Delhi. Huitfeldt, on several occasions, has highlighted the growing ties and cooperation between India and Norway in various fields. Norwegian Minister also underlined that the relations between the two nations have enhanced over the years and several joint projects on climate change and the environment have been taken up.

Earlier, at the request of Prime Minister Narendra Modi, then-Norwegian Prime Minister Erna Solberg visited India on January 7-9, 2019. PM Solberg arrived with a high-level group that included State Secretaries, senior officials, and business leaders.

The two Prime Ministers emphasized the importance of ocean sustainability for a variety of reasons, including food security, energy sources, mineral research, and environmentally friendly maritime transportation. They welcomed the signing of the Memorandum of Understanding on the India-Norway Ocean Dialogue, as well as the formation of the Joint Task Force on Blue Economy under the MoU, to foster multi-sectoral collaboration in many sectors of the Blue

Economy. On the sidelines of the Raisina dialogue, many global leaders are being hosted by India's foreign ministry."

### **India and Pakistan: Indus water panel holds meeting**

<https://www.thehindu.com/news/national/talks-between-indus-commissioners-of-india-pakistan-underway/article34138593.ece>

"After a gap of more than two and half years Indian and Pakistani delegations on Monday began the 116th Meeting of the Permanent Indus Commission here. The meeting which coincided with the National Day of Pakistan is being viewed as part of the broader process of normalisation of bilateral ties between the two neighbours.

The two-day meeting of the Commission is being led on the Indian side by Indus Water Commissioner Pradeep Kumar Saxena. The Pakistani delegation is led by Pakistan's Commissioner for Indus Waters Syed Mohammad Mehr Ali Shah. The last meeting of the Permanent Indus Commission was held on August 29, 2018.

Hours after the conclusion of the first day's meeting, Prime Minister Narendra Modi and President Ram Nath Kovind greeted Pakistan on the occasion of its National Day which marks the March 23, 1940 Lahore Resolution which paved the way for the creation of Pakistan. At an event to mark the National Day, organised in the Pakistan High Commission, Aftab Hasan Khan, Charge'd Affaires, said, "Pakistan wants to have friendly relations with all countries including India.

To achieve peace between India and Pakistan both countries shall resolve all outstanding issues." The positive backdrop of the talks between the two delegation has indicated that the interaction is likely supported by the reported back channel talks that are taking place between India and Pakistan.

The Hindu has reported earlier that the United Arab Emirates is playing a role in connecting India and Pakistan through back channel negotiations. The issue, however, did not draw a response from the Ministry of External Affairs.

### **India and Pakistan: Small-scale fisheries can back food security efforts in Arabian Sea countries**

<https://phys.org/news/2021-04-small-scale-fisheries-food-efforts-arabian.html>

"Countries surrounding the Arabian Sea should empower well-managed artisanal and subsistence fisheries to back food security efforts, a new Sea Around Us study suggests. In a chapter titled ""The Fisheries of the Arabian Sea Large Marine Ecosystem,"" included in the book The Arabian Seas: Biodiversity, Environmental Challenges and Conservation Measures published by Springer Nature, Sea Around Us researchers describe the fisheries in the exclusive economic zones of Somalia, Djibouti, Yemen, Oman, the United Arab Emirates, Iran, Pakistan and India's Malabar coast, as well as in the region's high seas.

They point out how industrial operations are responsible for 44% of total catches in the 65-year period covered in the study (1950-2014), with most catches being taken from India's, Pakistan's and Yemen's EEZs. Although the industrial sector's catches grew steadily and peaked in 1997, from the early 2000s onwards, catches started declining and have stabilized at around 2.3 Mt per year.

The decline is attributed to excessive fishing aided by poor fisheries regulations and often lack of enforcement, which has meant that over the last 20+ years, an increasing number of stocks in the Arabian Sea LME have started to dwindle. "We analyzed 298 fish stocks, and of those, over 50 percent are in the fully exploited category with few—if any—with potential for fisheries growth," said Deng Palomares, lead author of the chapter, and the Sea Around Us project manager at the University of British Columbia. "

"About 25 percent, on the other hand, are overexploited and the trend that we see is one of increasingly more overexploited, collapsed and fully exploited stocks, while stock rebuilding seems to be poor." Palomares said that over time, catches in this ecosystem have increasingly consisted of species lower in the food web, which means that larger fishes such as tuna are being fished out and smaller organisms are becoming more prevalent. "This confirms the existence of "fishing down the food web" in this area," Palomares said.

The small-scale sector also plays an important role in the Arabian Sea Large Marine Ecosystem, with combined catches of artisanal and subsistence fisheries reaching approximately 21.3 Mt in the 2010s. The analysis shows that, throughout the studied period, 56 percent of catches are taken by small-scale operators who either sell the fish on local markets and keep a small portion or keep the entire catch for their own and their families' consumption. "

"The high proportion of artisanal and subsistence fishers means that the majority of the fishing in this LME and thus the majority of catches occur within national EEZ waters," said Dirk Zeller, coauthor of the study and director of the Sea Around Us—Indian Ocean at the University of Western Australia. "This means that national governments can manage the exploitation of marine resources, allowing for potentially better control compared to most fishing in the high seas waters."

"Even though some progressive actions have been taken already, such as the 2011 trawl ban in Oman and the ban on driftnets in the UAE in the late 1980s, in both countries, as elsewhere in the region, the lack of control based on a strong and well-defined legal framework means that most regulatory measures are ignored. "

"Serious considerations ought to be given by all countries to policies that focus on reducing and tightly controlling industrial fishing, both domestic and foreign, and assisting well-managed small-scale fisheries for both national consumption and carefully controlled and monitored export fisheries," Zeller said. "This is the direction in which all fisheries around the world need to be heading, to ensure the survival of a blue economy."

## **India and Pakistan: The climate is changing fishers' fortunes – But not India-Pakistan animosity**

<https://science.thewire.in/environment/climate-change-link-pakistani-indian-fishermen-cop26/>

"The tragedy of a fisherman who died of COVID-19 while imprisoned in India, far from his family in Karachi, highlights the link between geopolitics and climate change – issues that will be deliberated at COP26 in Glasgow. In November 2017, Amir Hamza was among the crew of a Pakistani fishing boat arrested by Indian security forces across the maritime border.

Fisherfolk along the Arabian Sea coast shared by nuclear-armed neighbours Pakistan and India know that they risk such arrests, as well as sea storms, if they stray across the invisible line. But it is a risk they take, driven by declining fish populations.

When caught, the men are hauled off to prison on 'the other side' and their boats impounded. Both sides rarely return these vessels, which often represent the life-savings of their owners.

Throw back the catch

Activists have long been urging both countries to adopt a no-arrest policy for fishermen who stray across the maritime border. "They should throw the catch back and let the fishermen go back rather than arresting them," says Mumbai-based activist Jatin Desai. Instead, "we treat each other's prisoners like prisoners of war", to quote the late Mohammad Ali Shah of the Pakistan Fisherfolk Forum (PFF). The Karachi-based community leader died in August, aged 65, after contracting COVID-19. Amir Hamza, around the same age, was killed by the same virus two months earlier while incarcerated in Bhuj, a town in Gujarat, India.

He was one of Shah's constituents. He had been arrested along with other crew members of a Pakistani fishing boat for violating the maritime border in November 2017. They had all completed their sentences and been repatriated, except Hamza. Shah's successor at the PFF, Saeed Baloch, says that Hamza was of Bengali origin but had long lived in Pakistan. The prison sentence itself is typically six-nine months but fishermen may end up spending years in prison as undertrials.

Even after completing their terms, they must wait for consular access and identity verification. Abject poverty keeps them far removed from the corridors of power and cutting edge research like a NASA study of 2019, showing how a warming Himalaya is impacting the marine ecology in the Arabian Sea.

These arrests violate international treaties like the Vienna Convention on Consular Relations 1963, which mandates that any foreign national arrested or detained must be granted access to their country's consulate. In denying consular access to arrested fisherfolk, both countries also violate their own 2008 agreement to provide consular access to all civilian prisoners within three months of detention.

Judicial committee

In 2007, India and Pakistan formed a joint judicial committee on prisoners comprising four retired judges from either side. The committee was supposed to meet twice a year and expedite the release of cross-border prisoners. However, it only met seven times until its last convention in October 2013 in India and has been lying defunct since then.

The Committee needs to be urgently reconstituted. In May 2018, India appointed its four nominees. Pakistan has yet to do so. Hamza had a Pakistani national identity card but had not updated it to the computerised version. This led to delays in his identity verification and repatriation, forcing him to languish in detention until he died of COVID-19. His mortal remains were stored at a morgue at GK Civil Hospital, Bhuj.

A Gujarat government certificate, issued on September 9, lists June 13 as the date of demise. The wheels of bureaucracy churn slowly. The paperwork for Hamza's identity verification and repatriation of the body began in August, after an official visited Hamza's family in Karachi. Imagine an official visiting you at home to inquire if you are related to your loved one, held prisoner across the border for four years. Then he tells you the person died two months ago. That is how Hamza's family learnt of his passing.

The Pakistan High Commission in Delhi issued emergency identity papers. Pakistan's interior ministry wrote to the prisons department in Lahore to organise transportation for the body via ambulance to Karachi. Why these formalities could not have been fulfilled in Hamza's lifetime remains a mystery. Officials on both sides blame the other for the delays. Tortuous delay, tortuous route Hamza's bereaved family had to wait another month to receive his body.

His last journey followed the torturous route forced upon cross-border prisoners, alive or dead. Hamza was transported over 1,200 km north to the Attari-Wagah border, then over 1,200 km south to the port city. The direct sea or air journey between the Gujarat coast to Karachi takes about two hours. The Indian Border Security Force handed over Hamza's mortal remains to a deputation of 18 Wing, Punjab Rangers at the Attari-Wagah border on 14 September 2021 at around 6.30 pm.

Representatives of Edhi Centre then transported Hamza by ambulance to Karachi. The body was strapped in such a way that his family could not see his face one last time. They did not even have money for the funeral. The Pakistan Fisherfolk Forum paid those expenses.

Red tape

The delays in repatriating Hamza's body is neither new nor peculiar to one or the other side. In Hamza's case, India provided consular access to Pakistan on February 16, 2018 but couldn't confirm his nationality, says Jatin Desai, a journalist and activist with the Pakistan India People's Forum for Peace and Democracy. Desai, who has been following such cases for years, remembers the Pakistani fisherman Nawaz Ali, incarcerated in India for 13 years. It took a month to repatriate his body after he died in 2012.

In July 2017, an Indian fisherman Kana Chauhan, 37, died in a Pakistani prison after complaining of chest pain. His body too, lay in the morgue for weeks before it could be sent back. Two other Indian fishermen, Vaaga Chauhan and Ratan Das, died in a Karachi prison on December 12, 2015 and February 8, 2016 respectively. Their bodies reached India months later, on April 14, 2016.

Last July, it took a month for the body of Pakistani fisherman Abdul Karim Bhatti, who died in India after being imprisoned there for seven months, to be flown home to Karachi. Explaining the process behind the delay in Hamza's case, Saurabh Singh, superintendent of police, Bhuj, told Shishir Arya of the Times of India that the established procedure for such cases involves the state's home ministry taking up the matter, then pursuing it with the Union home ministry.

The Union ministry then takes up the issue with the relevant foreign country. Each country then follows its own procedure to identify the individual and repatriate them. If the foreign prisoner's nationality cannot be verified the body, it cannot be repatriated and the last rites take place in the arresting country. This is what happened in the case of Imran Kamran, a 38-year-old man Pakistani national who died in January this year.

He had been detained at the Joint Interrogation Centre (JIC) in Bhuj since being arrested in 2009 without valid travel documents. Kamran's body was taken to the Guru Gobind Singh Government General Hospital for a forensic post-mortem. Eight months later, when his identity as a Pakistani could still not be verified, the authorities gave the green signal for the last rites to take place. Volunteers of a nonprofit buried him in a graveyard in Jamnagar city on August 27, 2021 according to Muslim rites.

Not criminals

“These men were not criminals or terrorists. Small errors on their part and hostilities between their nations cost them their lives,” says Jatin Desai. “Yet, not even a fraction of the concern and outpouring of emotion for the deaths of brave jawans (soldiers) is extended to them. There is no uproar, no debate.” This may have something to do with “their low economic status, semi-literacy, and invisibility to the public in both countries”.

Prisoner lists between both countries are exchanged annually on the first of January and July. The prisoner lists of January 2021 showed 340 Pakistani prisoners in India, including 263 civilians and 77 fishermen, and 319 Indian prisoners in Pakistan, including 49 civilians and 270 fishermen.

The July lists showed 271 civilian prisoners and 74 fishermen “believed to be Pakistani” in India, and 51 civilian prisoners and 558 fishermen “believed to be Indian” in Pakistan. India has so far confirmed the nationality of 376.

However, they remain in prison. Given technological advances, “it won't take more than a day for the Indian consulate to establish the nationality of fishermen lodged in Pakistani jail if they choose”, says Desai. Families of such prisoners on either side struggle economically and

emotionally in the absence of their main breadwinners. Heera Savra's husband, an Indian fisherman, has been in Pakistani custody since their son was just five months old.

Now four years old, the boy has no memories of his father, reports the Times of India. "Many women from the entire coastal area of Saurashtra – Gir Somnath, Porbandar, Junagadh, Devbhumi Dwarka, Jamnagar districts – have the same heart-breaking tales to tell," the newspaper reports.

The day Amir Hamza's body was repatriated to Pakistan, Indian coastguards apprehended another Pakistani fishing boat "Allah Pawawakal" with 12 crew members in Indian waters. The pattern has been repeated for years now – fishermen on either side are basically "prisoners of poor policies... Arrest, release, repeat".

India and Pakistan's toxic official relations continue to take a human toll and hold South Asia hostage even as the region deals with the crisis of climate change that includes fish migration patterns.

### **India and Singapore organise East Asia Summit workshop on IUU fishing**

<https://orissadiary.com/india-and-singapore-organise-east-asia-summit-workshop-on-illegal-unreported-and-unregulated-fishing/>

"The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, and the Government of Singapore organized a virtual East Asia Summit (EAS) Workshop on Illegal, Unreported, and Unregulated (IUU) Fishing yesterday, co-chaired by India and Singapore Food Agency (SFA). Shri Jatindra Nath Swain, Secretary, Department of Fisheries (DoF), Government of India, gave the keynote address.

The workshop was attended by 8 EAS member countries, and 4 knowledge partners, officials of the Department of Fisheries, Government of India, fisheries officials of different States/Union Territories, and other invitees.

In his inaugural address, Shri Swain highlighted the urgent call for combating illegal, unreported and unregulated fishing. Mr. Swain shared some of India's efforts and initiatives to combat IUU fishing especially through working with coastal fishing communities.

The Workshop began with the opening session led by India and chaired by Joint Secretary, Department of Fisheries, Government of India, Dr. J Balaji. During the welcome address, Dr. J Balaji introduced the theme of the workshop and welcomed all the esteemed delegates, panelists and participants in the Workshop from the countries of Australia, Cambodia, China, Indonesia, New Zealand, Republic of Korea along with India and Singapore.

In his opening remarks to the EAS IUU Workshop, the CEO of the Singapore Food Agency highlighted the importance of combating IUU fishing which has negatively impacted the livelihood and food security of the coastal fishing communities.

The Technical Session 1 was focused on regional collaborations in combating IUU fishing and was Chaired by Singapore Food Agency. The knowledge-partners, namely, the Bay of Bengal Programme Inter-Governmental Organization (BOBPIGO), the Commonwealth Scientific and Industrial Research Organization (CSIRO), the Southeast Asian Fisheries Development Center (SEAFDEC) and the UN Food and Agriculture Organization (FAO) shared the regional efforts and the groundbreaking and continuous efforts being taken to combat IUU fishing.

During the Technical Session 2, representative from each participating country shared their national success stories, experience gained and measures being taken up by the respective country to curb IUU fishing."

### **India and Sri Lanka: 1974 Indo-Lanka boundary deal suffers from legal infirmity**

<https://thefederal.com/opinion/1974-indo-lanka-boundary-deal-suffers-from-legal-infirmity/>

"The recent arrest of 68 Indian fishermen by the Sri Lankan Coast Guard for transgressing their maritime boundaries at the Palk Strait and Adam's Bridge area has once again triggered a renewed debate on the legality and the binding nature of the 1974 Boundary Agreement between India and Sri Lanka.

This forty-eight-year-old agreement had sought to resolve, once and for all, the contentious boundary issue between both the countries. However, that has not happened it seems. Immediately after the conclusion of this agreement there has been perceptible tension between the fishermen on either side of the Palk Strait. The exercise of 'historic' fishing rights beyond the national maritime boundaries and its interpretation have given rise to many unclear international legal issues. Since 2010, on an average, annually, nearly two hundred Indian fishermen are arrested around Katchatheevu island area for fishing in Sri Lankan waters.

Sometimes such arrests have resulted in fatalities as well. Since 2009, after the ending of the Sri Lankan internecine civil war, this number has been steadily rising. Each time, after such arrests the Chief Ministers of Tamil Nadu dash off letters to the Prime Minister and also to the Ministry of External Affairs (MEA) to review or to rescind the existing 1974 Boundary Agreement between India and Sri Lanka.

They have been arguing that on account of the narrow interpretation (or even not making any reference to it) of the term 'historic' and 'traditional' fishing rights of the Indian fishermen in the Palk Strait, has given rise to this recurring problem of arbitrary arrest by the Sri Lankan Coast Guard. For this reason, the implementation of the 1974 Agreement has become a contentious issue.

After the most recent incident that occurred last week, Tamil Nadu CM Stalin wrote a comprehensive letter outlining his government's concerns over the plight of the fishermen and the consequent viability of this agreement. The arrest of the fishermen by the Sri Lankan authorities is followed by the impounding of their vessels under the Sri Lankan civil and criminal code.

This has resulted in an inevitable long legal process thereby affecting the livelihood of the Indian fishermen. Some view this as a tactic to deter the Indian fishermen from venturing into the Sri Lankan side of the Palk Strait. Although the government of India, in particular, the MEA, has been elaborating upon the efforts being made by its Consulate to ameliorate the plight of the incarcerated fishermen in Jaffna and other places, tactically, it is silent on raising the concerns relating to the legal and contextual nature of the 1974 agreement.

On the contrary, it has been stoically defending the agreement as resolving the long-standing boundary dispute between both the friendly countries. To a RTI question on the larger issue of resolution of Katchatheevu Island or the Palk Bay issue raised on November 13, 2014, the MEA, (as publicised in its own website) had categorically stated: “The information sought above pertains to delineation of Indo-Sri Lanka Maritime Boundary Line (IMBL).

Applicant is requested to note that Katchatheevu Island lies on the Sri Lankan side of the India-Sri Lanka International Maritime Boundary Line (IMBL) that was delineated by the 1974 Agreement”. “(The Agreement on the boundary in historic waters between the two countries and related matters (with map) signed at Colombo on June 26, 1974 and at New Delhi on June 28, 1974).

Under the Agreement, Indian fishermen are allowed access to Katchatheevu island for rest, for drying of nets and for the annual St Anthony’s festival. The Katchatheevu island issue is, however, currently sub-judice with two writ petitions [Nos. 561 (2008) and 430 (2013) filed in the Hon’ble Supreme Court of India. It may also be noted that the issue of Katchatheevu and IMBL pertain to the government of Sri Lanka, a friendly neighbouring country.” The above contention of the Indian government on the contents and interpretation of the 1974 Agreement however is not in consonance with the views of the Tamil Nadu state government.

This also raises the larger issue of implementation of an international agreement keeping in mind the federal structure of the Indian Constitution. Article 246 of the Indian Constitution in its Seventh Schedule provides that the central government has the sole prerogative to enter into and implement (under Article 253) any international agreement. However, in matters that affect the interests of state governments it should normally seek their views as well. In this regard, one should recall the unanimous resolution passed by the Tamil Nadu legislative assembly in 2013 opposing the transfer of sovereignty on the Katchatheevu island to Sri Lanka.

The Tamil Nadu government has also been pointing out that the 1974 agreement being a transfer of sovereignty issue of Katchatheevu Island has not been formally ratified by the Indian Parliament. This essentially raises the issue of adjustment and delimitation of maritime boundaries and accordingly needs the approval of the Indian Parliament as it has the sole prerogative to decide the territorial sovereignty and claims of the Indian state as per Part I (Articles 1 to 4) of the Indian Constitution.

For this reason, two writ petitions on the issue of cession of maritime territory in relation to Katchatheevu Island, as noted above by the MEA, are pending before the Supreme Court. The 1974 Agreement, despite its confirmed finality, continues to raise issues from both the domestic and international legal angles. On the domestic angle about the legality of the transfer of

territorial sovereignty by the executive (the Central government) the Indian Supreme Court's decisions have gone through a trajectory of legal ambivalence in different contexts.

The important question before the Supreme Court in several cases has been whether the territory could be ceded to another country through an executive decision or whether it should have been done through a constitutional amendment. The adjustment of an undefined boundary through marking was regarded as something that could be effected through an executive act. The adjustment of the boundary or territory pursuant to an order of the arbitral tribunal was regarded as a ceding of the territory, necessitating a constitutional amendment.

This resulted in the 9th amendment of the Indian Constitution. The ceding of Indian sovereignty of Katchatheevu Island in a 1974 agreement by an executive action needs legal clarity. The available official records show that this tiny island was historically part of the Indian territory. Can it be ceded without proper Parliamentary intercession? From the international legal angle, the 1974 Agreement between India and Sri Lanka was concluded at a time when the basic principles relating to maritime delimitation had yet not crystallised.

The negotiations for the third United Nations Convention on the Law of the Sea (UNCLOS) had just been launched in 1973. There was no unanimity among countries on the extent of the limits of territorial sea on which states could have exercised their sovereign rights. The idea of other territorial delimitations such as Exclusive Economic Zone (EEZ), Continental Shelf and other related maritime zones had not yet crystallised as well.

Even the Indian legislation on the maritime zones i.e., the Territorial Waters, Continental Shelf, Exclusive Economic Zone and Other Maritime Zones Act, were passed in 1976. It is not clear as to why India had to cede its sovereignty in 1974 of certain parts of the Palk Strait to Sri Lanka, including a 283 acre Katchatheevu Island without sufficiently preserving and articulating its historic and traditional rights.

According to one view, such a transfer at that point of time was on account of a close alliance that existed between the prime ministers of both countries than anything else. Even now, in 2021 perhaps, similar sentiments prevail and accordingly India must find it difficult to overturn the agreement. It is also true that almost ten years after the conclusion of the 1974 agreement, the third UNCLOS had ended in 1983 with more clarity and unanimity on the global scene over the exact delimitation terms for the maritime zones.

Despite all this, a silver lining in the 1974 agreement is its repeated reference to 'historic' and 'traditional' rights in its Preamble. More importantly, it is the scope of Article 6 of the 1974 agreement on which the Central government should seek a broader view and interpretation through a mutual negotiation with Sri Lanka. It, inter alia, states, "The vessels of Sri Lanka and India will enjoy in each other's waters such rights as they have traditionally enjoyed therein".

Further, international law, through its codified Vienna Convention on Law of Treaties (VCLT) in Article 31 through its general rules of interpretation clearly allows parties to renegotiate or to re-emphasise the provisions of a treaty through an appropriate addendum or annex. Perhaps, this is the way forward to end the decades of hardships of the fishermen. Along with this, a proper

regional fisheries zone agreement as per UNCLOS requirements between both the countries should also be negotiated to optimally and sustainably utilise the available fisheries resources.

### **India and Sri Lanka: Agreed to seek pragmatic solution for fishing issue**

<https://colombogazette.com/2021/08/23/india-and-sri-lanka-agreed-to-seek-pragmatic-solution-for-fishing-issue/>

"Both sides also highlighted the pivotal importance of relations between Sri Lanka and India which have stood the test of time as close neighbours and expressed satisfaction at the current level of cooperation and resolved to raise bilateral relations in multiple sectors to even higher levels.

The High Commissioner of India to Sri Lanka Gopal Baglay called on the new Foreign Minister Professor G.L. Peiris after his assumption of duties. Foreign Minister Peiris expressed appreciation and continuous support being provided by India for combatting the COVID-19 pandemic. Minister Peiris thanked the Government of India for supplying emergency consignments of liquid oxygen from east Indian ports, even by using Indian naval ships.

The discussion also centred on enhancing religious tourism. Foreign Minister Peiris also appreciated the offer of US\$ 15 million by the Government of India to preserve and promote Buddhist cultural sites in Sri Lanka and expressed interest in early implementation of the offer. Both sides also discussed on the possibility of the early convening of the Indo-Lanka Joint Commission, which was last convened in 2016.

It was agreed that the six Working Groups under the Joint Commission, covering specific subject areas under education, science & technology, tourism, trade & investment, fisheries and the power sector, should meet at the earliest feasible opportunity.

Matters relating to fisheries were also discussed and both sides agreed to search for a meaningful, pragmatic solution to the issues. Indian assistance to develop fisheries harbours in Sri Lanka was greatly appreciated. The discussion also focused on the setting up of pharmaceutical manufacturing plants by India in Sri Lanka.

### **India and Sri Lanka: Appoints committee to look for permanent solution on fishermen issue**

<https://www.thehindu.com/news/international/sri-lanka-appoints-committee-to-look-for-permanent-solution-on-fishermen-issue/article33671717.ece>

"Sri Lankan government has appointed a three-member committee which will make recommendations on measures to stop poaching by Indian fishermen inside the country's waters, the Ministry of Fisheries said on Tuesday, a week after four people were killed when an Indian trawler capsized after colliding with a Sri Lankan Navy vessel. Fisheries Minister Douglas Devananda has appointed the committee of senior officials from his ministry who would be

talking to all stakeholders to try and find a permanent solution to this recurring issue, officials said.

Last week, India lodged a strong protest with Sri Lanka over the death of four fishermen in a collision between their vessel and a naval craft of the island nation, saying steps should be taken to ensure that such incidents do not recur. The Indian fishing trawler sank in the Sri Lankan waters about 8 nautical miles within the International Maritime Boundary Line (IMBL) northwest of Delft Island. The fishermen were from Tamil Nadu and they had set out for fishing on January 18. India expressed “deep anguish” over the incident and emphasised the need to deal with issues pertaining to fishermen in a humanitarian manner.

“Existing understandings between the two governments in that regard must be strictly observed. Utmost efforts should be made to ensure that there is no recurrence,” the Ministry of External Affairs said in New Delhi on January 21. Commenting on the incident, Sri Lanka’s Foreign Ministry Secretary Jayanath Colombage said that the issue was a people’s issue which needs to be looked at closely.

“The incident happened within our waters, when the boat had collided with the Sri Lankan Naval patrol craft”, Colombage, a former Sri Lankan Navy chief, told a local TV channel. The Sri Lankan Navy said that on January 18 they seized Indian fishing trawlers allegedly poaching in Sri Lankan waters, trespassing the International Maritime Boundary Line (IMBL).

The Navy said one of the Indian fishing trawlers, with aggressive manoeuvres attempted to evade the scene and collided with the Naval craft in operation and ultimately sank at sea having lost its stability.

Fishermen from both countries are arrested frequently for inadvertently trespassing into each other’s waters. External Affairs Minister S Jaishankar during his visit to Sri Lanka early this month held a meeting with Lankan Fisheries Minister and reviewed bilateral cooperation in fisheries.

During his five-day visit to India in February last year, Sri Lankan Prime Minister Mahinda Rajapaksa and his Indian counterpart Narendra Modi agreed to resolve the long-festering fishermen issue with a “humane approach”.

### **India and Sri Lanka: Demand Katchatheevu back in return of aid: Fishermen**

<https://www.dtnext.in/News/TamilNadu/2022/04/11135018/1361342/Demand-Katchatheevu-back-in-return-of-aid-Fishermen.vpf>

"In order to extend a helping hand to Sri Lanka, India had agreed to provide \$1 billion credit to the island nation for extending support to procure food, medicines and essentials. At this juncture, the fishermen in Tamil Nadu, who are facing troubles in the Palk Strait due to the high-handedness of the Sri Lankan Navy, want India to initiate steps to retrieve the 285-acre Katchatheevu which was once under the control of Ramnad Zamindaris or ensure implementation of Article 5 and 6 of the Katchatheevu agreement, 1974.

“We are not objecting to extending of assistance to Sri Lanka. However, India shall ask its neighbour to stop its naval brutality, which has been unleashed on Tamil fishermen in the Palk Strait. India shall provide credit assistance to Sri Lanka on condition it should return the Katchatheevu or follow the pact,” Armstrong Fernando, vice president, All India Fishermen Congress told DT Next.

He further pointed out that even as the agreement delineated Katchatheevu to Sri Lanka, Articles 5 and 6 of the Katchatheevu/ Indo-Sri Lankan maritime agreement made it clear that the traditional rights of Indian fishermen, including the right to fish near Katchatheevu were accepted and conceded.

On June 26, 1974, India and Sri Lanka had entered into an agreement regarding the right on Katchatheevu. Uthirapathy, a fisherman representative from Nagapattinam had also made the same demand to the Centre to retrieve Katchatheevu.

“As Sri Lanka has been facing the worst economic crunch, India is helping our neighbour on moral grounds. However, it can utilise this situation to retrieve our traditional rights on Katchatheevu. We can provide credit assistance and in return Sri Lanka shall give back Katchatheevu as it would save our fishermen’s livelihoods,” he told this paper.

When Fernando approached the Madras High Court seeking direction from the Centre to strictly implement Articles 5 and 6 of Katchatheevu Agreement on March 11, the first bench headed by Chief Justice Munishwar Nath Bhandari held that it could not intervene in foreign affairs matters.

Speaking about the issue, senior advocate KM Vijayan said that the fishermen have raised a sensible demand and it is up to the Union government to decide on it. “Katchatheevu was once occupied by India. The Constitution allows us to give and take the occupied parts. Since the Sri Lankan government is expecting assistance from India, the Centre can demand the SL to return the island to us.

Though it is a sensible demand and the Centre has to take a decision considering the political effects. It is purely under the purview of the external affairs ministry as they will take note of our diplomatic ties,” he told DT Next."

### **India and Sri Lanka: Discussions on India-Sri Lanka territorial waters dispute underway**

<https://www.newsfirst.lk/2021/10/20/discussions-on-india-sl-territorial-waters-dispute-underway/>

"The Ministry of Fisheries says that it is holding discussions with the Government of India regarding the fisheries issues caused as a result of Indian fishermen violating the territorial waters of Sri Lanka.

The Secretary to the Ministry of Fisheries, Indu Ratnayake said that plans are underway to hold discussions with the Indian and Sri Lankan fishing communities, adding that steps will be taken to resolve the issue expeditiously.

According to Ratnayake, eight Indian fishing vessels that violated the territorial waters of Sri Lanka and are currently in Sri Lankan custody. She said that two of the boats were seized by security forces last week and 23 fishermen aboard the vessels have been quarantined.

The Fisheries Ministry Secretary added that the relevant authorities have already been informed to take legal action against the fishermen who have violated the territorial waters of Sri Lanka.

### **India and Sri Lanka: Ending the dispossession of Northern fishers by Indian trawlers**

<https://island.lk/ending-the-dispossession-of-northern-fishers-by-indian-trawlers/>

"From the beginning of the early 1980s, trawlers, from Tamil Nadu, have been crossing the International Maritime Boundary Line (IMBL) and illegally fishing in the Palk Bay waters of northern Sri Lanka, damaging the ecosystem by bottom trawling, smuggling fisheries resources, belonging to the northern Sri Lankan fishers, damaging their fishing equipment, and undermining their livelihoods.

Diverse types of interventions, by the two governments, dialogues between the fishers of the two countries, involvement of civil society actors, and others, have done little to prevent human suffering, economic losses and the volatile political situation disturbing the relations between two friendly countries that have emerged from this 40-year long story of resource piracy. The northern Sri Lankan fishers, who suffered 30 years of civil war have had enough and there is an urgent need to end this crisis.

#### Extracting and devastating resources

Both Sri Lankan and Indian fishers used to share the Palk Bay waters (historic waters) in the past, which they did in harmony. However, post-war developments saw radical changes in the structure and organisation in fisheries, the expansion of the market and the establishment of borders separating the Palk Bay region, all of which had tremendous influence on fisheries, especially on the type of technology employed (craft-gear combinations), target species, fishing pressure and area of operation.

In this process of change, a tremendous increase in Indian trawlers was observed, which finally resulted in a serious decline of fisheries resources on the Indian side of the Palk Bay and crossing of the IMBL by the Indian trawl fleet to fish in Sri Lankan waters. In northern Sri Lanka, over 37,000 fishers operate more than 11,650 boats, the majority of which are 18 feet FRP boats propelled by outboard engines of 8 to 25hp.

Including post-harvest sector employment and dependents, about 200,000 people in the Northern Province are dependent on the sector. They don't stand a chance against the 2500 odd 30-60 feet trawlers from Tamil Nadu propelled by 70-190hp outboard engines. Indian trawl boats are

crossing the International Maritime Boundary Line (which was established in 1974 and 1976) to fish on the Sri Lankan side of the Palk Bay.

These boats are poaching in Sri Lankan waters in large numbers as well as extracting and devastating the resources belonging to Sri Lankan fishers. Although the process of poaching commenced in a situation where Sri Lankan fishers in the North had limited fishing opportunities due to the civil war. Today the issue has become one of the most important economic and political issues in the country, because with the end of the war in 2009, the Sri Lankan fishers in the North has commenced fishing.

### The Palk Bay Pirates

Trawlers come at night, three days a week, smuggle colossal amounts of fisheries resources, and damage Sri Lankan fishers' nets, causing enormous financial losses. To avoid the trawlers, Sri Lankan fishers often stay at home instead of going out to sea, thus losing valuable fishing time. They are forced to adopt less-profitable, near shore operations and/or resort to destructive fishing practices (trawling, wing nets, purse seining, dynamiting, etc.).

The social institutions of the fishing communities, particularly fisheries co-operatives present in every village, have been weakened due to the long decline of fishing incomes, where a fraction of such incomes are normally contributed to run the co-operatives. Thus, participatory management and coastal support for fishing communities have been undermined. The long disruption of fisheries after the war has made it difficult for fishing communities to plan for the next season, and many are slowly moving out of the fishing sector to other forms of day wage labour.

In the early years, arrests of Indian trawlers for poaching were made for security reasons, because the Sri Lanka Navy, which was fighting a war, was less interested in fisheries issues. But since the cessation of the war, the Navy arrested the intruders for illegal entry into Sri Lankan territory. The arrests were made under the Foreign Fishing Boat Regulations Act No. 59 of 1979, Immigration Act of Sri Lanka and the Prevention of Terrorism Act.

The impact of the arrests in preventing Indian trawl intrusion was neutralised by the arrests of Sri Lankan multiday fishers for poaching in Indian Territory, and detained in Indian prisons. Often, through the intervention of the embassies of the two countries, the Indian trawler fishers arrested and detained in Sri Lankan prisons were released in exchange for Sri Lankan fishers detained in India.

### Early Interventions

In trying to deal with this escalating crisis, the two governments drew up an MOU in 2005, which made provision for the establishment of a Joint Working Group (JWG), which among other things, would deal with issues of poaching and arrests. Although several rounds of discussions were held since 2008, no significant developments were reported, other than agreeing that fishers in both countries should be able to pursue fishing activity in a safe, secure and sustainable manner.

However, some progress was achieved in the front of fisher-fisher dialogues. Several such dialogues have taken place in the past, initially organised by ARIF (Alliance for the Release of Innocent Fishermen) and later with the active involvement of the two governments. The most important of such dialogues took place in August 2010, where the Indians agreed to stop mechanised trawl fishing in Sri Lankan waters within a period of one year, during which time, only 70 days of trawling were to be allowed.

Unfortunately, the governments failed to back up these decisions, and the promises were not kept. Further dialogues took place under state patronage in March 2011 and January 2014, which did not produce any fruitful results.

### Post-2015 developments

In April 2015, President Maithripala Sirisena convened a meeting with the various arms of the state and the northern fisher leaders on the request of the Tamil National Alliance (TNA). This high level meeting and continued engagement gave the fisher folk the confidence that their plight was a matter of serious concern to the Government, and initiated bipartisan engagement on the issue, leading to significant progress.

The Parliamentary debate in October 2015 on the ecological and socio-economic damage by Indian trawlers, growing awareness through media coverage and the greater involvement of actors in Colombo, raised the fisheries conflict to the level of a national issue, rather than a problem confined to the North. Fisher leaders also took their issue to court and actively sought legal recourse towards prolonged confiscation of trawlers, and a ban of trawling in Sri Lanka. An Amendment to the Fisheries and Aquatic Resources Act banning bottom trawling in Sri Lanka was passed by Parliament in July 2017.

On another front, the Indian Government, in 2015, made unambiguous statements that Tamil Nadu trawlers should stop cross-border fishing. Furthermore, the increased media attention on the devastation caused to Northern Fishers exposed Tamil Nadu's hypocrisy. The Tamil Nadu Government called for INR 1,520 crore (USD 225 million) package to convert the trawler fleet to deep sea vessels under the 'Blue Revolution Scheme', of which INR 450 crore (USD 66 million) was approved by the Government in Delhi, and the rest was to come from bank loans. By September 2019, close to 590 trawlers have applied for this facility.

Although concerns were raised about whether such a conversion to deep sea fishing and buy back is realistic and sustainable, the engagement from Tamil Nadu pointed to an acknowledgement of the unsustainability of trawling and poaching. An important development was the setting up of a Joint Working Group in November 2016 during ministerial talks held between India and Sri Lanka (revitalising what was formed in 2005), which would meet every three months and a meeting between the Ministers for Fisheries every six months.

The Terms of Reference for the Joint Working Group (JWG) included: i. expediting the transition towards ending the practice of bottom trawling at the earliest, ii. working out the modalities for the Standard Operating Procedures (SOPs) for handing over of apprehended

fishermen, and iii. ascertaining possibilities for cooperation on patrolling. Both Governments agreed on setting up a hotline between the two Coast Guards. Agreement was also reached on the request by the Fishermen Associations that there should be no violence and no loss of life in the handling of fishermen by the Navies and Coast Guards of the two countries.

They agreed to encourage the Fishermen Associations of the two countries to meet every six months to take further their dialogue. Yet, many of the decisions taken at the bilateral Ministerial talks were not followed through towards a permanent solution. As a result of campaigns of small scale fishers from the North, the work of researchers and activists and engagement with the governments of the two countries, and more importantly, the enforcement of the Foreign Fishing Boat Regulations (amendment) Act, a significant reduction in the incidence of Indian trawlers illegally fishing in Sri Lankan waters was noticed by 2018.

Yet, the Northern fishers did not even have a breathing space for a new beginning, because the country was hit by the Covid Pandemic in early 2020. Very little action was paid against the poachers and there has been a resurgence of the incidence of Indian trawlers poaching in Sri Lankan waters, drastically affecting fishing livelihoods, which were already being threatened by the pandemic.

The aggravated current situation, continues to dispossess the small scale fishers of the North; they were devastated by the war until 2009, crippled by the Indian trawlers in the decade after the war and impoverished by market disruptions with the Covid-19 pandemic since March 2020. Moving forward The decision to arrest and retain trawlers that are crossing over the International Maritime Boundary Line (IMBL) by the Sri Lanka Navy, particularly since 2013, places significant pressure on the Tamil Nadu establishment.

Yet, the lower levels of arrests over the last two years (71 vessels were arrested in 2017 while only nine were arrested in 2020) is in part due to fears of the Covid-19 virus spreading through arrests. Evidently, expanding deterrence is of paramount importance in dealing with the present crises, which needs strict enforcement of the Foreign Fishing Boats Regulations (Amendment) Act, No. 01 of 2018 to arrest foreign vessels in Sri Lankan EEZ which has provisions for imposing heavy fines on trawl owners ranging from Rs. 4 – 15 million.

#### The Trawl Ban

Act. No. 11 of 2017 should also be implemented. Given that Indo-Sri Lankan relations are currently of great importance, where the priorities for both governments are in furthering trade, investment and defence ties between the two countries, deterrence is to be employed carefully. There is the need for a broader strategy that asserts pressure at different levels to ensure that Tamil Nadu addresses the issue of poaching by their trawlers; particularly given that fisheries is a devolved subject in India.

Pushing for joint patrolling operations by the Indian and Sri Lankan Navy could be strategic. The Indian side needs to be convinced to install vessel monitoring devices on their trawlers to track their location. However, these efforts will prove futile unless the incidence of Sri Lankan multiday boats violating Indian maritime boundaries is brought under control. Raising the issue

both by the Sri Lankan Government towards the Indian Government and the TNA and Tamil political actors towards Tamil Nadu would be strategic, given the political realities.

Strong emphasis should be made on the devastating impact of resource smuggling on the livelihoods of Northern fishing populations of Sri Lanka. Strategies to work with the newly elected Government in Tamil Nadu in relation to the fishing conflict will be necessary. Engagement by the Tamil fishing community and community leaders from the North will prove important for challenging a change of stance by Tamil Nadu Government and its leaders.

Thousands of nets worth millions of Rupees have been lost in the past decade, with no single fisherman ever being compensated and with no insurance being available. Fishers now deserve financial reparations for their lost assets and for lost fishing days. Financial reparations can also be asked from the Tamil Nadu fishers, the Tamil Nadu government or the Indian government. If such demands, however, are not met in the short term, the Sri Lankan government itself may need to find the required funds.

A campaign for reparations for northern Sri Lankan fishers will help consolidate the demand for a permanent solution to the fishing conflict. The larger aim of interventions in the Palk Bay should be to establish a sustainable, comprehensive, and socially just fisheries. Current data on the state of fish stocks in this region are highly deficient. Similarly, very little scientific knowledge on the damage caused to the environment by trawling is currently available. There is an urgent need for NARA to intensify research in the Palk Bay.

This can provide the foundation for developing a rational and legitimate framework for fisheries governance. Such research will also continue to weigh on the need for a permanent solution that ends bottom trawling in the Palk Bay. While the fisher-to-fisher negotiations conducted in Chennai in 2010 were initially widely acknowledged as promising, the follow-up was poor. Similarly, the Ministerial level talks in November 2016 were significant and even led to considerable changes, however, again follow up was poor. There is a need to build on the tremendous gains of those talks, regardless of the change of Government.

At the current moment there should be a clear plan recognising the realities in Sri Lanka and India, including the political changes in Tamil Nadu and the Covid-19 pandemic to work through a process of consensus building, but with firm resolve to end bottom trawling. There should be no setback on issues agreed at the Ministerial level talks in November 2016, and calls for licensing cross border fishing should be rejected outright.

#### Concluding remarks

The measures suggested above will be important steps towards resolving the Palk Bay fisheries conflict. Such measures along with the recent national attention on fisheries can also lay the foundation to ensure sustainable governance and management of the natural resource base and the people who depend on it.

The establishment of effective interactive platforms (e.g., strengthening fisher community organizations, co-management platforms) and clearly laid down rights and responsibilities of

participating actors, along with consultation, collaboration and coordination of all concerned actors can lead to effective and sustainable policies. Indeed, sustaining small scale fisheries in addition to solving the Palk Bay fishing conflict will encompass dialogue among relevant actors, capacity development, law enforcement and empowerment of coastal communities.

### **India and Sri Lanka: Fishing for workable solutions in the Palk Bay**

<https://www.thehindu.com/opinion/op-ed/fishing-for-workable-solutions-in-the-palk-bay/article65345894.ece>

"After a gap of 15 months, the India-Sri Lanka Joint Working Group (JWG) on fisheries held its much-awaited deliberations (in virtual format) on March 25. But between the two meetings of the JWG, a number of events — some of them unfortunate — have occurred in the Palk Bay region that encompasses India's Tamil Nadu and Sri Lanka's Northern Province. For instance, seven fishermen — five from Tamil Nadu and two from Sri Lanka — have died in "mid-sea clashes".

Just as sections of fishermen from the Palk Bay bordering districts of Tamil Nadu continue to transgress the International Maritime Boundary Line (IMBL), cases of many of them getting arrested and their boats being impounded by the Sri Lankan authorities continue. What has precipitated matters is that in early February, the impounded boats, around 140 in number, were auctioned despite a bilateral understanding on the matter.

#### Trawling as an issue

Apart from poaching in the territorial waters of Sri Lanka, the use of mechanised bottom trawlers is another issue that has become a bone of contention between the fishermen of the two countries; the dispute is not just between the two states. This method of fishing, which was once promoted by the authorities in India, is now seen as being extremely adverse to the marine ecology, and has been acknowledged so by India.

The actions of the Tamil Nadu fishermen adversely affect their counterparts in the Northern Province who are also struggling to come to terms with life after the civil war. The ongoing economic crisis in the island nation has only worsened their plight.

At the same time, the fishermen of Tamil Nadu experience a genuine problem — the lack of fishing areas consequent to the demarcation of the IMBL in June 1974. If they confine themselves to Indian waters, they find the area available for fishing full of rocks and coral reefs besides being shallow.

The distance between Dhanushkodi (Tamil Nadu) and the IMBL is nine nautical miles (NM) while the maximum distance — Devipattinam and the IMBL — is 34 NM. Under the Tamil Nadu Marine Fishing Regulation Act 1983, mechanised fishing boats can fish only beyond 3 NM from the coast.

This explains the trend of the fishermen having to cross the IMBL frequently. Another factor is that the people of the two countries in general and fisherfolk in particular have common threads of language, culture and religion, all of which can be used purposefully to resolve any dispute. It is because of this factor as well as the plight of the fishermen of the Northern Province that the two governments have been repeatedly saying that the whole problem has to be looked at from humanitarian and livelihood angles.

#### Fisher-level talks

With the problem having been discussed by the JWG, and earlier during the visit of India's External Affairs Minister S. Jaishankar to Sri Lanka, in March as well, it is time steps are taken to take the process forward. The present situation, which is otherwise very stressful for Sri Lanka in view of the economic crisis, can be utilised to bring the fishermen of the two countries to the negotiating table.

This is because the Indian government's two-month ban on fishing on the east coast of the country began on April 15. It is up to Sri Lanka now to ensure that the talks take place as the Indian side is keen on resuming fisherfolk-level deliberations. As several substantive issues were discussed threadbare in the previous rounds of such meetings — the last one was in New Delhi in November 2016 — only some fine-tuning of the respective positions had to be done.

While Indian fishermen can present a road map for their transition to deep sea fishing or alternative methods of fishing, the Sri Lankan side has to take a pragmatic view that the transition cannot happen abruptly.

To elicit a favourable response from the fishermen of the Northern Province, the Tamil Nadu fishermen have to commit themselves to a short and swift transition for which the governments in India (Central and State) have to come forward to perform the role of guarantors.

Also, whenever there is a genuine complaint about Tamil Nadu fishermen having damaged the properties of the Northern Province's fishermen, the Indian government can compensate this through the proper channels of Sri Lanka.

#### Deep sea fishing

In the meantime, India will have to modify its scheme on deep sea fishing to accommodate the concerns of its fishermen, especially those from Ramanathapuram district, so that they take to deep sea fishing without any reservation. The revised scheme has to absorb satisfactorily not only the unit cost of long liners but also the running cost.

Also, there is a compelling need for the Central and State governments to implement in Tamil Nadu the Pradhan Mantri Matsya Sampada Yojana in a proactive manner. The scheme, which was flagged off two years ago, covers alternative livelihood measures too including seaweed cultivation, open sea cage cultivation, and sea/ocean ranching.

During Mr. Jaishankar's visit, India had signed a memorandum of understanding with Sri Lanka

for the development of fisheries harbours. This can be modified to include a scheme for deep sea fishing to the fishermen of the North. It is a welcome development that the JWG has agreed to have joint research on fisheries, which should be commissioned at the earliest. Such a study should cover the extent of the adverse impact of bottom trawling in the Palk Bay region.

Northern Sri Lankan fishermen seek India's action over disputes

Simultaneously, the two countries should explore the possibility of establishing a permanent multi-stakeholder institutional mechanism to regulate fishing activity in the region. At the same time, Sri Lanka should take a lenient view of the situation and refrain from adopting a rigid and narrow legal view of matters concerning the release of 16 fishermen or impounded fishing boats (around 90 in number).

Any delay in this will only increase the bitterness between the two countries at a time when the economic crisis of Sri Lanka is generating empathy in India. What everyone needs to remember is that the fisheries dispute is not an insurmountable problem. A number of options are available to make the Palk Bay not only free of troubles but also a model for collaborative endeavours in fishing."

### **India and Sri Lanka: Fishing in troubled waters: Sri Lanka's war-hit fishermen frustrated over Indian bottom trawling**

<https://economynext.com/fishing-in-troubled-waters-sri-lankas-war-hit-fishermen-frustrated-over-indian-bottom-trawling-87564/>

"Resettled after the end of Sri Lanka's 26-year war in 2009, Annalingam Annarasa had vowed to develop his family profession of fishing. Twelve years later, he struggles to continue his livelihood in the resettled Northern coastal island of Kayts. The reason is bottom trawling by fishermen from neighbouring India.

The banned method of fishing still continues, and local fishermen are the most affected – fishermen who have just started to prosper from a livelihood they had been long denied as a result of being displaced by the war, fishermen who have finally allowed to resettle in their original fishing villages. "We have lost around 40 percent of our daily fish catch due to bottom trawling by Indian fishermen," Annarasa told EconomyNext over the phone.

The 43-year-old, who is President of the Federation of Jaffna District Fishermen Societies, says the local fishermen in Jaffna are deprived of fishing resources as Indian bottom trawling has reduced fish populations in Sri Lankan waters. The banned practise results in even fingerlings being caught while also damaging fishing nets used by local fishermen.

"Around 500 fishing nets have been damaged so far this year in Kayts," he said, referring to an area where a number of small islands is situated in the Gulf of Mannar to the north-northwest of mainland Sri Lanka and to the south-southwest of the Jaffna peninsula. Bottom trawling is banned in Sri Lanka and the law is strictly implemented to maintain the sustainability of the fishing industry by preventing fingerlings being destroyed.

Thousands of fishermen like Annarasa who are rebuilding their lives after the end of a decades-long war are now desperate in the face of increased bottom trawling by Indian fishermen. Thousands of Sri Lanka's northern fishermen have urged the government to make a final stand on the Indian trawler issue as the encroachment and the damage to their fishing equipment are hindering their livelihood and challenging Sri Lanka's post-war resettlement efforts.

Around 800,000 people were displaced during the civil war that lasted from 1983 to 2009. The fighting escalated in Jaffna district in 1990, which saw many turn to state-run welfare centers or move to live with family elsewhere.

### Bottom Trawling

Bottom trawling is a type of fishing net that's pulled along the seafloor. Fishermen commonly use the technique to catch shrimp and bottom-dwelling fish. However, in addition to targeting fish, the nets also catch a variety of ocean life that's usually thrown back into the water dead or dying. Dragging heavy gear across the seabed can also damage sensitive seafloor habitat. The harmful effects of bottom trawling on bottom-dwelling organisms and their habitat can be reduced by modifying the fishing gear or limiting the trawling area.

Annarasa says a fisherman needs up to 600,000 rupees to start fishing and if a net is damaged, the fisherman needs a quarter of that investment for repairs. "These fishermen use kerosene oil for their boats to cut the costs, and we have lost our income due to bottom trawling. Our fishing community is now reduced to 17,000 from 23,000 in the past few years," Annarasa said.

After many failed discussions with India on its fishermen illegally entering and using bottom trawl nets in Sri Lankan waters in Palk Strait, the fishing community in Jaffna launched a flotilla protest on October 17, demanding that the government strengthen existing laws and protect their own fishermen and bring to a stop the damage caused to their livelihood as well as the environment.

Resettlement is one of the key issues India has been pushing Sri Lanka towards since the end of the war as thousands of displaced Sri Lankan Tamils are still living in refugee camps in the South Indian state of Tamil Nadu. Many international aid agencies including the United Nations Development Program and the Canadian International Development Agency (CIDA) have helped northern fishermen restart their livelihood after resettlement.

Back to zero? The resettled fishermen had nothing but the skills of fishing and fish resources in the northern sea. They started from zero and now they are compelled to hit reset because most of their fishing gear is damaged. "We need the government to strengthen the existing laws that already states entering into our waters and using trawler boats are illegal.

The government must also provide compensation for the damaged boats and provide a mechanism for fishermen who lost their livelihoods and are unemployed as a result of this," N V Subramanian, Chairman of the Northern Fishermen Association, told EconomyNext. Sri Lanka amended provisions in the Fisheries and Aquatic Resources Act No 2 of 1996 in both 2017 and

2018 to charge foreign fishermen who trespass into Sri Lanka's waters and are involved fishing without a permit, entering into territorial waters without keeping the fishing gear stowed in their vessels and using banned bottom trawling nets towed by a mechanised boat.

Most fishermen urged the government to implement the amended act strictly. Already the amendment had angered Indian fishermen. Gajendrakumar Ponnambalam, an opposition lawmaker raised the issue in the parliament and said on July 22 alone 277 fishing nets in a small fishing village in Jaffna were damaged, with total damage estimated at 4 million rupees. "Indian fishermen have been encroaching into Sri Lanka waters.

These are fishermen who come in large trawlers and they have literally destroyed the fishing assets of the fishermen of the Northern Province, particularly from Mannar to Jaffna and Mullaitivu," he told the parliament on August 05. Vincent Arulnathan, president of Annai Velangkanni Fishermen Association in Mullaitivu, expects another gloomy month in November as Indian trawler boats can be seen as near as 1 kilometre from the shore.

"In November, it is shrimp season and these Indian trawlers will come for shrimp resources depriving many of our fishermen," he told EconomyNext over the phone. "Our livelihood is fishing and it is now being destroyed. Resettlement hardly means anything for us without our livelihood, and we only know fishing."

The fishing issue between the two neighbours began when India and Sri Lanka signed four Maritime Boundary Agreements between 1974 and 1976 that defined a mutual understanding of the international maritime boundary between the two countries.

Katchatheevu Island, famous for its annual St Anthony's festival, was ceded to Sri Lanka by India without consulting the Tamil Nadu state government. Since then, Indian fishermen have only been allowed to use the island for resting, drying their nets and for the annual church feast, but not for fishing.

Since 2009, after the end of the war, the Sri Lankan navy has tightened surveillance of its northern maritime boundary to halt a potential return of Tamil insurgents, resulting in increasing the number of Indian fishermen arrests, even as Sri Lankan authorities argue that they are simply protecting the maritime boundaries of the country against poaching and are securing the livelihood of Sri Lankan fishermen.

#### Lingering bilateral discussion

President Gotabaya Rajapaksa when he met Indian Foreign Secretary Harsh Vardhan Shringla last month in Colombo pointed out that the long standing problems faced by the fishermen of the two countries could be resolved by identifying immediate solutions to the existing problems and providing the benefits rightfully owed by the fishing community.

Fisheries Minister Douglas Devananda also expressed his displeasure over the illegal fishing of Indian fishermen in Sri Lankan waters sabotaging the livelihood of Sri Lankan fishermen and ruining the aquatic resources in Sri Lanka, when he met the visiting Indian Foreign Secretary.

Minister Devananda had told the Indian official that a large number of Indian fishing trawlers enter the Sri Lankan waters daily for illegal fishing amid strong protest by Sri Lankan authorities.

The Minister said that he had submitted a legal draft to the Indian authorities with a proposal to set up an India-Sri Lanka Joint Coastguard to halt the Indian bottom trawling during his visit to India as a member of the official entourage headed by Prime Minister Mahinda Rajapaksa in 2020. State Minister of Fisheries Kanchana Wijesekera said Sri Lanka has taken steps to ban bottom- trawler fishing practices and India too should do the same with its own fisheries act.

“So far we have not got positive feedback on that,” Wijesekera told EconomyNext. Sri Lanka has also requested both countries’ coastguards to work together to find a mechanism to prevent either party crossing the border. Sri Lanka has already taken steps to use a Vessel Monitoring System (VMS) in all the vessels and has requested India to do the same.

“If the Indian fishing ministry implements this, it could prevent illegal fishing,” the state minister said. “According to the laws in the country, the vessels that cross our border or are engaged in illegal fishing: those vessels will be confiscated, the fishermen will be released, but not the vessels,” he said. Many fishermen say they are considering moving to some other area in search of new jobs though they have no idea what to do for a living besides fishing.

### **India and Sri Lanka: Fishing in troubled waters: The Palk Strait dispute flares up**

<https://thediplomat.com/2021/02/fishing-in-troubled-waters-the-palk-strait-dispute-flares-up/>

"A maritime dispute between India and Sri Lanka remains unsolved, despite an agreement 47 years ago. Notwithstanding the 1974 Indo-Lanka Maritime Boundary Agreement, Indian fishermen tend to cross the maritime border into Sri Lanka in the Palk Strait, which in turn leads to assaults by the Sri Lankan Navy. The latest incident, which led to the death of four Indian fishermen, has once again brought the dispute to the fore.

On January 18, four Indian fishermen went missing as they ventured into Palk Strait. A few days later, the Sri Lankan Navy announced that it had recovered four bodies, suspected to be of the missing fishermen. As news reached the shores of the Indian state of Tamil Nadu, protests erupted as more than 200 fishermen blocked roads.

They demanded 1.5 million Indian rupees (about \$20,620) in compensation for the affected families and the filing of murder charges against the Sri Lankan Navy. However, the latter rejected the allegations and issued an official statement, blaming the fishermen instead.

In an interview with The Hindu, the Tamil Nadu representative of the Alliance for the Release of Innocent Fishermen, U. Arulanandam, alleged that the fishermen were beaten to death by Sri Lankan naval officers. “The pictures of the bodies bear many injuries and deep cuts. Blood clots and stains could be seen. There wouldn’t be blood clots if they had drowned,” he said.

He further stated that even if the fishermen had crossed the maritime boundary, they should have been arrested and not killed. Reacting to the death, India lodged a “strong” demarche with the Sri Lankan high commissioner in New Delhi and with the Sri Lankan Foreign Ministry via the Indian High Commission in Colombo.

While announcing compensation of one million Indian rupees (about \$13,746) and a job for each victim’s next of kin, the Tamil Nadu Chief Minister Edappadi K. Palaniswami urged Indian Prime Minister Narendra Modi to inquire about the incident through the Indian High Commission in Sri Lanka. The latest incident is an addition in a long list of cases of harassment of Indian fishermen by the Sri Lankan Navy.

Why do Indian fishermen cross the maritime border despite the obvious risks? For centuries, Indian and Sri Lankan fishermen communities have been fishing in each other’s waters without conflict. The scenario changed when India and Sri Lanka signed four Maritime Boundary Agreements between 1974-76, which defined their respective understanding of the international maritime boundary between the two countries. The idea behind these agreements were that they’d facilitate law enforcement and resource management in the Palk Strait.

Through the agreements, the Katchatheevu Island was ceded to Sri Lanka by the Indian government without consulting the Tamil Nadu state government. Since then, Indian fishermen have only been allowed “access” to the island for resting, drying of nets and the annual St. Anthony’s festival, but not for fishing. Despite the agreements, there is no well-defined maritime boundary between the two countries, leading to Indian fishermen trespassing into Sri Lankan waters in search of a better catch.

Between 1983 and 2009, Indian fishermen had easier access to the rich Sri Lankan waters as the maritime boundary in the Palk Strait was not heavily guarded. Since 2009, the Sri Lankan navy has tightened surveillance of its northern maritime boundary to halt a potential return of Tamil insurgents. This, in turn, has had the secondary effect of increasing the number of arrests of Indian fishermen, even as Sri Lankan authorities argue that they are simply protecting the maritime boundaries of the country against poaching, and securing the livelihood of Sri Lankan fishermen.

Is the dispute solvable? Following the latest incident, the Sri Lankan Fisheries and Aquatic Resource Minister appointed a three-member committee to find a lasting solution to the issue). According to the minister, India had accepted a draft solution submitted by Sri Lanka in January last year, but further progress was halted due to the COVID-19 pandemic. Indian and Sri Lankan representatives met again in December as part of the Joint Working Group on fisheries, where Sri Lanka had suggested joint patrols and operations between the two countries to guarantee effective results on illegal fishing and trespassing.

Despite having met more than once since 2016, a solution is yet to be finalized. Irrespective of the circumstances, a potential solution to the dispute relies on the response from the respective governments of India and Sri Lanka. If both countries are unable to settle the dispute, then they could seek assistance from international maritime experts through the United Nations.

## **India and Sri Lanka: Holds fifth working group meeting on fisheries**

<https://theprint.in/world/india-sri-lanka-holds-fifth-working-group-meeting-on-fisheries/890714/>

"The fifth meeting of the India-Sri Lanka Joint Working Group on Fisheries was held on March 25 through virtual mode, the Ministry of Fisheries, Animal Husbandry and Dairying said on Sunday. The Indian delegation was led by Jatindra Nath Swain, Secretary, Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying.

The other members of the Indian delegation included senior representatives from the Ministry of Fisheries, Animal Husbandry and Dairying, Ministry of External Affairs, Ministry of Home Affairs, Government of Tamil Nadu, Government of Puducherry, Indian Navy and Indian Coast Guard.

The Sri Lankan delegation was led by R.M.I. Rathnayake, Secretary, Ministry of Fisheries, Government of Sri Lanka. The other members of the Sri Lankan delegation comprised of senior officials from the Sri Lankan Foreign Ministry, Ministry of Fisheries, Department of Fisheries and Aquatic Resources, Navy, Coast Guard, Sri Lanka Police, Department of the Attorney General and National Aquatic Resources Research and Development Agency.

The Joint Working Group discussed all relevant issues in detail including the concerns relating to fishermen and fishing boats which have been on the agenda of bilateral discussions between India and Sri Lanka for many years.

Jatindra Nath Swain observed that the Indian side is always committed to work constructively with the Sri Lankan side towards the resolution of issues related to fishermen and their livelihoods in a humanitarian manner. He also took up the issue of the early release of Indian fishermen and boats currently in Sri Lankan custody. The Indian side expressed its readiness to work together with Sri Lanka for joint research to enhance the productivity of the Palk Bay fisheries.

Both sides also discussed cooperation between Navy and Coast Guard of both countries in patrolling, existing hotline between the Coast Guards and related operational matters including cooperation in tracking poaching, prevention of environmental damage due to bottom trawling, addressing grievances of fishermen on either side, besides issues relating to investigation on recent deaths of fishermen and status of apprehended fishermen and fishing boats.

The Indian side highlighted the initiatives taken by the Central and State Governments to diversify livelihood options and reduce fishing pressure in Palk Bay. It also informed that infrastructure has been created to facilitate deep-sea fishing and promotion of alternative livelihood through seaweed cultivation, mariculture and several aquaculture activities.

The Sri Lankan side proposed a faster transition to sustainable fishing in the Palk Bay fisheries and also suggested that India can help them develop the aquaculture sector and the associated infrastructure in Northern Sri Lanka. The meeting concluded on a positive note, with commitment towards continued cooperation and dialogue to solve the fishermen related issues

and to hold the next meeting of the Joint Working Group as per schedule.

It may be recalled that the First Meeting of the Joint Working Group (JWG) was held on December 31, 2016, in New Delhi. The Second Meeting of the JWG was held in Colombo on April 7, 2017. The Third Meeting was held in New Delhi on October 13, 2017, while the Fourth JWG met in virtual mode on December 30, 2020.

### **India and Sri Lanka: India in high-level talks with Sri Lanka on release of fishermen: MEA**

<https://www.aninews.in/news/world/asia/india-in-high-level-talks-with-sri-lanka-on-release-of-fishermen-mea20210204224220/>

"The Ministry of External Affairs (MEA) on Thursday said the Indian government has been holding high-level talks through diplomatic channels with the Sri Lankan government on the release of fishermen and their boats. Replying to questions by MP Vaiko at the Rajya Sabha, V Muraleedharan, Union Minister of State (MoS) in MEA, said that at present 12 Indian fishermen, arrested along with two boats in January 2021, are in Sri Lankan custody. "

"In 2020, 74 Indian fishermen were arrested and 11 boats were confiscated by the Sri Lankan authorities. With sustained diplomatic efforts, the Government has secured the release of all these fishermen. At present, 12 Indian fishermen, arrested along with 2 boats in January 2021, are in Sri Lankan custody,"" he said.

The MoS said that the fishermen have been provided with consular and legal assistance by Indian High Commission in Colombo and Consulate in Jaffna. ""Efforts are ongoing to secure the release of these fishermen.

Presently, 62 boats of Indian fishermen are in Sri Lankan custody." He further said, ""Government has been taking up the matter of the release of our fishermen and their fishing boats with the Government of Sri Lanka at high levels through diplomatic channels.

Following the 2+2 initiative in November 2016 when the Foreign and Fisheries Ministers of the two countries met in New Delhi, a bilateral Joint Working Group (JWG) mechanism and meeting of the Ministers for Fisheries of the two countries was institutionalized to address the fishermen issues with Sri Lanka."

"On December 30, 2020, the fourth round of JWG talks was held between the two governments where the entire gamut of issues related to fishermen was discussed, he added.

### **India and Sri Lanka: Indo-Lankan fishing conundrum**

<https://menafn.com/1101852237/Indo-Lankan-fishing-conundrum>

"The recent arrest of 54 Tamil Nadu fishermen by the Sri Lankan navy and their subsequent release under diplomatic pressure, have again brought into focus the intractable India-Sri Lanka

row about fishing in the narrow Palk Strait. Geographical, historical and political factors have complicated the issue which, on the face of it, is a solvable one. The Indian authorities have invariably succeeded in securing the release of arrested fishermen on appeals from Tamil Nadu fishermen and State leaders. But this time round, a sense of urgency was palpable.

A possible reason is that, Tamil Nadu is in the final leg of campaigns for the April 6 State Assembly elections. The ruling All India Anna Dravida Munnetra Kazhagam (AIADMK), in alliance with Indian Prime Minister Narendra Modi's Bharatiya Janata Party (BJP), is fighting to retain power against a formidable challenge mounted by the Dravida Munnetra Kazhagam (DMK)-Congress alliance. And for the first time, the BJP is contesting 20 out of 234 seats, the highest thus far.

Coastal fishermen are not only numerous but are also traditional supporters of the AIADMK, whose founder-leader matinee idol M.G.Ramachandran, was acclaimed as 'Meenavar Nanban' or 'Friend of Fishermen'. An agitation among fishermen could, therefore, spell the AIADMK-alliance's electoral doom.

### Licensing Fishing Vessels

Adding a new dimension to the fishing issue is Sri Lankan Fisheries Minister Douglas Devananda's offer of licensed fishing to Indian vessels in the Palk Strait. There is speculation that the offer stemmed from Sri Lanka's need to mollify India, which is miffed by the former's moves favoring China in the allocation of developmental projects. Minister Devananda said that he would be holding talks with the Tamil Nadu government about a limited number of Indian vessels engaging in fishing in Sri Lankan waters on a weekly basis subject to a large levy. The period assigned to each vessel would be one week.

Bottom trawlers would not be allowed. But the cabinet spokesman, Udaya Gammanpila, denied that government has taken any decision in this matter. Be that as it may, this is not the first time that licensed fishing has been suggested. It had been proposed by the Indian side a number of times earlier, but had always been rejected by Sri Lankan fishermen. Tamil Nadu fishermen have been consistently claiming a traditional right to fish throughout the Palk Strait. The Palk Strait is too narrow for division into sovereign zones.

They also point out that the Maritime Boundary Line (MBL) was drawn in the mid-1970s, without taking their views into account. In fact the State of Tamil Nadu was not consulted. But Sri Lankan fishermen have never challenged the MBL. They see Indian intrusions as illegal and a violation of their natural right. K. Rajachandran, a leader of the fishermen in Karainagar in Jaffna, said that Minister Devananda has 'betrayed' Lankan fishermen by offering a licensing system.

S.P.Anthonymuthu, belonging to a Catholic organization which had arranged meetings between Sri Lankan and Tamil Nadu fishermen in the past, said that under the guise of licensed fishing, Tamil Nadu fishermen could bring contraband. V.Vivekanandan, a noted Indian expert on fishing issues, said licensed fishing is an 'impractical idea'. But Arulanandam, an Indian leader of an alliance for the release of detained fishermen, said that licensing is good in principle but

added that he needs to know the conditions attached to it to be able to give a definitive reply. Since bottom trawling indulged in by Indian fishermen is a major issue in Sri Lanka, Sri Lankan negotiators have insisted that the Indians give up bottom trawling.

In July 2017, Sri Lanka became the first Asian country to ban bottom trawling. It carries a fine of LKR 50,000 with two years of imprisonment. On its part, India had introduced a scheme to replace 2,000 trawlers by deep-sea tuna long liner-cum-gill-netter boats. The idea was to divert their attention from the shallow Palk Strait bordering Sri Lanka to the Bay of Bengal. The Tamil Nadu government had sought from the Central government, INR 16.5 billion for the conversion scheme. A small part of the money was disbursed, but the scheme never took off.

'Tamil Nadu fishermen are not into deep sea fishing at all. They fish in shallow waters not more than 20 meters deep. They do not have the skills or the frame of mind to go to the mid-ocean and stay put there for two or three months,' Vivekanandan explained. Deep sea fishing also needs expensive equipment and the competition is tough, being international.

Indian trawlers in the Palk Strait Misled by Tamil Nadu fishermen's propaganda that they do not go beyond Kachchativu island and that the Sri Lankan navy attacks them on the Indian side of the island, Chief Minister J.Jayalalitha filed a case in the Indian Supreme Court to get back Kachchativu which had been handed over to Sri Lanka in the mid-1970s. Prof.V.Suryanarayan had floated the idea of taking the island on lease.

But none of these demands had New Delhi's backing. Prior to the December 2004 Tsunami, Indian fishermen had accepted that bottom trawling must be discontinued. They also agreed to (1) reduce the number of fishing days to two per week, (2) maintain a distance of three nautical miles from the shore so that the livelihoods of Sri Lankan fishermen were not affected, (3) reduce the fishing time to twelve hours per trip, and (4) introduce a monitoring and enforcement mechanism. But this agreement was not implemented.

In August 2010, negotiations resumed. Sri Lankan fishermen lamented the damage caused by bottom trawling, and requested an immediate end to the practice. The Indian delegates pointed out that unless their government introduced concrete steps to buy back trawlers, it would not be possible to stop trawling. The conclusions of the dialogue were submitted to government representatives, but the dispute remained unresolved.

Anthonymuthu recalled that the Indian fishermen had sought 70 days' time to get rid of their trawlers, but there was no follow up. In 2005, India and Sri Lanka established a Joint Working Group on Fishing. New Delhi mooted the idea of licensing Indian fishermen, but only to be met with stiff opposition from the Sri Lankan side. Sri Lanka had proposed joint patrolling of the MBL by the Indian Coast Guard and the Sri Lankan navy, but this was not favored by India.

Anthonymuthu, said that a solution to the problem could come only from an agreement between the two fishing communities and the strict implementation of that agreement by the governments of the two countries. But according to Vivekanandan, the fishing issue is entangled in the competitive politics of Tamil Nadu and therefore difficult to solve. Both the AIADMK and the DMK fiercely compete for the votes of fishermen by pandering to their demands, no matter how

unreasonable they may be. The Congress too has gone along with these two parties, motivated by the same consideration. The BJP too will do the same, now that it has entered Tamil Nadu politics as an ally of the AIADMK.

As per a 2018 Sri Lankan law a fee of minimum 4 million Sri Lankan Rupees and a maximum of LKR 150 million would be slapped on any vessels, in proportion to their length, for entering the country's coastal waters without license. To some extent this deterred Indian fishermen intruding into Sri Lankan waters. But given the fact that Indian intrusions tend to be treated as a bilateral matter, and the arrested fishermen are routinely released, it is doubtful if fines will ever be imposed on Indian intruders.

Meanwhile, given the intractability of the problem, Indian diplomats have been focusing on the doable- namely, ensuring the release of detained Indian fishermen and trawlers at the earliest. They have also been urging Colombo to treat the arrested fishermen humanely. So far, such diplomatic efforts have succeeded. But the basic problem of poaching in Sri Lankan waters in the Palk Strait remains unsolved.

### **India and Sri Lanka: Jaishankar Meets Sri Lanka Minister, Discusses Cooperation On Fisheries**

<http://www.businessworld.in/article/Jaishankar-meets-Sri-Lanka-Minister-discusses-cooperation-on-fisheries/07-01-2021-362646/>

"External Affairs Minister S Jaishankar on Thursday met Douglas Devananda, Sri Lanka's Minister of Fisheries during his three-day visit to the country, and reviewed cooperation in a joint working group session on fisheries. ""A productive meeting with Fisheries Minister Douglas Devananda. Reviewed our cooperation in fisheries after the recent Joint Working Group session. Look forward to working with him closely,"" Jaishankar wrote in a tweet.

Jaishankar, who is on a three-day visit to Sri Lanka, also met with Sri Lanka's former Prime Minister of the Democratic Socialist Republic and Leader of the United National Party (UNP) Ranil Wickremesinghe. ""Pleasure to catch up with former PM @RW\_UNP. Appreciated his long-standing support for our bilateral relationship,"" Jaishankar wrote in a tweet. Jaishankar also called on Sri Lanka's leader of opposition Sajith Premadasa and exchanged views on bilateral relations."

"Happy to meet Leader of Opposition @sajithpremadasa and his delegation. Appreciated the exchange of views on our bilateral relationship,"" Jaishankar wrote in a subsequent tweet. Taking to Twitter, Jaishankar said that he interacted with the business leaders of Sri Lanka ""A very useful interaction with business leaders of Sri Lanka.

Appreciated their insights and suggestions on economic cooperation,"" Jaishankar wrote in a tweet. This is the first foreign visit by Jaishankar in 2021, and also the first by a foreign dignitary to Sri Lanka in the new year.

### **India and Sri Lanka: Northern fishermen seek India's action over disputes**

<https://www.ft.lk/front-page/Northern-fishermen-seek-India-s-action-over-disputes/44-724425>

"Sri Lanka's northern fishermen want authorities in India and Sri Lanka to urgently step-up action to resolve the long-persisting conflict in the Palk Strait, fearing tensions with Indian fishermen could escalate. In a letter submitted at the Indian Consulate in Jaffna last week, the Federation of Jaffna District Fishermen's Cooperative Society Unions pointed to the perils of bottom-trawling and pair-trawling fishing methods – commonly used by Tamil Nadu fishermen – resulting in a drastically smaller catch and frequent damage to their modest fishing gear.

"We are very worried that despite discussing this problem for more than 10 years now, there has been no forward movement or a solution until now. Indian fishermen crossing the maritime boundary and fishing in our waters has resulted in huge losses amounting several crores to our fishermen," said the letter dated 10 October. The fisher associations have also sought compensation from Indian authorities to cope with the financial losses.

Having braved the civil war, the displacement and dispossession that came with it, the northern fishermen have been struggling to rebuild their livelihoods post-war. However, the ongoing conflict with Indian fishermen – mostly from Tamil Nadu's Ramanathapuram and Nagapattinam districts – has severely impacted the revival of their livelihoods. The fishermen's concerns, voiced in the recent letter, also come amid reports of Tamil Nadu fishermen being attacked at sea, allegedly by their Sri Lankan counterparts. Fishermen's groups along Tamil Nadu's coastal belt held protests last month, condemning the attacks.

Tamil Nadu has repeatedly accused the Sri Lankan Navy of attacking or killing its fishermen in the Palk Strait, including in January this year, when Samson Darwin (28), A. Mesiya (30), V. Nagaraj (52), and S. Senthil Kumar (32) from Ramanathapuram returned dead. Sri Lankan authorities have denied the allegations. While New Delhi conveyed "strong protest" over the incident then, there is no word yet on the promised probe into their deaths, from either government. The investigation into the shooting of K. Britjo in March 2017 too has seen no update in the four years since.

However, the recent allegations made by Tamil Nadu fishermen against fellow fishermen in Sri Lanka have sparked serious concern. "This is a very dangerous development. Despite our disagreement with our brothers in Tamil Nadu, we have always been in solidarity. We have relied only on dialogue and never resorted to violence. We fear that certain political forces are instigating some groups to carry out these attacks," a fishermen's association representative in Jaffna told The Hindu, requesting anonymity.

"Before this escalates, both governments must take swift and decisive action," he said. Meanwhile, addressing a media conference, Jaffna legislator M.A. Sumanthiran accused Fisheries Minister Douglas Devananda of provoking violence among fishermen of the two countries.

"Since he is the subject minister, that too from Jaffna, he is in a good position to implement the laws we have in place to take action on illegal fishing and bottom trawling. I urge all our

fishermen to respond to this problem in democratic ways, and not resort to violence at any cost,” he said, calling for a peaceful protest next weekend.

### **India and Sri Lanka: Reconsider MOU with India on fishing in Sri Lankan waters – Minister**

<http://www.dailynews.lk/2022/01/03/local/269192/reconsider-mou-india-fishing-sl-waters-minister>

"He said Indian fishermen continue to blatantly violate its terms by breaching the maritime boundaries time and again and causing considerable damage to Sri Lanka's marine resources. The Minister on Saturday visited the 56 Indian fishermen detained at the Jaffna Prison for trespassing on Sri Lankan waters.

The minister held talks with the Indian fishermen and also provided them with goods. Speaking to the media after the meeting, Minister Devananda said that the Tamil Nadu Government should pay attention to the damage being done to the marine resources and Sri Lanka by the Indian fishermen's invasion of the Northern Sea. "Our people demand an immediate end to the trawling industry that is destroying Sri Lanka's marine resources and the livelihoods of our people. Indian fishermen should also understand this.

The depletion of marine resources is also destroying the livelihoods of the Indian fishermen themselves". "I am aware that Indian fishermen are also engaged in this business for their livelihood. However, the Memorandum of Understanding signed between the two countries states that the two countries' fishermen can only engage in fishing in their territorial waters without violating the International Maritime Boundary Line in a manner that does not cause any harm to either country".

Minister Devananda went on to say that to resolve the issue of Indian fishermen invading the Northern seas, which has become a major issue, political and fisheries representatives of both countries should immediately meet and reconsider the terms of the Memorandum of Understanding on Fisheries and take appropriate decisions.

Meanwhile, the Marumalarchi Dravida Munnetra Kazhagam (MDMK) General Secretary and Member of Parliament, Vaiko, said that the fishermen from Tamil Nadu are jailed by Sri Lankan authorities on flimsy charges and called upon the Government of India to take the issue at the diplomatic level to find a solution at the earliest.

### **India and Sri Lanka: Signed six agreements to boost bilateral cooperation**

[https://www.business-standard.com/article/current-affairs/india-sri-lanka-ink-six-agreements-to-boost-bilateral-cooperation-122032900835\\_1.html](https://www.business-standard.com/article/current-affairs/india-sri-lanka-ink-six-agreements-to-boost-bilateral-cooperation-122032900835_1.html)

"India and Sri Lanka have signed six agreements to boost bilateral cooperation in diverse sectors like technology, fisheries and hybrid power projects, the Indian High Commission here has said.

Under the agreements, which were signed on Monday in the presence of External Affairs Minister S Jaishankar and his Sri Lankan counterpart GL Peiris, India will also provide grant assistance for the implementation of Sri Lanka's Unique Digital Identity. The MOUs include implementation of Sri Lanka Unique Digital Identity (SL-UDI) programme with India's grant assistance and for providing Maritime Rescue Coordination Center.

There is an MOU on implementation of Hybrid Power Projects in three Islands off Jaffna and also on cooperation in development of Fisheries Harbours in Sri Lanka, the mission said.

The two sides signed MoUs for the establishment of modern computer labs and smart boards with customised curriculum software in 200 schools in Galle District and a separate MOU between Sushma Swaraj Institute of Foreign Service and the Bandaranaike International Diplomatic Training Institute.

Jaishankar also separately met Minister of Fisheries and Aquatic Resources Douglas Devananda and discussed issues pertaining to fishermen and exchanged views on devolution, the statement said. Jaishankar met a delegation from the Tamil National Alliance (TNA) led by R Sampanthan, MP, on Monday.

Jaishankar welcomed the positive developments regarding the issues on the Government-TNA agenda. He emphasised that India was consistently supportive of the realisation of the aspirations of the Tamils of Sri Lanka for equality, justice, peace and dignity within the framework of a united Sri Lanka.

Jaishankar arrived here on Sunday to attend the ongoing 18th BIMSTEC Ministerial Meeting in Colombo. He held bilateral talks with Sri Lanka's top leadership on Monday. This is his first visit to the island nation since India extended an economic relief package to bail Sri Lanka out of the current economic crisis.

During his separate meetings with President Gotabaya Rajapaksa and Prime Minister Mahinda Rajapaksa, Jaishankar assured them of India's continued support in Sri Lanka's economic recovery process.

The statement also pointed out that the Jaffna Cultural Center is a glowing example of India-Sri Lanka development partnership. It was conceived as a reconciliation project primarily aimed at expanding cultural infrastructure for people of Northern Province, it said.

The state-of-the-art facility, constructed with grant assistance from the Indian Government, consists of multiple facilities such as a museum of two floors; an advanced theatre style auditorium for more than 600 people; a 11-storeyed learning tower; a public square which could also act as an amphitheater etc, it said."

**India and Sri Lanka: The Palk Bay fisheries conflict, a tale of competing livelihoods and a depleted catch**

<https://www.thehindu.com/news/national/the-palk-bay-fisheries-conflict-a-tale-of-competing-livelihoods-and-a-depleted-catch/article65048871.ece>

"Why are both the fishing communities from Tamil Nadu and Sri Lanka at odds with each other? The story so far: The Sri Lankan Navy on Saturday arrested 12 Indian fishermen from Rameswaram district, Tamil Nadu, and seized two of their fishing boats on charges of engaging in illegal fishing activity. This is the third such arrest in a fortnight, prompting Tamil Nadu Chief Minister M.K. Stalin to, yet again, write to Prime Minister Narendra Modi, seeking the Centre's immediate intervention to secure their release.

The development comes about 10 days after fishermen in Jaffna, in Sri Lanka's Northern Province, held a large protest, demanding strict implementation of Sri Lankan laws against illegal fishing by foreign vessels. Though a long-dragging issue dominating Indo-Lanka bilateral ties, the recent weeks saw an escalation in tensions between fishermen following the death of two Jaffna fishermen, reportedly in mid-sea clashes with their Tamil Nadu counterparts.

Sri Lanka has termed the fisheries conflict a diplomatic "flashpoint", threatening ties that are on the mend after a period of strain. What is the backstory? For well over a decade now, fishermen of India and Sri Lanka have been unable to agree on how to share the fishes in the narrow Palk Strait separating the two countries. The Strait begins just north of Sri Lanka's Jaffna peninsula and spans about 100 km at its widest point. It is known to be a breeding ground for rich marine resources, especially shrimp.

Although India and Sri Lanka agreed to divide the Strait with an imaginary boundary line in the 1970s —the International Maritime Boundary Line (IMBL) – Indian fishermen, from the coastal districts of Tamil Nadu, and from Puducherry, are frequently arrested by the Sri Lankan Navy for "poaching" or engaging in "illegal" fishing activity in Sri Lankan waters. Several rounds of bilateral negotiations between the two governments and talks between fishing community leaders from both sides have been held over the years, but a solution remains elusive.

What is the conflict, and between whom? The main contention between the fishermen on either side is not so much about territorial rights, as historically both sides have amicably shared marine resources in the stretch. It is more to do with the use of "bottom trawling", the fishing method used by fishermen from Tamil Nadu. A group of daily-wage fishermen set out on mechanised boats, owned by other affluent fishermen, and drag large fishing nets through the seabed.

While they primarily target fish species and shrimps, the practice of bottom trawling scoops out eggs, young fishes, and other marine organisms that eventually die and are thrown back into the sea. The primary conflict here is between the Tamil Nadu trawler owners and the northern Sri Lankan fishermen, who are trying to rebuild their livelihoods after Sri Lanka's civil war ended in 2009.

Until then, they were denied access to the sea at different points and displaced from their homes. It is in the post-war decade that the Sri Lankan fishermen started voicing concern about depleting catches, owing to incessant trawling by the Indian fishermen. With the Indian side of the IMBL already ravaged by decades of high profit-yielding bottom trawling, they flock to the Sri Lankan

side, with relatively less damage and therefore, more marine resources. The clash now is essentially over competing livelihoods of two Tamil-speaking fisher communities, with a glaring asymmetry in power and resources.

The Tamil Nadu fishing community, especially the trawler owners, are not only wealthier but also very politically influential. The northern Sri Lankan fishermen, on the other hand, are coming out of a brutal war, braving enormous losses and destruction. They use modest boats to practice traditional fishing and get little state support to resurrect their livelihoods. Why is it yet to be resolved? One reason is the growing human cost of the conflict — five Indian fishermen returned home dead last year after the Sri Lankan Navy allegedly attacked them mid-sea.

More recently, the death of the two Jaffna fishermen has aggravated the anger on the Sri Lankan side as well. For years now, India has urged Sri Lanka to adopt a humanitarian approach when it deters Indian fishermen. However, when fishermen deaths occur, apart from customary condemnations and denials, there is little effort from authorities on either side to ensure investigations are completed and perpetrators brought to book.

Secondly, New Delhi tried diverting Tamil Nadu fishermen to deep sea fishing methods to wean them away from bottom trawling in the Palk Strait. But the initiative did not take off as planned, and the fishermen still resort to trawling, and often get caught by Sri Lankan authorities. Thirdly, Tamil Nadu is yet to agree to the chief demand of northern Tamil fishermen — to stop bottom trawling to restore trust between the fishermen on both sides, and provide a real opportunity to re-commence talks, which they prefer over confrontation.

The northern Tamil fishermen repeatedly acknowledge Tamil Nadu's solidarity and support extended to Sri Lankan Tamils during the years of war and later. But they also remind their brothers across the Palk Strait that solidarity does not justify exploitation of resources on which their lives and livelihoods depend.

#### The Gist

For over a decade now, fishermen of India and Sri Lanka have been unable to agree on how to share the fishes in the narrow Palk Strait which separates the two countries. The main contention between the fishermen on either side is about the use of “bottom trawling”, the fishing method used by fishermen from Tamil Nadu.

In this method, fishermen set out on mechanised boats and drag large fishing nets through the seabed. While they primarily target fish species and shrimps, the practice also scoops out eggs, young fishes, and other marine organisms damaging the seabed.

Apart from customary condemnations and denials whenever there are fishermen deaths, there is little effort from authorities on either side to find a solution to this problem.

#### **India and Sri Lanka: Why Indian fishermen are often caught fishing in Sri Lanka's troubled waters**

<https://www.firstpost.com/india/why-indian-fishermen-are-often-caught-fishing-in-sri-lankas-troubled-waters-10468901.html>

"Many Indian fishermen are often captured by Sri Lanka for crossing maritime boundary between two nations and particularly crossing into Kachchatheevu island; it is becoming a flashpoint in bilateral relations, which is otherwise quite friendly.

India and Sri Lanka resolved their maritime boundary demarcation by 1976, yet there remains issue of fishermen being detained by the two sides. The local politics in both countries intensifies the situation. Till the mid-2000s from 1983, 132 Indian fishermen reportedly died in Sri Lankan firings, several fishermen could not be traced and are declared missing, nearly 90 fishermen have been detained and over 300 vessels have been detained.

Claim over Kachchatheevu Island: Brief history

Kachchatheevu is an island located in the Palk Strait about 10.5 miles from the Sri Lankan coast and nearly 12 miles from India's nearest coast; it is nearly 3.75 square miles in area. Dispute over ownership of the island has remained since the colonial period. It was claimed that the island was a part of Raja of Ramnad's (Ramanathapuram of Tamil Nadu) zamindari. During 1880 and 1885, the island was given to Sri Lanka for the purposes of root collection which would serve in the process of dyeing.

Later in 1913, the island remained in the possession of Sri Lanka for sankha shells' full exploitation and use. Notably, the zamindari system lapsed and since all the zamindari land now vested in either government of India or government of Tamil Nadu, legally speaking the land was to pass to India or Tamil Nadu via lapse of zamindari. No effort was taken on the government of India's part to settle the issue of legal ownership of land. Consequently, Sri Lanka retained the possession of Kachchatheevu island, though it must be pointed out that the government of Tamil Nadu continued to maintain its legal ownership of the island. Later in 1976, the island was ceded to Sri Lanka to maintain friendly relations.

Understanding the issue from fishermen's viewpoint

At this stage, it is essential to understand what influences the thought process of fishermen to fish beyond maritime boundaries. Notably, northern parts of Sri Lanka and southern parts of Tamil Nadu lies at the same LBG ('Latitudinal Biodiversity Gradient'). LBG provides for the existence of marine life and how marine life traverses in the area. Further, there is absence of any strong current in the region and consequently the marine life found in the region is also similar. Hence, fishermen on both side of boundary are after the same marine life.

If marine life on either side depletes, the marine life on other side of maritime boundary becomes the source of very same marine life. This is quite the reality because Indian fishermen by use of trawlers have nearly depleted marine resources on Indian side of maritime boundary. On the other hand, Kachchatheevu island which now forms part of Sri Lanka is fish-rich. This is because Sri Lanka has imposed ban on trawling in the region and also because the population of Sri Lankan fishermen is not as high.

Further, not all crossing of maritime boundary is intentional. There have been many instances of inadvertent straying into maritime boundary as these are imaginary lines demarcated by nations and often not clearly discernible in waters. This inadvertent straying may be caused by failure of boat's engine or sudden disturbance caused by weather conditions in the region.

#### International law on the Kachchatheevu issue

Fishing practices of Indian fishermen where they use trawlers is harmful to marine environment and may potentially cause change to marine life in the region and possibly the ecosystem of the region as well. Therefore, India may be said to be under obligation under Article 206 of the UNCLOS 1982 to communicate reports of such change in marine environment. However, not having communicated such a report may lead to breach of such an obligation. Further, India is bound to take precautionary approach mandatory for environment preservation, as dictated by Articles 194 and 204 ('Part XII') of the UNCLOS 1982.

Sri Lanka and India both came up with a Joint Working Group on Fisheries (JWG) in 2004. The JWG was assigned to deal with the issue of fishermen crossing the maritime boundary between India and Sri Lanka. Despite such an agreement in fourth JWG (2012), excesses by Sri Lankan Navy have not stopped. There have been multiple reports of incidents whereby Sri Lankan Navy used force on fishermen who crossed the maritime boundary. Further, many arrests have deemed to be unwarranted as these fishermen could not have been mistaken for smugglers given that they had proper documents for identification issued by Tamil Nadu government.

It has been reported that many a times fishermen from Indian side provide a detailed list of fishermen to Indian authorities before entering the maritime zone and at times they have been given a token for the trawler for buying diesel essential for operation of trawlers. Therefore, actions undertaken by Sri Lankan Navy is in breach of agreements reached at Fourth JWG. Indian fishermen have considered it their traditional right to celebrate St Anthony's festival at the Catholic Church and to dry their nets in Kachchatheevu island. This is also guaranteed in the agreement, which is the core instrument for settlement of maritime boundary between India and Sri Lanka.

Therefore, a duty is cast upon Sri Lankan authorities to ascertain before detaining or shooting Indian fishermen whether the fishermen are there for exercise of their traditional rights as per the agreement, i.e. to dry nets or celebrate the festival of St Anthony's. Unless this exercise is carried out, any action by Sri Lankan authorities would be vitiated by illegality and non-compliance of the agreement which gives them the right to have the Kachchatheevu island as their territory.

#### Way forward: Taking fishermen's view into account

It is clear that both Indian and Sri Lankan side are at fault. Given the close cultural, religious ties of Sri Lanka with India, any litigation may potentially impact political situation in Sri Lanka and India and also the economic ties as Sri Lanka is dependent on India to a great extent.

At the same time, it is surprising to note that fishermen who are at the heart of this issue are not

consulted. Their absence in the international law regime is quite surprising and hence fishermen are marginalised without their voices actually being heard. It is imperative that fishermen be heard in JWG (or any other machinery) to reach an agreement which is then highly likely to be complied by all, including fishermen."

### **India and Sri Lanka: Working towards addressing issues faced by fishing communities**

[https://www.dailymirror.lk/print/front\\_page/India-and-SL-working-towards-addressing-issues-faced-by-fishing-communities-Indian-HC/238-233005](https://www.dailymirror.lk/print/front_page/India-and-SL-working-towards-addressing-issues-faced-by-fishing-communities-Indian-HC/238-233005)

"Indian High Commissioner Gopal Baglay yesterday said that India and Sri Lanka are working together towards addressing the issues faced by fishing communities of both countries.

The High Commissioner made this comment after he inaugurated a humanitarian assistance programme, for fishermen and their families in the Northern Province, The programme is being carried out under grant assistance by Government of India.

1200 families spread across Jaffna, Mullaitivu, Kilinochchi and Mannar will receive food materials and other essential domestic supplies as a part of the programme. The envoy also inaugurated an artificial limb fitment camp in Jaffna held by Bhagwan Mahaveer Viklang Sahayata Samiti (BMVSS)."

### **India- France's blue economy roadmap**

<https://newsonair.com/2022/04/03/with-shared-maritime-cooperation-india-france-conduct-exercise-varuna/>

"Various units of the Indian and French Navies including submarines, ships, maritime patrol aircraft, fighter aircraft, and helicopters are taking part in the maritime drill. Further, these units will pave way for enhancing and honing the operational skills in maritime theatre, augment interoperability to undertake sea security operations, and demonstrate their commitment to promote peace in the region as an integrated force.

It is noteworthy that both the countries through the bilateral naval have grown in scope and complexity over the years. 'VARUNA' series of exercises continue to provide both the navies opportunities to learn from each other's best maritime practices.

Notably, the maritime has been an imperative driver for operational-level interactions between Indian & French navies and has showcased the shared commitment of both nations to security, safety, and freedom of the global maritime commons.

In 1993, the two Navies initiated the maritime exercise. In 2001, this exercise was christened as 'VARUNA', which became a vital part of India – France strategic bilateral relationship.

The 19th edition of 'VARUNA'

The 19th edition of 'VARUNA-2021' was conducted in the Arabian Sea from 25th to 27th April 2021.

The exercise witnessed the participation of the Indian Navy's guided-missile stealth destroyer INS Kolkata, guided-missile frigates INS Tarkash and INS Talwar, Fleet Support Ship INS Deepak, with Seaking 42B and Chetak integral helicopters along with a Kalvari class submarine. A P8I Long Range Maritime Patrol Aircraft also showcased its maneuvers as a part of the exercise.

The French Navy was represented by the Aircraft Carrier Charles-de-Gaulle with Rafale-M fighter, E2C Hawkeye aircraft and helicopters Caïman M along with other

The three-day exercise showed the high tempo-naval operations at sea, including advanced air defence and anti-submarine exercises.

VARUNA naval exercise has been highlighting the growing bonhomie and increased levels of synergy, coordination, and interoperability between the two Indian & French navies. Further, these drill has far impacts on the further shared values as partner navies, in ensuring freedom of seas and commitment to an open, inclusive Indo-Pacific.

India- France's blue economy roadmap

India and France are maritime nations with thriving maritime economies that include, marine technology and scientific research, fisheries, port and shipping. Both have vast exclusive economic zones, and their fate is inextricably linked to the sea and the ocean.

India and France intend to use the blue economy to propel their respective societies forward while also protecting the environment and coastal and marine biodiversity.

Considering this, both nations have inked a roadmap to enhance their bilateral exchanges on the blue economy and forge a common vision of ocean governance based on the rule of law and cooperate on sustainable and resilient coastal and waterways infrastructure. The agreement was signed during External Affairs Minister Dr. S Jaishankar's three-day visit to France with his French counterpart Jean-Yves Le Drian in February 2022.

Further, both countries have been contributing to the United Nations Sustainable Development Agenda, which aims to conserve and sustainably use the oceans, seas, and marine resources."

**India is now among the most unequal countries in the world, says World Inequality Report 2022**

<https://wir2022.wid.world/>

"Extreme income inequalities in India The average national income of the Indian adult population is €PPP7,400 (or INR204,200).<sup>10</sup> While the bottom 50% earns €PPP2 000 (INR53,610), the top 10% earns more than 20 times more (€PPP42 500 or INR1,166,520). While the top 10% and top 1% hold respectively 57% and 22% of total national income, the bottom

50% share has gone down to 13%. India stands out as a poor and very unequal country, with an affluent elite.

### Income inequality in the long run: A historical high

Indian income inequality was very high under British colonial rule (1858-1947), with a top 10% income share around 50%. After independence, socialist-inspired five-year plans contributed to reducing this share to 35-40%.

Since the mid1980s, deregulation and liberalization policies have led to one of the most extreme increases in income and wealth inequality observed in the world. While the top 1% has largely benefited from economic reforms, growth among low and middle income groups has been relatively slow and poverty persists. Over the past three years, the quality of inequality data released by the government has seriously deteriorated, making it particularly difficult to assess recent inequality changes.

### Wealth inequality

Average household wealth in India is equal to €PPP35,000 or INR983,010 (compared with €PPP81,000 in China). The bottom 50% own almost nothing, with an average wealth of €PPP4,200 (6% of the total, INR66,280). The middle class is also relatively poor (with an average wealth of only €PPP26 400 or INR723,930, 29.5% of the total) as compared with the top 10% and 1% who own respectively €PPP231,300 (65% of the total) and over €PPP6.1 million (33%), INR6,354,070, and INR32,449,360.

### Gender inequality

Gender inequalities in India are very high. The female labor income share is equal to 18%. This is significantly lower than the average in Asia (21%, excluding China). This value is one of the lowest in the world, slightly higher than the average share in Middle East (15%). The significant increase observed since 1990 (+8 p.p.) has been insufficient to lift women's labor income share to the regional average.

### Carbon inequality

India is a low carbon emitter: the average per capita consumption of greenhouse gas is equal to just over 2 tCO<sub>2</sub>e. These levels are typically comparable with carbon footprints in sub-Saharan African countries. The bottom 50%, middle 40% and top 10% respectively consume 1, 2, and 9 tCO<sub>2</sub>e/capita. A person in the bottom 50% of the population in India is responsible for, on average, five times fewer emissions than the average person in the bottom 50% in the European Union and 10 times fewer than the average person in the bottom 50% in the US. The full report is available at: <https://wir2022.wid.world/>

### **India loses its coastline by over a third due to climate change**

<https://www.theindianwire.com/environment/while-india-loses-its-coastline-by-more-than-a-third-is-there-any-other-face-of-changing-indias-coasts-due-to-climate-change-319292/>

"According to a recent report released by India's National Centre for Coastal Research (NCCR) under the Union Ministry of Earth Sciences, the world waters have changed in vast ways. Between 1990 and 2018 approximately 32% of India's coastline is undergoing sea erosion but it is equally enticing that 27% could experience expansion. This is not totally unimaginable situation as the global temperatures outrun modesty.

### **India seeks to develop seaweed and shrimp sectors**

<https://thefishsite.com/articles/india-seeks-to-develop-seaweed-and-shrimp-sectors>

"India's Central government is looking forward to developing a sustainable seaweed cultivation sector, as well as stepping up a shrimp ranching initiative, according to Jatindra Nath Swain, the country's fisheries secretary.

At a time when climate change is increasingly posing a major threat to human life across the globe, cultivating seaweed, will help to boost the economy and reduce the impact of climate crisis as well, he said.

### **India to certify shrimp farms**

<https://www.thehindu.com/news/national/certification-scheme-to-encourage-good-aquaculture-practices/article34295794.ece>

"To bolster confidence in India's frozen shrimp produce, the country's biggest seafood export item, the Centre has kicked off a new scheme to certify hatcheries and farms that adopt good aquaculture practices. India exported frozen shrimp worth almost \$5 billion in 2019-20, with the U.S. and China its the biggest buyers. But a combination of factors had hurt export volumes in recent months, including container shortages and incidents of seafood consignments being rejected because of food safety concerns.

"We have seen some recent consignments sourced from Indian shrimp farms being rejected due to the presence of antibiotic residue and this is a matter of concern for exporters," a Commerce Ministry official said. The Marine Products Exports Development Authority (MPEDA) has developed a certification scheme for aquaculture products called 'Shaphari', a Sanskrit word that means superior quality of fishery products suitable for human consumption.

"We already have a National Residue Control Programme for food safety issues in farm produce and pre-harvest testing system in place, but this certification was proposed as a market-based tool for hatcheries to adopt good aquaculture practices and help produce quality antibiotic-free shrimp products to assure global consumers," the official said. Frozen shrimp is India's largest exported seafood item. It constituted 50.58% in quantity and 73.2% in terms of total U.S. dollar earnings from the sector during 2019-20.

Andhra Pradesh, West Bengal, Odisha, Gujarat and Tamil Nadu are India's major shrimp producing States, and around 95% of the cultured shrimp produce is exported.

“Overall, certified aquaculture products will help exporters to export their consignments to markets under stringent food safety regulations without the fear of getting rejected,” the Ministry official explained.

The Shaphari scheme is based on the United Nations' Food and Agriculture Organization's technical guidelines on aquaculture certification and will have two components — certifying hatcheries for the quality of their seeds and, separately, approving shrimp farms that adopt the requisite good practices.

The certification of hatcheries will help farmers easily identify good quality seed producers. Those who successfully clear multiple audits of their operations shall be granted a certificate for a period of two years. “The entire certification process will be online to minimise human errors and ensure higher credibility and transparency,” the official said, adding that guidelines for certification of farms are under preparation in consultation with stakeholders.

### **India, France agree on Roadmap on Blue Economy and Ocean Governance**

<https://www.devdiscourse.com/article/international/1930048-india-france-agree-on-roadmap-on-blue-economy-and-ocean-governance>

"India and France have agreed on a Roadmap on Blue Economy and Ocean Governance with the aim to contribute to scientific knowledge and ocean conservation and ensure that the ocean remains a global common, based on the rule of law. This agreement came during External Affairs Minister S Jaishankar's three-day visit to France.

The scope of the roadmap will encompass maritime trade, the naval industry, fisheries, marine technology and scientific research, integrated coastal management, marine eco-tourism, inland waterways, and cooperation between competent administrations on civil maritime issues.

The Ministry of External Affairs (MEA) in a statement said that both nations plan to organize an annual bilateral dialogue on the blue economy and ocean governance to exchange views on their priorities, share their best practices and support ongoing and future cooperation. "

"India and France intend to make blue economy a driver of progress of their respective societies while respecting the environment and coastal and marine biodiversity," the MEA said in a joint document. India and France underscored that fisheries are a vital economic sector and play a decisive role in food security and livelihood security, particularly for coastal populations.

They also highlighted that demographic, economic and societal factors have led to an increased global demand for marine products and growing stress on global fish stocks. According to the statement, India and France will make the blue economy a priority in the development of their economic exchanges.

## **India, Pakistan, Bangladesh, Sri Lanka and Maldives: IOTC adopts resolution to rebuild yellowfin tuna stock, but NGOs question its effectiveness**

<https://www.seafoodsource.com/news/environment-sustainability/iotc-adopts-resolution-to-rebuild-yellowfin-tuna-but-effectiveness-in-question>

"The Indian Ocean Tuna Commission (IOTC) agreed to reduce the total allowable catch for yellowfin tuna after months of pressure from non-governmental organizations and some commercial groups. But according to environmental organizations, the effort has fallen short of ending overfishing, as five members of the commission objected to the rebuilding plan. The Blue Marine Foundation (BLUE) and the International Pole and Line Foundation (IPNLF) lauded the commission for the adoption of an updated resolution that lays out a rebuilding plan for the Indian Ocean yellowfin tuna stock.

However, five IOTC contracting parties – Oman, Iran, India, Madagascar, and Indonesia – objected to the adoption of the resolution. "As a result of these objections, a total allowable catch (TAC) has not been agreed for the stock.

When historical catch levels for the objecting contracting parties are factored in, their exemption from the new resolution means this interim measure is not expected to support stock rebuilding," the nonprofits said in a statement following the conclusion of the IOTC meeting. BLUE and IPNLF called out the European Union for failing to take a leading role in calling for fishing restrictions during in the meeting, which they said could have helped reach a consensus on the rebuilding plan.

"While we are encouraged by the adoption of a new plan for yellowfin tuna and by the dedication that kept IOTC members around the table for six extra hours after a long week, we cannot ignore the shortcomings of this new resolution, nor can we ignore the selfishness of distant-water fishing nations such as the E.U. who had the opportunity to take a leading role in solving this problem they helped create, but chose instead to play hardball with coastal states who depend on Indian Ocean fish stocks for their very survival," BLUE Executive Director Charles Clover said.

WWF also said the adoption of the resolution was a step in the right direction, but the five nations objecting to the plan are not bound by the rules and are not obliged to follow them. "WWF is disappointed that many countries are beginning to use the right of objection as a matter of convenience for not agreeing to rules that would allow an end to overfishing of yellowfin tuna," WWF said.

WWF said it is joining BLUE and IPNLF in urging the IOTC to call for a special session in 2022 to update the rebuilding plan. The Pew Charitable Trusts agreed the failure to enforce catch limits means overfishing will continue.

"The Indian Ocean Tuna Commission's inability to agree on a sufficient reduction in yellowfin tuna catch levels isn't new, but it is particularly disappointing that the commission failed again this year, given its market is now at stake. The commission has delayed taking the necessary

steps to rebuild this stock for several years,” Glenn Holmes, officer for The Pew Charitable Trusts’ international fisheries project, said. “Now, with five parties objecting to the new measure and fishing essentially allowed to continue at previous levels, the change on the water is likely to be negligible – just a 1 percent difference in total catch compared to 2019.”

Holmes said the IOTC also did not focus its attention on other important issues before it, such as overfishing that has continued to occur for skipjack tuna. “This catch level, which was determined by an agreed-upon harvest control rule, has been exceeded every year since its inception in 2018, and the failure by commission members to adequately enforce the catch limit suggests overfishing of this limit will continue unabated,” he said. BLUE and IPNLF said the IOTC failed to tackle a proposal to improve the management of drifting fish-aggregating devices (FADs) used by industrial purse-seine fleets in the region.

Many coastal states, including Kenya, Sri Lanka, Maldives, Mozambique, Pakistan, Somalia, South Africa, Indonesia, and Tanzania pushed for the adoption – but the E.U., Japan, and South Korea objected. IPNLF Managing Director Martin Purves praised coastal states for their efforts at the IOTC.

“Although some objections meant watertight outcomes could not be achieved within the updated stock-rebuilding plan, and some distant-water fishing nations did everything in their power to derail efforts to improve the transparency of drifting FAD operations and mitigate the negative environmental impacts of these devices, the resolve of proactive coastal-state delegations was clear for all to see in this,” Purves said.

The International Seafood Sustainability Foundation (ISSF) – a global coalition of seafood companies, fisheries experts, scientific, and environmental organizations, which advocates in favor of science-based initiatives for long-term tuna conservation – said if fully implemented, the adopted measure projects a resultant yellowfin tuna catch level of 401,000 tons, which it said meets the recommendation of the IOTC Scientific Committee.

But that is unlikely given the objections of the five member-states. In response to the inaction from the IOTC, the ISSF now determining whether to enact its yellowfin Tuna rebuilding plan should go into effect, which would require participating companies to reduce their sourcing of Indian Ocean yellowfin tuna. “Further information over the coming weeks will inform the ISSF board’s discussion on the sufficiency of the new measure as likely to be implemented,” it said.

“ISSF remains focused on taking steps forward for the long-term protection of the region’s valuable tuna fisheries and their associated ecosystems. We will be working diligently in the weeks and months ahead with all stakeholders towards this goal.” ISSF did back an IOTC agreement to create a working group on electronic monitoring, which it said was an important step in the management of in Indian Ocean fisheries.

### **India: NFF opposes Sagarmala Project across the country**

<https://www.heraldgoa.in/Goa/NFF-opposes-Sagarmala-Project-across-the-country/171617>

"The National Fishworkers Forum on Saturday resolved to oppose the Sagarmala Project across the country and the proposal of setting up fish farms along the coastline beginning with Goa. Olencio Simoes was elected as the general secretary of the Forum following the two-day annual convention held in Margao. Incidentally, the Forum was started by Olencio's uncle late Matanhy Saldanha, 40 years ago in Goa.

Briefing the media persons, NFF Chairperson Narendra Patil said that the government is coming up with new laws without consulting the Forum. He pointed out that some of the laws are totally against the Forum's interest and vowed to continue fighting such laws.

He said, "The government is asking the fishing community to install new equipment ostensibly for the safety of the fishing community. But the equipment recommended is very expensive and beyond the purchasing capacity of the ordinary fisher men."

"The Automatic Identity System and DASH recommended by the Coast Guard is too expensive for most of the fishermen and hence the government should come up with some relief for the fishing community," he said.

He also demanded that the fishermen should be exempted from paying the Excise Duty on diesel purchased for their vessels and pointed out that earlier when Atal Behari Vajpayee was the prime minister fishing community was charged only Rs 1.5 as Excise Duty on diesel while now it is nearly Rs 35 per litre.

Narendra also pointed out that the survey of the oil exploration being carried out in the sea is hampering the fishing activity of the fishermen as they have to maintain a distance of 8 kms radius from where the survey is being conducted. Olencio said, "The Forum has decided to oppose the Sagarmala Project across the country.

The Forum will launch their movement shortly as this project is aimed at annihilating the traditional fishermen and replace them with fish farmers who will be big industrial houses." He said that the Forum is also opposed to the proposal of breeding fish in cages along 200 kms of the Goan coast line.

While pointing out that nobody has demanded such farming, Olencio asked the government to instead implement the ban on LED lights being used for fishing. "Even though LED lights are banned since 2017 one can still see them out in the sea and the Fisheries Department is doing nothing about it," he said and also questioned the Union Minister's claim of investing Rs 400 crore on Goan marine culture.

Olencio said, "The fishing community is totally opposed to the three linear projects in Goa as they are aimed against them." Further, he demanded that the public hearing on Coastal Zone Management Plan should be postponed as one day hearing is not sufficient.

"The fishing community and some villages have already submitted the Coastal Zone Management Plans and the government will try to adopt these plans instead of going on with the farce of a public hearing to prepare fresh plans," he said.

## **India: \$3.1 billion frozen food market expected to continue growth trajectory in forecast period to 2026**

<http://www.fnbnews.com/Top-News/india-31-billion-frozen-food-market-expected-to-continue-growth-trajectory-in-forecast-period-to-2026-64072>

"The 'India Frozen Food Market by Segments, End Users, Regions, Company Analysis, Forecast', has been reported by ResearchAndMarkets.com's offering. India Frozen Food Market is expected to continue its growth trajectory in the forecast period, and its market will be \$ 3.1 billion by 2026, from \$ 1.1 billion in 2020. Years ago, India was known for only French fries and basic frozen vegetables. But in the span of 5 to 10 years frozen food industry in India has completely revolutionised.

With the evolution of Modern retail outlets like Food Bazaar, DMart, Spencers, and online grocery stores like Big Basket, Groffers frozen food industry in India is witnessing a positive growth. Frozen food consists of frozen fruits, vegetables, fish and marine produce, meat, ready meals, bakery products, soups, and appetisers that provide domestic consumption and export opportunities.

India's frozen food industry is at a nascent stage and expected to surge rapidly. Also, freezing expands the shelf life of foods like fish, seafood, vegetables, and fruits while keeping their nutrition intact and wholesomeness alive.

That provides an opportunity to stabilise the price in the market. The surging number of Farmer Producer Organisations, solar-based refrigeration technologies, freezing and chilling facilities would boost the values of the farmers in India. Besides, for more than two decades, government agencies like the Ministry of food and Processing (MOFPI) have taken several steps to boost cold chain manufacturing and infrastructure facilities and continue to do so, like incentives and numerous schemes for the growth of this market.

India Frozen Food Growth Trends will be in double-digit CAGR due to all these factors. It is expected to grow with a CAGR of 18.85% from 2020-2026. Factors Driving the Frozen Food Industry in India Due to changing lifestyle, there is considerable growth in customer penchant towards convenience foods, which indirectly favours frozen products' rising demand, since it requires much less time and effort than regular cooking.

India has witnessed a significant surge in the number of employed women in recent years. With the growth in the number of working women, it becomes considerably tricky for them to cook meals, which results in consuming frozen ready meals. With the introduction of organised retail stores, there has been growth in the freezers and cold storage section.

## **India: 25 years exemption from subsidy cuts sought for developing nations not into distant water fishing**

<https://www.thehindubusinessline.com/news/world/25-years-exemption-from-subsidy-cuts-sought-for-developing-nations-not-into-distant-water-fishing/article36680392.ece>

"In a new proposal submitted to the WTO, India has proposed that developing countries not engaged in distant water fishing should be exempt from overfishing subsidy prohibitions for 25 years. It has said that only those who have overexploited the environment should pay for rectifying the situation, a Geneva-based official has said.

India's submission, made at the WTO Negotiating Group on Rules earlier this week, also said that exemption from subsidy cuts for artisanal and low-income fishers should be retained, as suggested in the draft text on ending harmful fisheries subsidies circulated by the chair, but it should be without a limit on time and geography. The proposal is in line with the 'polluter pays' approach that New Delhi has been supporting.

"Many WTO member countries, including prominent developed countries, noted that India's proposal had no element that could help bring about a compromise between members. A suggestion in the submission that stressed on members reducing their fishing capacities rather than subsidies was also questioned," according to the official.

WTO members are trying to arrive at an agreement on eliminating harmful fisheries subsidies leading to overcapacity and overfishing, estimated at \$14-20.5 billion annually, by November 2021 in time for the 12th WTO Ministerial Conference (MC12). The idea is to formalise the pact at the MC12 to be held from November 30-December 3.

#### Sharp divide

However, a sharp divide has emerged between rich and poorer nations over the special and differential treatment to be accorded to developing countries in terms of exempting them from commitments to eliminate fisheries subsidies.

A joint proposal made by the African, Caribbean and Pacific Group of States (ACP) and the African Group at the same meeting proposed that exceptions to fishing subsidies within a developing country's own exclusive economic zone (EEZ) should not be subjected to a five-year time limit as suggested in the chair's text.

They also suggested a de minimis (ceiling) level as per which developing countries whose share of global fishing falls below a minimum level will be exempted from subsidy cuts, both with regard to overfishing and distant water fishing. The exact figure, however, is to be negotiated. India accounts for about 4 per cent of the global fishing at 3.8 million tonnes of annual catch, according to industry estimates.

China, on the other hand, is at the top accounting for 12 per cent of global fishing. New Delhi's submission was also criticised by some members for backtracking on the hybrid approach suggested in the chair's text which presumes that certain types of subsidies contribute to overfishing such as subsidies for fishing boats, fuel or other fishing gear. India has instead

proposed that overfishing would be self-determined by a member or by Regional Fishery Management Organisation in their jurisdictions.

### **India: 33.6% of Indian coast under varying rate of erosion, says govt**

[https://www.business-standard.com/article/current-affairs/33-6-of-indian-coast-under-varying-rate-of-erosion-says-govt-122020201489\\_1.html](https://www.business-standard.com/article/current-affairs/33-6-of-indian-coast-under-varying-rate-of-erosion-says-govt-122020201489_1.html)

"More than one-third of India's coast is eroding at varying rate of changes according to a study of satellite data over 28 years, the government told Lok Sabha on Wednesday. ""The study of 28 years satellite data by National Centre for Coastal Research (1990-2018) indicates that 33.6 per cent of Indian coast is eroding with varying rate of changes,"" Earth Sciences Minister Jitendra Singh said in a written reply.

He said Indian National Centre for Ocean Information Services (INCOIS) has published an atlas of Coastal Vulnerability Index maps the entire coastline of India at 1:100000 scale using data on sea level rise, coastal slope, shoreline change rate, coastal elevation, coastal geomorphology, tidal range, and significant wave height.

According to the studies conducted, as many as 124 km of coastal stretch recorded under very high coastal vulnerability which was 5.36 per cent of the total coastline of the state, Singh said. In Tamil Nadu, 65 km of coastline, which is 6.38 per cent of the total coastline of the state ranks very high on CVI, followed by West Bengal (49 km, 2.56 per cent), Karnataka & Goa (48 km, 9.54 per cent), Odisha (37 km, 7.51 per cent), Andaman Islands (24 km, 0.96 per cent), Kerala (15 km, 2.39 per cent), Nicobar Islands (8 km, 0.97 per cent) and Andhra Pradesh (6 km, 0.55 per cent). Singh said the ministry and its institutes is also providing technical solutions and advice to the state governments and union territories to deal with coastal erosion threats.

### **India: 5 fishing harbours to be modernized**

<https://www.thehindu.com/business/budget/5-fishing-harbours-to-be-modernised/article33721473.ece#:~:text=%E2%80%9CTo%20start%20with%2C%20five%20major,and%20waterways%2C%E2%80%9D%20she%20added.>

"Five major fishing harbours will see substantial investments for modernisation and development, according to Finance Minister Nirmala Sitharaman's budget speech on Monday. "To start with, five major fishing harbours — Kochi, Chennai, Visakhapatnam, Paradip and Petuaghat — will be developed as hubs of economic activity," she said. "We will also develop inland fishing harbours and fish-landing centres along the banks of rivers and waterways," she added.

Emerging sector

Ms. Sitharaman announced measures to promote seaweed cultivation. "Seaweed farming is an emerging sector with potential to transform the lives of coastal communities. It will provide large scale employment and additional incomes," she said. "To promote seaweed cultivation, I propose

a Multipurpose Seaweed Park to be established in Tamil Nadu," she added. Overall, the Fisheries department saw an increase in budget allocations from Rs.825 crore in 2020-21 to Rs.1,220 crore in 2021-22. The Blue Revolution centrally sponsored schemes saw their budget allocation double, with the new Pradhan Mantri Matsya Samada Yojana alone getting a Rs.1,000 crore allocation.

### **India: 622 Indian fishermen lodged in foreign jails: Government in Rajya Sabha**

<https://economictimes.indiatimes.com/news/india/622-indian-fishermen-lodged-in-foreign-jails-government-in-rajya-sabha/articleshow/88192669.cms>

"A total of 622 Indian fishermen are lodged in foreign jails, including 574 in Pakistan, the government informed Rajya Sabha on Thursday. In a written reply to a question in the Upper House, Minister of State for External Affairs V Muraleedharan said the length of time Indian fishermen spend as undertrials in foreign jails and their terms of imprisonment differ from country to country and depend on several factors, including local laws and charges imposed on them by the local courts.

The minister said the total number of Indian fishermen lodged in foreign jails is 622 -- 574 in Pakistan, 26 in Bangladesh, four in Bahrain and 18 in Saudi Arabia. He said the government attaches high priority to the safety, security and welfare of the fishermen. To another question on the Vande Bharat Mission, Muraleedharan said 1,89,71,258 people had travelled under the mission till October 30, 2021. "

"The operations under the Vande Bharat Mission were both commercial and non-commercial operations. The government through Indian Missions and Posts abroad assisted the distressed and stranded Indians from the Indian Community Welfare Fund (ICWF)," he said. The total expenditure incurred for assisting more than 1,66,000 Indian nationals abroad, including for repatriation and evacuation, was Rs 40.82 crore, he added.

In a written reply to another question, Muraleedharan said according to the information available, 6,08,162 Indian citizens have relinquished their citizenship and acquired foreign citizenship since 2017. He said the individuals relinquished Indian citizenship for personal reasons.

### **India: 8 states highly vulnerable to climate change: Report**

<https://www.hindustantimes.com/india-news/8-indian-states-highly-vulnerable-to-climate-change-report-101618678564084.html>

"Eight Indian states -- Jharkhand, Mizoram, Odisha, Chhattisgarh, Assam, Bihar, Arunachal Pradesh and West Bengal -- are highly vulnerable to climate change, according to a national climate vulnerability assessment report. These states, mostly in the eastern part of the country, require prioritisation of adaptation interventions, the report pointed out. Among all states, Assam, Bihar and Jharkhand have over 60 per cent districts in the category of highly vulnerable districts.

Lack of forest area per 100 rural population was found to be one of the major drivers of vulnerability for Assam despite the fact that the state has a forest cover of 42 per cent, followed by low road density, the report said. In case of Bihar, the report cited poor health infrastructure to be the key vulnerability driver in 36 districts, followed by a high percentage of marginal and small operational holders in 24 districts.

The lack of implementation of the rural employment scheme MGNREGA, causing a lack of alternative livelihood opportunities, appeared as a key driver in 14 districts of Bihar, followed by a lack of women's participation in the workforce in 11 districts. Lack of crop insurance and rainfed agriculture were key drivers of vulnerability for Jharkhand.

The report, titled 'Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework', which identifies the most vulnerable states and districts in India with respect to current climate risk and key drivers of vulnerability, was released by Department of Science and Technology (DST) Secretary Ashutosh Sharma. Himachal Pradesh, Telangana, Sikkim and Punjab have been categorised as lower-middle vulnerable states. Uttarakhand, Haryana, Tamil Nadu, Kerala, Nagaland, Goa and Maharashtra have been categorised as states with low vulnerability.

“We have seen how extreme events are on rise both in terms of their number and severity. Mapping the parts of India that are vulnerable to such changes will help initiating climate actions at the ground level. “The report should be made easily accessible to all stakeholders so that it can benefit climate-vulnerable communities across India through development of better-designed climate change adaptation projects,” said Sharma. He also suggested that the maps should be made available to people who need it. “Assessing vulnerability was the first step towards assessing climate risk.

There are two other components like hazard and exposure that need to be also assessed to arrive at overall climate risk. “DST would take up these assessments in the next phase along with sectoral vulnerability assessments and assessments at sub-district levels,” said Akhilesh Gupta, Head, Climate Change Programme (CCP), DST. Prof N H Ravindranath, retired climate change expert from the Indian Institute of Science (IISc), explained that the report has helped identify the most vulnerable states, districts and panchayats and will aid in prioritising adaptation investment, developing and implementing adaptation programmes.

Director of IIT Mandi Professor Ajit Kumar Chaturvedi and Director of IIT Guwahati T G Sitharaman hoped that the report will be taken up by the states for initiating climate action. A total of 94 representatives from 24 states and two Union Territories participated in the nationwide exercise jointly supported by the DST and the Swiss Agency for Development & Cooperation (SDC).

Corinne Demenge, Head, Swiss Cooperation Office, Embassy of Switzerland in India, hoped that the assessments will contribute to the development of more targeted climate change projects and that they will support the implementation and the potential revisions of the State Action Plans on Climate Change. “The assessments can further be used for India's reporting on the Nationally

Determined Contributions under the Paris Agreement. And finally, these assessments will support India's National Action Plan on Climate Change," she added.

The assessment will help policy-makers in initiating appropriate climate actions. It will also benefit climate-vulnerable communities across India through development of better-designed climate change adaptation projects. In a developing country such as India, vulnerability assessment is considered as an important exercise to develop suitable adaptation projects and programmes.

### **India: A country can provide fishery subsidies if it maintains stocks at sustainable level: India's WTO proposal**

<https://www.thehindubusinessline.com/economy/a-country-can-provide-fishery-subsidies-if-it-maintains-stocks-at-sustainable-level-indias-proposal-in-wto/article37147641.ece>

"A member country of the World Trade Organisation (WTO) can provide subsidies to its fishermen if it maintains stocks at a biologically sustainable level, according to a proposal submitted by India last month. India has also proposed that a country engaged in distant water fishing (fishing beyond 200 nautical miles from its sea shores) cannot provide fishery subsidies for 25 years from the date of entry into force of the fisheries subsidies agreement, an official said. Fishing in distant waters or in some other country's territory is a major problem when it comes to maintaining fish stocks at sustainable levels.

Such activities lead to depletion of fish stocks in the oceans and this happens because of use of highly mechanised vessels or boats for industrial fishing. This agreement is under discussion among the 164 WTO members in Geneva. The aim of these negotiations is to discipline subsidies with the overall objective to have sustainable fishing and to eliminate IUU (illegal, unreported and unregulated) fishing subsidies and prohibit subsidies contributing to overcapacity and overfishing.

There are primarily three areas of fishing -- territorial waters (12 nautical miles from the sea shore), EEZ (exclusive economic zones - 200 nautical miles), and high seas. There are certain developed countries which go into high seas for exploiting the fishing stock. The current proposal submitted by India assumes significance as it has stated that the draft text which is at present under negotiations is unbalanced. ""The present text is unbalanced and only when Indian suggestions (from its proposal) are considered and incorporated suitably, then only it will be a balanced text for negotiations.

The present text cannot form the basis of negotiations because it is not balanced. Only when these suggestions are discussed, deliberated and in some manner incorporated in the revised text, then India can start the text-based negotiations,"" the official said. In the WTO, member countries negotiate through a text to finalise an agreement.

The official added that the current draft text, which is under negotiations, does not provide a conducive policy space for developing and least developed countries (LDCs) that are yet to develop their fishing capacities. ""Therefore, the principle of polluter pays and common but

differentiated responsibilities and respective capabilities concept must be applied in line with the popular demand of developing countries made at a meeting on July 15 this year," the official said.

The suggestion of India for a moratorium of 25 years on countries that are engaged in distant water fishing is based on FAO's (Food and Agriculture Organization) code of conduct for responsible fisheries, which was adopted in 1995. It has recognised the issues of overfishing and depletion of fish stocks. Further, India has also proposed that member countries engaged in distant water fishing after this agreement comes into effect should have to reduce such activities by certain specified percent every year till overcapacity or overfishing persists.

These proposals, the official said, are path breaking and will go a long way in meeting the desired objective of sustainability of marine resources globally. The proposal has also clarified that the 25 year prohibition on subsidies will not apply on LDCs; developing country that provide support to low income and resource-poor fishing community who indulge in fishing activities within their territorial waters and EEZs; and developing nations that are not engaged in distant water fishing as on date.

Also, the proposed restrictions would not apply to any developing country whose share of annual marine capture fish production is less than one per cent of the global annual marine capture fish production. India's proposal has also stated that countries engaged in fishing in the high seas will have to declare certain details within 90 days after the agreement comes into force. These details include fishing vessels engaged in distant waters, and names and details of those high seas.

### **India: A third of India's coastline under erosion**

<https://www.downtoearth.org.in/news/agriculture/as-told-to-parliament-august-10-2021-a-third-of-india-s-coastline-under-erosion-78395>

"About 32 per cent of the Indian coastline is under varying degrees of erosion (low, moderate or high), 27 per cent is of accreting nature and the remaining 41 per cent is in a stable state, Parshottam Rupala, Union minister of fisheries, animal husbandry and dairying said in the Lok Sabha. The National Centre for Coastal Research has carried out a national shoreline change assessment mapping for the Indian coast, using 28 years of satellite data from 1990-2018.

The study was done along nine coastal states and two Union territories (UT) to provide information for coastal management strategy. Around 41 per cent of the coastline of Kerala is experiencing erosion, 31 per cent is stable and 21 per cent is accreting, as per the National Centre of Coastal Research studies.

Further, the National Centre for Sustainable Coastal Management under the Union Ministry of Environment, Forests and Climate Change and the Central Water Commission under the Ministry of Jal Shakti (water resources ministry) also undertake studies on shoreline changes / coastal erosion and its impact, Rupala said.

Cyclones claimed 720 lives

A total of 720 persons have lost their lives due to cyclones from 2016-17 to 2021-22, said Nityanand Rai, Union minister of state for home affairs in the Lok Sabha August 10, 2021. Cyclones have also damaged 297,000 houses / huts and 588,400 hectares of crop in the same period, the minister added.

#### Polluting chemical factories of Telangana

About 317,091 tonnes of hazardous waste has been generated against the authorised capacity of 821,229 tonnes during 2019-20, Mansukh Mandaviya, Union minister for chemicals and fertilisers said in Lok Sabha. He was quoting data from the Telangana State Pollution Control Board. There are 651 chemical and pharma industries located in the state of Telangana, Mandaviya said. Chemical, research and development as well as pharmaceutical industries generate hazardous waste such as process sludge, inorganic salts, organic residue, effluent treatment plant sludge and salts from treatment systems like zero liquid discharge and agitated thin film dryer, Mandaviya added.

#### Workforce reduction in agriculture

The share of workforce of men and women in agriculture has declined in both the rural and urban areas during the period from 1987-88 to 2019-20, Narendra Singh Tomar, the Union minister of agriculture and farmers welfare said in Lok Sabha. The minister was quoting from the report on 'Women and Men in India, 2020' of the Union Ministry of Statistics and Programme Implementation. The country has witnessed a relatively faster rate of growth in sectors other than agriculture, on account of structural changes due to a shift from a traditional agrarian economy to an industry- and service-dominated one, Tomar added.

#### 30,000+ hiring centres for crop management

A central sector scheme on 'Promotion of Agricultural Mechanisation for In-Situ Management of Crop Residue in the states of Punjab, Haryana, Uttar Pradesh and NCT of Delhi' is being implemented in the states since 2018-19, Tomar added. Under this scheme, financial assistance of 50 per cent the cost of machinery is provided to the farmers for purchase of crop residue management machinery.

Financial assistance of 80 per cent of the project cost is also provided to the cooperative societies of farmers, farmers producers organisations, registered farmers societies and panchayats for establishment of custom hiring centres (CHC) of crop residue management machinery. From 2018-19 to 2020-21, more than 30,900 CHCs have been established and more than 158,000 crop residue management machines have been supplied to them and individual farmers of these four states, Tomar said.

#### Actual number of COVID-19 deaths

As many as 168 central teams deployed in 33 states / UTs have highlighted the need for correct recording of deaths and undertaking periodic death audits, Bharati Pravin Pawar, Union minister

of state for health and family welfare said in Rajya Sabha. The ministry has followed a transparent policy of publishing COVID-19 cases and deaths since the inception of the pandemic in India, she added

#### Status of COVID-19 vaccination

A total of 506.8 million doses of COVID-19 vaccines have been administered from March 1, 2021 to August 8, 2021. As many as 394.3 million people received the first dose and 112.4 million received the second, Pawar said in Rajya Sabha.

The Centre is procuring 75 per cent of the vaccines being produced by the manufacturers in the country, under the 'Revised Guidelines for Implementation of National COVID-19 Vaccination Programme' effective from June 21, 2021.

These are being provided free of cost to states / UTs on pro-rata basis, the progress of vaccination and vaccine wastage, the minister added. The domestic vaccine manufacturers have the option to provide up to 25 per cent of their monthly vaccine production directly to private hospitals, she said.

#### Low ratio of doctors per 1,000 people

There are 1.26 million allopathic doctors registered with the state medical councils and the National Medical Commission (NMC). Considering their 80 per cent availability (1.01 million) allopathic doctors and another 565,000 AYUSH doctors, the doctor-population ratio comes to 1:854 in the country, said Bharati Pravin Pawar, Union minister of state for health and family welfare said in Rajya Sabha.

#### Deaths due to inadequate supply of oxygen in the Andhra Pradesh

On May 10, 2021, some patients on ventilator support at Sri Venkateswara Ramnarayan Ruia hospital in Andhra Pradesh died while undergoing treatment for COVID-19, Pawar said in the Rajya Sabha based on state communication received on August 9.

It appears that the interval between the levelling out of the 10 kilolitres oxygen tank and the switching on of the backup manifold system of the hospital resulted in the drop in pressure in the oxygen lines, according to the preliminary inquiry report. The drop in the pressure in the oxygen lines led to insufficient oxygen being available for the patients mainly on ventilator support, the minister mentioned.

**India: Access to safe water is one of the prerequisites for maintaining sound health and environment in a community and is also a responsibility of administrative stakeholders**

<https://www.downtoearth.org.in/blog/water/antimicrobial-awareness-week-2021-why-water-is-important-in-the-amr-debate-80361>

"Antibiotics are one of the most common medicines for humans and animals. A large amount of antibiotics get released into wastewater due to excretion from humans and animals and the disposal of unused compounds from domestic as well as healthcare systems like hospitals. Another large source is the pharmaceutical industries, which contribute to the spread of antibiotics in the environment through their effluents.

A large proportion of antibiotics are also used in animals for purposes other than treatment of disease such as growth promoters, which also end up in aquatic systems through surface flow from animal and fish / prawn / shrimp farms (aquaculture). Any exposure to antimicrobials by microbes starts the process of development of antimicrobial resistance in microbes, that influences quick recovery from infectious diseases of humans and animals.

Globally, two million tonnes of sewage, industrial and agricultural waste is discharged into the world's waterways. It is estimated that more than 80 per cent of Asia's wastewater is discharged untreated, polluting both groundwater and surface water sources, where they pollute the usable water supply.

Antibiotic residues and resistant bacteria have been detected in various aquatic compartments of environments such as rivers, ponds, lakes in India, as well as globally. For example, samples from the Ganga at Haridwar and Rishikesh have shown the presence of antibiotics like fluoroquinolones, sulphonamides, erythromycin and tetracycline in amounts of over 100 nanogram per litre (ng/litre).

Groundwater at Patna was found to contain Sulpha up to 360 ng/litre. Samples of bacteria from the Yamuna have shown a high level of resistance against tetracycline and polymyxin B. Bacteria from samples of drinking water from Lucknow have been found resistant to antibiotics. Water samples from the Kshipra river at Ujjain have exhibited the presence of antibiotics and a high degree of resistance in the bacteria therein. Hospital wastewater in Ujjain was found to contain antibiotics upto 600 microgram per litre (mg / litre). Effluents from drug manufactures near Pantacheru near Hyderabad have been found to contain antibiotics upto 31 mg / litre.

Other countries are no exception and surface water or ground water from China, the United States, Serbia, Italy, Bangladesh and Malayasia have also been found to contain antibiotics. Bacterial samples from wastewater irrigated soil have a significantly higher antimicrobial resistance profile when compared to those irrigated with unpolluted groundwater.

Fish and other species, breeding in water that contain antimicrobials and resistant bacteria, are harvested for food purposes, thus facilitating the entry of resistant bacteria and antimicrobials in the food chain. Antimicrobials have been detected in wild fish in many countries including in fishes from rivers in China and India, seawater from Poland, etc and they are known to affect the endocrine system.

For example, sulphonamides influence thyroid endocrine disruption and alteration of concentration of T4 and Plasma E2; Tetracyclines influence the steroidogenesis pathway, Thyroid endocrine disruption, T3 concentrations, T3/T4 ratio, Whole body TSH and alteration of gene expression level in HPT. Erythromycin influences energy metabolism, gene-related

oxidative phosphorylation, lipid metabolism and neuroendocrine disruption. The trophic transfer through the food chain can very easily result in them influencing human and animal systems. India is an important player in global aquaculture production and its aquaculture industry is an important contributor to India's food security.

To ensure sufficient production in the aquaculture set up, large quantities of antibiotics are used in fish / prawn / shrimp cultivation. This is potentially dangerous for human health and there is a lot of concern about this all over the world, as this may result in water and sediment contamination and the development of antibiotic resistance genes.

In integrated poultry-fish farming, the use of antibiotics in poultry feed can cause the prevalence of antibiotic-resistant bacteria in pond environments and its consequent spread can be a matter of great concern. Access to safe water is one of the prerequisites for maintaining sound health and environment in a community and is also a responsibility of administrative stakeholders. FAO has developed a Code of Conduct for aquaculture and fisheries.

The guidelines inform that antibiotics need to be preferably used under veterinary supervision and preventive use of antibiotics in aquaculture must be avoided as far as possible. It has been stated that states should regulate the use of chemicals in aquaculture that are hazardous to human and animal health and the environment and that marketing and the use of drugs that have not been certified for aquatic use should be strictly regulated. It is also important to advise consumers on the proper storage and disposal of unwanted antimicrobials.

Consumers can then serve as environmental stewards to reduce water pollution. It will be a good initiative to standardise and implement antimicrobial take-back programmes. It is also essential to formulate rules and regulations regarding waste water treatment for antibiotics removal to avoid entry of antibiotics into the environment.

Relevant governmental administrative units, scientific communities, civil societies, non-profits, etc need to work in tandem to advise all relevant stakeholders such as concerned ministries, pharmaceutical industry, aquaculture industry, municipalities, consumers, etc. on the proper use, storage and disposal of antimicrobials.

The joint initiative can then serve as environmental stewards to reduce pollution of aquatic environment by antimicrobials and consequently also of resistant pathogens and thus help reduction in antimicrobial resistance.

### **India: Accused of derailing efforts to protect yellowfin tuna stocks in Indian Ocean**

<https://timesofindia.indiatimes.com/world/uk/india-accused-of-derailing-efforts-to-protect-yellowfin-tuna-stocks-in-indian-ocean/articleshow/85747944.cms>

"India has been accused of derailing efforts to protect Indian Ocean yellowfish tuna stocks after it joined Oman and Indonesia in formally objecting to a conservation measure, agreed at June's Indian Ocean Tuna Commission (IOTC) meeting, aimed at reducing the total allowable catch in order to protect the long-term health of the marine stock. The Global Tuna Alliance, made up of

retailers and tuna suppliers, said, “At the IOTC meeting in June, scientific advice called for a catch below 403,000mt to rebuild the stock. The IOTC reached an agreement to limit catch in 2022 to 401,011 mt.

Three member states have now objected to the plan, forcing the sustainability of Indian Ocean yellowfin tuna back into the danger zone, and compromising the efforts made by the majority of nations willing to follow scientific advice.” Since objecting member states will not have to implement the measure and instead be bound by previous catch limits, the Alliance calculates they could increase the total 2022 catch by 48,140mt, if their 2022 catches equal their 2019 catches — far exceeding the scientific advice.

In its letter of objection, India said, “Fisheries is a major source of employment and food security for four million Indian marine fisher populations, who undertake fishing by multi-gear and multi-species non-selective fisheries, mostly confined in near-shore coastal areas. Most of these small boats do not target tuna but tuna is recorded as bycatch.” The letter, written by I A Siddiqui of the department of fisheries, said it was difficult to implement catch reductions for a non-targeted species in such small-scale fisheries.

“India is of the opinion that large-scale industrial fishing fleets of developed and distant water fishing nations that are engaged in targeted fishing of yellowfin tuna are mainly responsible for the present status of stock of yellowfin tuna in the Indian Ocean, and such fleets shall bear the major responsibility by reducing their catch.

Putting the burden of responsibility on small-scale fishers and impacting the livelihood of millions of resource-poor fishers may not be a wise decision,” it said. The Global Tuna Alliance, however, said that it is just for this reason that the scientific advice for this iconic species must be adhered to.

“Local populations in nations like India will be hardest hit when their source of income and food is depleted by ongoing overfishing. It is about taking measures now, to protect livelihoods in the long term,” it said.

### **India: Adoption of modern digital technologies can boost fisheries sector**

<https://mybigplunge.com/tech-plunge/technology/adoption-modern-digital-technologies-can-boost-fisheries-sector/>

"New digital technologies, including IoT, robotics, Big Data and sensors, can help the fisheries sector reach new heights in today’s digital world. The same has been acknowledged by the Centre for Strategy and Leadership (CSL) in its whitepaper – IoT in the fisheries sector in India. It highlights the importance of new technologies for India to realize optimal green growth in the fisheries sector, and how technologies like IoT optimize management of scarce resources and increase productivity of Indian fisheries industry as a whole.

The white paper pointed out that the fisheries sector provides livelihood to approximately 160 lakh people at the primary level and almost double that number along its entire value chain. India

is the second largest fish producer in the world, contributing 5.43% to world fish production, while fisheries is one of the most committed agricultural and cooperative sectors in the country.” Vikas Sharma, Director and Chief Executive, Centre for Strategy and Leadership, said India, which has 65% of its population under the age of 35 years, makes it the world’s most enviable workforce pool.

“As per studies, the IoT sector will boom to grow to a more than \$20 billion market by 2022. We believe India’s fisheries sector currently in the middle of a transformation would derive great benefits by the adoption of modern technologies such as IoT when compared to other areas. Sharma said bring IoT to the centre of the sector’s growth model should be prioritized.

“This will also show the way to create an inclusive strategy of public and private partnerships with an eye on creating millions of job opportunities in the fisheries and IoT-led sectors along with auxiliary industries.” Parthsarathi Trivedi, co-founder and CEO of Skylo, said digitalization and connectivity are key to achieving the PM’s goal of doubling fisheries production under the Blue Revolution.

“Technology will transform the fishery sector in three main ways – safety, productivity and sustainability. At the heart of this transformation is access to data and cloud-based analytics for unconnected fishing vessels and aquafarms, there is immediate need to prioritize the adoption of modern digital technologies in the sector,” he said.

The paper stated that the future of fisheries management depends on technological innovation. It said improvements in digital technologies now allow innovative monitoring tools to manage fish stocks better at every phase of the value chain. However, technology adoption in such situations is still limited primarily due to high cost. As such, it presents challenges for fishery management authorities to adopt the best in data-sharing and communications systems.

### **India: All you need to know about the programme aimed to aid fishermen in coastal areas, Sagar Parikrama**

<https://www.news9live.com/knowledge/sagar-parikrama-all-you-need-to-know-about-the-programme-aimed-to-aid-fishermen-in-coastal-areas-162011>

"The Ministry for Fisheries, Animal Husbandry, and Dairying has organised a Sagar Parikrama programme as part of the 75th Azadi Ka Amrit Mahotsava to assess the challenges encountered by fishermen in coastal areas. The Sagar Parikrama programme is proposed to be celebrated in all coastal states/UTs along a pre-determined sea route that runs from Gujarat, Diu, Maharashtra, Goa, Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Odisha, West Bengal to the Andaman and Nicobar Islands.

The Sagar Parikrama programme focuses on achieving a sustainable balance between the exploitation of marine fisheries resources for national food security and the livelihoods of coastal fisher communities. The programme aims to safeguard marine ecosystems as well.

The Sagar Parikrama journey began earlier this month, on March 5, in Kutch, Gujarat. The two-

day event was organised by the National Fisheries Development Board in collaboration with the Gujarat Department of Fisheries, the Indian Coast Guard, the Fishery Survey of India, the Gujarat Maritime Board, and fisherman representatives.

The state of Gujarat had its own significance with the Bardoli Satyagraha. It was a pivotal moment in the Indian Independence Movement's civil disobedience and uprising. Sardar Vallabhbhai Patel eventually headed the movement, and its success led to Patel being one of the most important leaders of the independence movement, particularly when it came to settling farmer difficulties.

### Sagar Parikrama

The Government of India aims to use the project to communicate with fishermen, fisher communities, and stakeholders in coastal areas and districts in order to better understand the challenges and issues that they confront. This event will demonstrate the government's commitment to producing fisheries management plans and reforming the fishing industry.

The Government is also trying to implement necessary legal frameworks to enable effective fisheries governance through the programme. The government intends to use the program to look for methods to increase the livelihood of fishermen.

During the Sagar Parikrama programme, progressive fishermen, particularly coastal fishermen, fishers and fish farmers, young fishery entrepreneurs, are being awarded certificates/sanctions connected to the Pradhan Mantri Matsya Sampadha plan, KCC, and State Scheme.

Information on the PMMSY scheme, other state schemes, FIDF, KCC, and other similar programmes are also being provided during the event. The programme will be celebrated in Gujarat's other districts as well as other states and territories."

### **India: Analysing core indicators of decent work for the Indian fisheries sector: Do richer states perform better?**

<https://www.epw.in/journal/2021/41/special-articles/analysing-core-indicators-decent-work-indian.html>

"The International Labour Organization included the concept of decent work in the Sustainable Development Goals to address concerns about workplace conditions, especially in developing countries. Among the different sectors of any developing economy, agriculture and allied activities have lagged the most in terms of decent work. This paper examines decent work in the fisheries sector in India.

Using the National Sample Survey Office data from the Employment and Unemployment Survey of India, the paper arrives at a multidimensional decent work index. The paper finds that labourers belonging to the richer states rank lower in terms of decent work compared to the relatively poorer states, indicating higher inequality in the former regions. It also finds that per capita incomes are well below the poverty line for more than 40% of workers in fisheries.

The fisheries sector is a major source of income and employment, especially for people living in coastal areas in India (MOSPI 2011). However, this sector was badly affected by the pandemic and the resulting lockdowns in 2020, which caused a substantial loss of fishing days and, subsequently, a livelihood crisis among fishery workers. The aquaculture sector, which employs migrant labour, also faced severe distress during the pandemic.

Fish constitutes a major dietary supplement in several cuisines and is an important source of protein (Giuliani et al 2004). Due to the rapid expansion of global populations, the demand for primary sources of food from agriculture and fishing is increasing rapidly. This has led to increased fishing efforts<sup>1</sup> (Anticamara et al 2011) that have further led to overfishing (Mansfield 2011). Overfishing has resulted in depleted supply close to the shoreline (Stobutzki et al 2006), and the same effort now yields lesser output than before (Costello 2017).

This has led to increased fishing in deeper waters using large trawlers and other expensive equipment, which subsistence farmers with artisanal boats are often unable to afford. Owing to their inability to meet the requisite high capital investments of the industrialised fishing model, subsistence fishers are compelled to abandon their traditional production methods and seek employment on mechanised trawlers (Rajeev and Bhandarkar 2019).

After their shift to capitalistic employment from artisanal production, they only derive a share of the output (value added), which is often small, and have reduced bargaining power. Competition among fishing units also leads to cost-cutting, which result in more hazardous and less satisfactory working conditions for fishers, in addition to potentially lower remuneration (Rajeev and Bhandarkar 2019). Full article is available at: <https://www.epw.in/journal/2021/41/special-articles/analysing-core-indicators-decent-work-indian.html>

### **India: Anti-dumping duty on Indian shrimps by the US: It's an ongoing process, says exporters**

<https://www.thehindubusinessline.com/economy/agri-business/anti-dumping-duty-on-indian-shrimps-by-the-us-its-an-ongoing-process-says-exporters/article37747197.ece>

"The imposition of anti-dumping duty by the US Department of Commerce on Indian shrimp consignments has evoked mixed responses among the seafood exporters fraternity, saying that individual exporters could appeal for review. USDOC, in its 15th administrative review, has issued the final results of the anti-dumping duty order on frozen, warm water shrimps from India by increasing the rate to 7.15 per cent from 3.06 per cent in the 14th administrative review.

Rather than making an overall impact on the total exports from the country to the US, Shaji Baby John, Managing Director, Kings Infra, said the USDOC decision is expected to hit the profitability of the select exporting firms. The US is a highly organised and lucrative market, and the industry there does not want low-cost shrimps from importing countries to slump their domestic distribution and retail prices.

Hence, the domestic fisheries industry there always lobbies the US government for anti-dumping duties and other entry barriers for imported shrimp, he told BusinessLine. Echoing a similar view, another source in the exporting fraternity pointed out that the uncertainty in the Chinese markets has forced new players to focus on the US market offering at lower prices.

This has also facilitated the hike of duty rates since the US shrimp prices are very remunerative. Official sources maintain that major players who have not gone for the review are unlikely to hit the current anti-dumping duty rates. The new rates will apply to only those who have preferred reviewing their rates in the current year. A higher anti-dumping duty applies to all exporters for their first entry to the US markets. Later they can appeal for a review.

This has been an ongoing process for the last 15 years in the US, and those exporters in the lower slab will not go for any review in the normal case. Vietnam to benefit Seafood Exporters' Association officials said that anti-dumping duty would benefit Vietnam due to the Free Trade Agreement between the two countries. However, the emerging situation would cast a shadow on the prospects of the beleaguered sector when it is recuperating after the easing of Covid restrictions.

When Omicron, the new Covid variant, has started ringing alarm bells, the situation may lead to subdued demand in the overseas markets. The US-based Southern Shrimp Alliance is the original petitioner against India and several other nations in the shrimp import issue. They have raised an allegation that the lower-priced pond raised shrimps from Brazil, China, Ecuador, India, Thailand and Vietnam are hurting the US industry.

The US mostly harvests shrimp from the sea. SSA maintains that the dumping margins in administrative review were determined after USDOC repeatedly selected a tiny subset of Indian exporters for individual examination and has allowed hundreds of other Indian exporters to ship to the US with confidence that their own pricing practice will not be evaluated.

This, in turn, has encouraged many Indian shrimp firms to increase their presence in the US market with aggressive pricing strategies. India's seafood exports have declined both in volume and value in the last financial year, reaching \$5.96 billion following a subdued demand in many overseas markets due to Covid. The frozen shrimp shipments comprise around 74 per cent of the value of India's total seafood exports.

### **India: Aquaculture professionals see domestic promotion a way to increase farmed shrimp output**

<https://www.thehindubusinessline.com/economy/agri-business/aquaculture-professionals-see-domestic-promotion-a-way-to-increase-farmed-shrimp-output/article34196037.ece>

"Experts in the Indian aquaculture industry have called for intensified focus on markets other than the US, and for promoting shrimp consumption in the domestic market to achieve the 1.5-million tonnes target of farmed shrimp production and a total marine product export revenue of \$15 billion (Rs.1,08,000 crore) by 2025. Voicing concern on the over-dependence on the US market that has remained stagnant, the Society of Aquaculture Professionals (SAP) said the

country has to either develop its own programme or participate in a global programme to promote shrimp consumption in major markets. The society has brought out a white paper on 'India's Farmed Shrimp Sector in 2020'.

The Global Aquaculture Alliance (GAA), the international body that promotes sustainable aquaculture, has put forward the idea of collective promotion of shrimp in the US by using a model used successfully by avocado fruit producers. SAP has requested the Indian government to study GAA's proposal and decide whether it wants to support the proposal or develop an alternative plan. There are also recommendations to regain markets in Europe, Japan and other countries and invest in a 'Made in India' shrimp branding that can distinguish India's shrimp in a global market.

Advocating development of the domestic market for shrimp in India, SAP said that with a large population and increasing economic prosperity, shrimp as an easy-to-prepare food will win wider consumer acceptance, provided there is adequate market promotion. SAP said a review of shrimp farming in India in 2020 reported a 19 per cent decline in production to about 650,000 tonnes from a record output of nearly 800,000 tonnes the previous year.

If India needs to grow to the targeted production of 1.4 million tonnes by 2024, the industry stakeholders are unanimous that the government should take steps to resolve shrimp health issues on a priority basis; increase the carrying capacity of the ecosystems that support production; and expand and diversify markets.

In a virtual meeting conducted by SAP among industry stakeholders for a review of shrimp farming in India 2020, Anil Kumar, Joint Director of Marine Products Exports Development Authority (MPEDA), said Indian shrimp exports will immensely gain from the recent inclusion of seafood in the US dietary guidelines as it will raise the shrimp consumption.

According to MPEDA, instances of antibiotic residues in farmed shrimps have significantly decreased in the last three years, which has resulted in less rejection of export consignments to the European Union. The rejections have come down to just four shipments from a high of 13 shipments in 2018 with nil rejection in the last six months, he said, adding that the removal of antibiotic testing for Black Tiger shrimp export by Japan is a positive development.

Elias Sait, the Secretary-General of the Seafood Exporters Association of India, said the enterprising nature of farmers has helped keep the production cost under control. The alternative to the export incentive scheme looks equally attractive and has exhorted stakeholders and the government to come up with a plan to support achieving the target of 1.5 million tonnes of farmed shrimp production.

### **India: Aquaculture space awaits disruption**

<https://www.entrepreneur.com/article/365582>

"India, a country of a 1.3 billion people, is known for various reasons. It's the largest democracy in the world; its Army is now the world's largest ground force; it's the first country to enter the

Mars' orbit; Yoga originated in India and has existed for over 5,000 years; has the largest number of post offices in the world; it's the largest producer of milk, jute, and silk. The country, with its three sides surrounded with water, is also the second-largest aquaculture producer in the world and fourth-largest seafood exporter.

However, despite the country having the second-largest startup ecosystem, it hardly has startups working in aquaculture to assuage pain points. The year 2020, despite being ruthless in terms of business and economy, India produced a record of 11 unicorns—startups with over \$1 billion valuation—proving how startups acted as a torch in the dense fog, called pandemic.

### India's Aquaculture Summary

A 2.36 million hectare of ponds and tanks, a coastline of 7,500 km, and a brackish water area of 1.2 million hectare, has helped India to produce 137.58 lakh tonne of fish in 2018-19, which accounts for a little over 6 per cent of global fish production. India takes pride in being the largest exporter of shrimp! The overall export of frozen shrimps during 2019-20 was pegged at 6.52 lakh tonne, which fetched foreign exchange worth \$4,889.12 million, accounting for a share of 50.58 per cent in quantity and 73.21 per cent of the total dollar earnings of seafood exports. In 2019-20, India shipped 12.9 lakh tonne of seafood worth \$6.68 billion.

These stats evoke the question: Why doesn't India have enough aquaculture startups? Entrepreneur India reached out to a handful of startups in the space to discuss the potential and government's role. Meet the Players A simple conversation in 2016 with a shrimp farmer over a train journey helped Rajamanohar S., understand farmers' challenges in aquaculture farming. Coming from the high-tech sector, he envisioned a technology solution that could improve the farm efficiency, market linkage and eventually improve farmer income, and that's how the aquaculture startup, Aquaconnect, was founded.

Today, the Chennai-headquartered startup works with around 30,000 shrimp and fish farmers majorly located in Andhra Pradesh, Gujarat and Tamil Nadu. According to Rajamanohar, "The biggest impediment for development is lack of reliable data and data-driven decision-making capabilities. Our data-driven technology approach brings transparency, traceability and much needed predictability to the aquaculture ecosystem." The company has \$1.1 seed capital from Omnivore and Hatch Norway, and is currently raising its pre-series round.

For Prasanna Manogaran, who had completed engineering from Madras Institute of Technology, entering agritech was not the first choice. He had first established an ed-tech startup called Axiom in 2008, which was later acquired by some other player, allowing Manogaran with his close friend Bharani C.L. to steer towards the agritech space. Initially ideated to work on the model of farm-to-fork, the founders realized there is an opportunity for them to increase farmers' income by diversification and micro farming, and finally found Aqgromalin in 2019.

Currently, Aqgromalin is working with around 500 farmers in Tamil Nadu, Telangana and Andhra Pradesh. The startup works with both agriculture and aquaculture farmers and encourages them to diversify their produce to mitigate risk. "Our micro farm concept can be started with minimal investment and space," Manogaran added. They have raised a seed fund

from a clutch of angel investors in the Middle East and will be aiming for its Series A round in the coming months. A trip to his village turned into an entrepreneurial opportunity for Sreeram Raavi, who is the founder and the managing director of Eruvaka Technologies, an AI- and IoT-based aquaculture tech company based in Andhra Pradesh.

In this particular visit, Raavi was exposed to the difficulties aquaculture farmers face after visiting his uncle. Raavi found his uncle was distressed and the reason was a severe drop in oxygen level in a pond, killing several fishes. This mishap led to a loss of INR 8-9 lakh. Raavi said his uncle could have prevented this if he had an indicator that could have alerted him of dropping oxygen level.

This was an eyeopener for Raavi, who now serves over 50 customers nationally and has more than 100 customers globally. The startup boasts of serving major clients such as Priya Devi, Devi Sea Foods and Santa Priscila.

### The Pain Points

According to Rajamanohar, the aquaculture market lacks technology encroachment compared to any other sector. “The lack of scientific farming practices and adoption of technology tools results in higher production cost due to production inefficiency, losses due to diseases which cost close to 20 per cent of production volume and there are relevant economic losses as well.” He noted that around 1 million rural farmers and coastal communities depend on shrimp and fish aquaculture, where the traditional farming practices prevent them from achieving production efficiency and fail to predict diseases.

According to him, a large section of farmers in this sector still rely on ‘ancestral intelligence’ implying traditional techniques and beliefs, but needs to follow cutting-edge technology such as ‘artificial intelligence’ to make profit. To address this issue, Rajamanohar and his team built the Aquaconnect app, an AI-driven advisory solution that helps farmers improve productivity, predict disease and ultimately achieve higher farm income (up to 5 per cent).

“Our AI advisor records production data such as water quality parameters, feed inputs, health status and biomass conversion,” he added. Echoing the same, Reihem Roy, partner at Omnivore—a venture capital focusing on agritech startups—said India’s aquaculture industry appears ripe for disruption, and claimed Indian aquaculture farming is extremely unscientific and boasts some of the poorest feed conversion ratios in aquaculture globally. “Aquaculture farmers rely almost universally on local consultants for extension services, who are often unscrupulous.

Low count per kilo due to premature harvests, driven by either poor pond management or disease, curb profits,” he added. Raavi believes there are many inefficiencies and uncertainties in traditional aquaculture, which eventually leads to suboptimal profits for farmers who sometimes even lose the entire produce. “These inefficiencies also lead to water pollution, soil pollution, mangrove destruction, etc.

Additionally, there is no information management in the aquaculture domain. Farmers, usually, rely on word of mouth for decision making,” he added. To fix these issues, Raavi’s Eruvaka

Technologies develops on-farm diagnostic equipment for aquaculture farmers to reduce risk and increase productivity. The company integrates sensors, mobile connectivity and decision tools for affordable aquaculture monitoring and automation. Eruvaka Technologies till date has raised Series B round from Omnivore and Nutreco.

Manogaran believes farmers need to diversify their produce in order to escape from a bad season. “Progressive farmers have been able to mitigate the risks surrounding price fluctuations and crop failure by diversifying into aquaculture and animal husbandry,” he said. To support this, Aqgromalin has launched ready to implement micro farms for farmers. The agri-tech startup follows a comprehensive approach to help farmers utilize their existing farm assets and broaden their agricultural practices for better growth.

Furthermore, the company provides access to necessary inputs and all required materials to immediately start operations including extensive training for the cultivation of crops, raising farmers' awareness for the common diseases, and equipping them with expert skills to troubleshoot and increase yield.

#### Why Hasn't More Startups Disrupted The Space?

Agri-tech startups focusing on agriculture practices have over the years gained immense trusts among the farmers, thus making higher adaptability and growing presence. This has not only helped startups in this space to work diligently and bring new innovation, but has also increased farmers' produce, helped them to meet global quality standards, connect farmers with buyers bringing transparency.

However, the same cannot be said in aquacultural space yet. On asking the reason, Rajamanohar said unlike agriculture, investments in aquaculture are very low. He noted that till date over \$500 million has been pumped into agritech space, of which a puny portion of 0.5 per cent has been invested in the aquaculture space. “Low awareness among investors could be the main drawback that limits investments. Also there are other factors such as season blend business nature, no access to accelerators and incubators, lack of funds and credible guidance, etc,” he added.

He highlighted that lately investors have been placing bets on the meat segment especially on downstream market linkage (Licious, Freshtohome, Tendercut) and is hopeful that soon investors will consider aquaculture and fisheries for investment. Manogaran pointed out that agritech space has seen more than 500 per cent increase in investment in the past three years and is confident that it will soon be investors darling like the edtech space.

“Within the sector currently more investments are going into the fruits and vegetables segment as this is where most investors are comfortable with. Eventually we will see a lot of activity in the aquaculture and poultry segments,” he added. As per Raavi, aquaculture is a high-risk and high-reward sector which consists of multitude of variables thus making the technology development cycle longer. He believes technology solutions in the sector have to be precise or else will result in heavy losses. This could be the reason why farmers are skeptical about technology and prefer extensive trials before adopting it.

## Will We See More Startups In This Space?

Unlike India, Scandinavian countries such as Norway, Iceland and Scotland have incubators and accelerators specific to ocean economy to boost the ecosystem. “I am yet to see such seafood sector specific startup platforms available to entrepreneurs to sensitize them on opportunities in this sunrise sector. It would help them connect with the partners in the value chain and eventually help the industry to professionalize and improve the sectoral efficiency,” Rajamanohar added.

Ease of access to investment funds, accelerators, FPO’s will only encourage more entrepreneurs to focus in this sector. Manogaran applauds the government for focusing on animal husbandry and aquaculture and believes this will attract more startups and venture capital players in this space.

Finance minister Nirmala Sitharaman in Union Budget 2021 proposed that the government will focus on ensuring increased credit flows to animal husbandry, dairy and fisheries. The government has ensured substantial investments in the development of modern fishing harbours and fish landing centres, starting with five major fishing harbours: Kochi, Chennai, Visakhapatnam, Paradip and Petuaghat.

“As a country though, the potential is significantly large in these sectors and we still lag in terms of production. We need to start approaching these sectors keeping in mind the global demand rather than local demand,” Manogaran added. Taking the example of shrimps, he said India can fetch \$5 billion worth of business through annually if catered globally. Omnivore’s Roy believes that to encourage more entrepreneurs in a particular space is by establishing how easily tech-based solutions can make inroads into its value chains. He said that unlike other sectors where e-platforms are limited by the penetration of smartphones in their target used bases, shrimp aquaculture boasts close to 100 per cent smartphone penetration in its farmer base.

“This statistic when combined with the relatively few target farmers (estimated at around 100,000), and the geographic concentration of farms in three key states, make for a serviceable market that is almost as large as the total addressable market itself,” he added. Raavi added that startups can look at challenges in aquaculture and look at them as opportunities in advisory services, market linkages, D2C and logistics.

## Market Potential

According to Rajamanohar, India’s aquaculture market is estimated to be \$17 billion at present comprising mainly fish and shrimps. Fish contribute around 92 per cent of the production output while the rest belongs to shrimps. He said India’s aquaculture market is expected to reach \$19 billion by 2022 and to double its production and exports in next five years.

“By 2030, the sector shall contribute two-thirds of the total fish production and witness a tremendous rise in the country’s seafood exports. Annual fish and shrimp production is projected to increase from 800,000 tonne in 2019 to 1.4 million tonne in 2024,” he added. According to Rajeev Ranjan, the chief secretary of Tamil Nadu and former Union secretary of fisheries

(government of India), from producing 137.58 lakh tonne of fish in 2018-19 India is looking at 220 lakh tonne by 2024-25 with average aquaculture productivity to be raised from 3.3 tonne per hectare to 5 tonne per hectare by 2024-25. He further added that fisheries exports are expected to reach INR 1 lakh crore by 2024-25 and INR 2 lakh crore by 2028. Apart from this, the sector will also create employment opportunities from about 1.5 million in 2018-19 to about 5.5 million in 2024-25.

### **India: Australia collaboration in the IOR: A case for Blue Economy**

<https://www.orfonline.org/expert-speak/india-australia-collaboration-ior-case-blue-economy/>

"India and Australia, two of the largest powers among the littoral states of the Indian Ocean, play important geopolitical roles in the security and stability of the Indian Ocean Region (IOR). While their interest in the region has been skewed in the past, the IOR's rising geopolitical and economic importance and global influence is creating potential for cooperation among the countries, as security, economic, and environmental threats to the nations in the IOR are becoming convergent.

Collaboration between India and Australia in strengthening Blue Economy (BE) initiatives in the IOR could prove to be a successful tool in addressing these imminent threats. IOR — Significance and concerns The IOR holds great significance in the future world order in terms of economic growth, natural resources, as well as major sea lines of communication. However, the economic geography of the IOR is not just expanding, it's also being re-shaped and de-stabilised by China's overarching influence through the Belt and Road Initiative (BRI), dominance over critical sea trade routes, and debt diplomacy.

For India and Australia, security and stability in the IOR is crucial. Being geographically and economically central to the IOR, any geo-economic contestations will have a huge impact on India. With India already facing territorial threats amid the String of Pearls being woven by China, Chinese dominance over the region severely limits India's growth and power. For Australia, there is an emerging acknowledgment of the importance of stability in the IOR, especially as the consistently increasing trade between Australia and the IOR will be under risk given China's influence.

Australia learnt the negative consequences of extreme dependence on China, having faced economic retaliation from the latter over the former's inquiry into the origins of the coronavirus. Geo-economic and environmental consequences for the two countries in the IOR are far too large to ignore and create significant overlap to work together.

Furthermore, the IOR is also facing various increasing environmental risks [1] in addition to the threat of climate change [2] — both of which pose a serious concern and risk to the lives and livelihoods of millions of people in India and Australia. Thus, geo-economic and environmental consequences for the two countries in the IOR are far too large to ignore and create significant overlap to work together.

Blue Economy

The Blue Economy presents a unique and exceptional opportunity for cooperation between India and Australia to approach the growing concerns in the region. While the advantages of BE in addressing environmental threats and raising economic growth are well known, blue pursuits will also stabilise the ocean space while re-establishing the Rules-Based Order (RBO) and creating significant influence.

The significance of BE in pursuing sustainable economic, political, and security development in the IOR is best evident by Indian Ocean Rim Association's (IORA) increased focus in strengthening the Blue Economy in its agenda. Besides, both India and Australia understand BE's potential in solving the principal problems in the IOR and are equally motivated to strengthen their blue pursuits as exhibited by their individual efforts. Areas of cooperation While India and Australia have plenty of collaboration opportunities, we focus here on two important areas of cooperation.

### Aquaculture

India and Australia have registered an exceptional growth in the aquaculture industry and there is still huge growth potential. The two countries' aquaculture growth is dependent on cultivating aqua species that are not cultivated by the other [3], which creates a demand for the other's goods in their domestic market. While, Australia has always stressed over strict environmental and food safety guidelines and continues to do so in the National Aquaculture Strategy 2017, India finally aims towards more sustainable practises in aquaculture in its Draft National Inland Fisheries and Aquaculture Policy 2019.

Hence, a common ground for the two countries to share sustainable practises in aquaculture has emerged. Moving forward, India must ensure minimal deviations from Australian standards to allow flow of more goods and safe infrastructure for trade between the two countries. Although, both countries are a part of the Network of Aquaculture Centres in Asia-Pacific (NACA), which allows multilateral cooperation over aquaculture concerns in the region, there is a requirement for a better bilateral cooperation among the two countries, especially in terms of building capacity and training on mitigation measures.

India must ensure minimal deviations from Australian standards to allow flow of more goods and safe infrastructure for trade between the two countries. Illegal, unreported, and unregulated fishing Australia has undertaken befitting national plans to combat illegal, unreported, and unregulated (IUU) fishing, which includes monitoring, controlling, and surveillance (MCS) and management of fisheries; hence, proving to be extremely active against IUU fishing in the IOR.

On the other hand, India has plenty of regulations in place to manage domestic 'in-province' as well as foreign 'beyond-province' fisheries and fishing vessels, including satellite-based vessel imaging. Both countries' extensive knowledge in mitigation measures could result in mutual learning and better combating strategies through joint fisheries partnerships especially meant to address IUU fishing, while also establishing a knowledge sharing hub and enhancing capacity building programmes.

Furthermore, since the IOR still finds itself deeply ineffective in mitigating IUU fishing, India and Australia could collaborate with other countries in the region to create marine protected areas and intensify the MCS mechanism in the IOR.

The Blue Economy initiatives hence not only combines India and Australia's shared geo-economic, geostrategic, and geo-environmental motivations in the IOR, but also compels both the countries to acknowledge the untapped growth and power potential that could be fully realised with cooperation and mutual learning in this arena. Furthermore, both New Delhi and Canberra need to keep up in their blue pursuits lest they may lose the 'blue race' in the IOR to rivals like China. Thus, the best way forward for the two nations is together.

### **India: Battered by rough weather, seafood sector seeks Centre's aid**

<https://www.thehindubusinessline.com/economy/agri-business/battered-by-rough-weather-seafood-sector-seeks-centres-aid/article33687080.ece>

"The crisis-ridden seafood sector has sought the Centre's support for the release of ₹2,500-crore under MEIS (Merchandise Exports from India Scheme) since April last year. MEIS refunds are pending with the government which, in turn, has put tremendous pressure on the working capital especially on MSME units in the sector, said Alex K Ninan, President of Seafood Exporters Association of India - Kerala region.

#### Rocketing interest rates

He added that the banks have not waived any interest or their charges during the lockdown period. Instead, they have granted only additional loans with a higher rate of interest by withholding promissory notes and personal securities unlike the government's order. In his Budget wish list, he said that the RBI should notify banks to extend the overdue packing credit from 120 to 180 days as a speed measure from one year and restructure the interest payments.

He said that credit ratings are done by agencies like Crisil under instructions from banks and many units have been downgraded owing to the present situation. Based on the findings of the rating agencies, banks lend loans, advances and charge interest. This has become a tool for banks to deny loans and charge higher interests.

They should provide temporary working capital at subsidised rates to tide over the working capital problems and credit ratings should not be a criteria for now, he added. Ninan added that the non-payments from importers in China has created a serious financial crisis for the seafood industry with the government not including the sector in the Kamat committee which recommended for a bank relief package of 20 per cent additional funding.

The Rs.6,000-crore seafood industry in Kerala has been seriously impacted by the Covid-19 pandemic and factories are witnessing acute raw material shortage. The fishing industry is heavily dependent on high value catches of shrimp, squid, cuttle fish, octopus, clams and fishes. Hence, he urged the government to provide fishermen subsidy on diesel, fishing nets, fishing gears, financial support to equip them for venture into deep sea fishing. The All India Shrimp

Hatcheries Association said that primary producers such as hatcheries and farmers should get export benefits which is not available to them currently.

D Ramraj, President of the Association, urged the government to take steps to remove the import duty on shrimp broodstock and hatchery feeds as well as reduce the aquatic quarantine fee similarly to other plant and animal quarantines.

Credit guarantee

Rajmanohar Somasundaram, CEO, Aquaconnect, suggested the creation of a credit guarantee instrument to address minimum price protection for shrimp farmers based on mutual agreement between farmers and shrimp exporters. This will insulate farmers from international price fluctuations since 99 per cent of the shrimp produced in India are exported.

“We are expecting a slew of measures from the Budget 2021 to improve the fisheries competitiveness that should focus on addressing the critical gaps in fish production and productivity, access to finance, post-harvest infrastructure and management, modernization of the sector, and also for the welfare of the fishers and fish farmers,” he added.

### **India: Behind polluted Indian river stretches, inadequate sewage treatment**

<https://www.downtoearth.org.in/blog/pollution/behind-polluted-indian-river-stretches-inadequate-sewage-treatment-77957>

"The Central Pollution Control Board (CPCB) in 2018 identified 351 polluted river stretches in India. The assessment of water quality for identification of polluted river stretches found that 31 states and Union territories (UT) had rivers and streams that did not meet the water quality criteria. These states / UTs have to submit their action plans for the same. Maharashtra has the highest number of polluted river stretches (53), followed by Assam (44), Madhya Pradesh (22), Kerala (21), Gujarat (20), Odisha (19), and West Bengal and Karnataka (17).

The stretches of rivers not meeting with the criteria are identified as polluted stretches and categorised into five priority classes. The polluted river stretches are prioritised in five categories based on biological oxygen demand concentration consistently. 1) Priority 1: Exceeding BOD levels >30 milligram a litre 2) Priority 2: BOD between 20&30 mg / l 3) Priority 3: BOD between 10 & 20mg / l 4) Priority 4: BOD between 6-10 mg / l 5) Priority 5: BOD between 3& 6 mg / l The local bodies and departments concerned of the states / UTs will be liable to pay compensation of Rs 5 lakh a month per drain if the order is not implemented on time; and Rs 5 lakh per STP for default in commencement of setting up of the STP.

Almost 60 per cent of polluted river stretches exist in eight states: Maharashtra, Assam, Madhya Pradesh, Kerala, Gujarat, Odisha, West Bengal and Karnataka. The National Green Tribunal (NGT) on December 6, 2019 directed that 100 per cent treatment of sewage needed to be ensured — at least to the extent of in-situ remediation — before March 31, 2020, along with work on setting up of sewage treatment plants (STP) and connecting all drains to the STPs. About 72,368 million litres per day (MLD) of sewage was generated against which operational treatment

capacity was only 26,869 MLD in 2021, according to the latest CPCB report National inventory of sewage treatment plant 2021.

This is not even half of the total sewage generated in the country. A huge amount of sewage is left untreated / partially treated and discharged directly into rivers. Maharashtra, Assam, Madhya Pradesh, Kerala, Gujarat, Odisha, West Bengal and Karnataka have sewage treatment capacity disproportionate to the sewage generated, which is also one of the major reasons for the high number of polluted stretches in these states.

#### Maharashtra

Maharashtra has maximum number of polluted river stretches in the country. Untreated sewage discharge in rivers is one of the major reasons for polluted river stretches in the state. Sewage generation in Maharashtra is disproportionate to the installed treatment capacity. Estimated sewage generation is 9,107 MLD and installed treatment capacity 6,890 MLD, which is 75 per cent of the total sewage generation.

Out of 6,890 MLD installed treatment capacity, 6,366 MLD is operational treatment capacity, which is 70 per cent of the total sewage generation. It shows there is a gap of 2,741 MLD (30 per cent) in treatment capacity. It is also observed that despite 6,366 MLD of available (operational) sewage treatment capacity, its actual utilisation is only 4,242 MLD. And there is still a vacant sewage treatment capacity of 2,124 MLD.

#### Assam

Assam has the second-largest number of polluted river stretches in the country. And there is no STP in Assam. Septic tanks are used for treatment of sewage. Estimated sewage generation in state is 809 MLD.

#### Madhya Pradesh

Madhya Pradesh has 22 polluted river stretches. And estimated sewage generation is 3,646 MLD, installed treatment capacity is 1,839 MLD, which is 50.44 per cent of total sewage generation of 3,646 MLD, and proposed capacity is 85 MLD. The installed treatment capacity is 1,839 MLD; 684 MLD is the operational treatment capacity, which is only 18.7 per cent of total sewage generation. The actual utilisation, however, is 536 MLD. There is still a vacant sewage treatment capacity of 148 MLD.

#### Kerala

Kerala has 21 polluted river stretches. And estimated sewage generation is 4,256 MLD and installed treatment capacity is 120 MLD, which is only 2.82 per cent of the total sewage generation (seven STPs). The operational capacity is 114 MLD of 120 MLD installed capacity, which is 2.67 per cent of total sewage generation in the state. There is a gap of 4,142 MLD (97 per cent) in treatment capacity. The actual utilisation is only 47 MLD. There is still a vacant sewage treatment capacity of 67 MLD.

## Gujarat

Gujarat has 20 polluted river stretches. Estimated sewage generation is 5,013 MLD, installed is 3378 MLD, which is 67.38 per cent of the total sewage generation. The operation treatment capacity is 3,358 MLD, which is 67 per cent of total sewage generation. It showed a gap of 1,655 (33 per cent) in treatment capacity. It is also observed that despite 3,358 MLD of available (operational) sewage treatment capacity, its actual utilisation is 2,687 MLD. There is still a vacant sewage treatment capacity of 671 MLD.

## Odisha

Odisha has 19 polluted river stretches. Estimated sewage generation is 1,282 MLD and installed 378 MLD (14 STPs), which is only 29.48 per cent of the total sewage generation. Out of 378 MLD of installed treatment capacity, only 55 MLD is the operational treatment capacity, which is 4.3 per cent of the total sewage generation. There is a gap of 1,227 MLD (95 per cent) in treatment capacity. It is also observed that despite 55 MLD of available (operational) sewage treatment capacity, its actual utilisation is 50 MLD.

## West Bengal

West Bengal has 17 polluted river stretches. Estimated sewage generation for West Bengal is 5,457 MLD and installed treatment capacity is 897 MLD which is only 16.4 per cent of the total sewage generation and proposed treatment capacity is 305 MLD.

Out of 897 MLD of installed treatment capacity, 337 MLD is operational treatment capacity which is 6.18 per cent of the total sewage generation. There is a gap of 5,120 MLD (93.8 per cent) in treatment capacity. Despite 337 MLD of available (operational) sewage treatment capacity, its actual utilisation is 213 MLD.

## Karnataka

Karnataka has 17 polluted river stretches. The estimated sewage generation is 4,458 MLD and installed treatment capacity is 2,712 MLD (140 STPs), which is 60.83 per cent of the total sewage generation. Out of 2,712 of installed treatment capacity, operational capacity is 1,922 MLD, which is 43.3 per cent of total sewage generation and shows there is a gap of 2,536 MLD (56.9 per cent) of treatment capacity in the state.

Despite 1,922 MLD of available (operational) sewage treatment capacity, its actual utilisation is 1,786 MLD. Madhya Pradesh (81 per cent), Kerala (97 per cent), West Bengal (93.8 per cent) and Odisha (95 per cent) has more than 80 per cent of sewage treatment capacity gap with respect to sewage generation; Assam does not have any STP; Gujarat has 33 per cent and Maharashtra has 30 per cent sewage treatment capacity gap. Nivit Kumar Yadav, director, industrial pollution team, Centre for Science and Environment: "CPCB study reveals that discharge of untreated wastewater is one of the main causes of river pollution in states.

There is either not sufficient treatment capacity or capacity is under-utilised in the states. This is one of the reasons why action plan to clean the polluted river stretch is not working. Action plan for a polluted river stretch is a good step in cleaning river, but regulators have lost focus. They now only concentrate on polluted stretch and river pollution is ignored.” DD Basu, advisor, CSE, said minimum flow of river is important to discharge treated sewage.

Treated sewage cannot make river, it needs minimum flow to make aquatic ecosystem. To maintain and restore the wholesomeness of river (Aquatic ecosystem) — mentioned in the preamble of Water Act, 1974 — is missing in river rejuvenation programme of India.

### **India: Bill will curtail fishing rights: National forum**

<https://timesofindia.indiatimes.com/city/goa/bill-will-curtail-fishing-rights-natl-forum/articleshow/84623322.cms>

"National Fishworkers' Forum (NFF) has urged the state fisheries minister and fisheries department to raise and seek to keep in abeyance the Indian marine fisheries (IMF) bill 2021 till the concerns of lakhs of fishworkers across India are addressed while alleging the draft bill will curtail the fishing rights of marine capture fishers.

In a memorandum to the Goa government, NFF president Narendra Patil and general secretary, Olencio Simoes condemned the bill as it is sought to be pushed during the pandemic without consulting the fishing community.

The bill lacks clarity in definitions and contravenes the definitions and international terms with regard to the customary traditional rights of Indian fishers over the land and sea, and also dispossesses the rights of the coastal States over fisheries and management of activities in territorial waters, the memorandum states.

### **India: Biodiversity loss and climate change pose a real threat to our agri-food systems**

<https://www.hindustantimes.com/ht-insight/climate-change/biodiversity-loss-and-climate-change-pose-a-real-threat-to-our-agri-food-systems-101644952707355.html>

"The piece has been authored by Konda Chavva, officer-in-charge, FAO Representation in India. Biodiversity, whether at the level of genetic, species or ecosystem, strengthens the capacity of smallholder farmers, livestock keepers, pastoralists, forest dwellers, fishers and fish farmers to produce food and a range of other goods and services in a vast variety of different environments.

The agri-food systems across the world face twin crises of biodiversity loss and climate change. Urgent responses are needed to protect the agrobiodiversity for food and nutrition security, and to climate-proof livelihoods, especially of the marginalised and vulnerable communities. Biodiversity, whether at the level of genetic, species or ecosystem, strengthens the capacity of smallholder farmers, livestock keepers, pastoralists, forest dwellers, fishers and fish farmers to produce food and a range of other goods and services in a vast variety of different environments.

It increases resilience to shocks and stresses, provides opportunities to adapt production systems to emerging challenges, such as those posed by climate change. For instance, India is mindful of the importance of mangrove ecosystems and their biodiversity in supporting coastal fisheries and hence the livelihoods of local rural communities.

This also finds mention in FAO's First Report on The State of the World's Biodiversity for Food and Agriculture released in 2019 highlighting the extent of the problem of biodiversity loss. At the intergovernmental level, at the Convention of Biological Diversity (CBD), the first draft of the post-2020 Global Biodiversity Framework (GBF) has been developed.

The framework's theory of change assumes that transformative actions are taken to deploy solutions to reduce threats to biodiversity. It reiterates the need for action that biodiversity is used sustainably in order to meet people's needs. The aim of the GBF is to put the world on a path to reach the 2050 Vision for Biodiversity.

Target 10 of the GBF Target emphasises the need to ensure that all areas under agriculture, aquaculture and forestry are managed sustainably, in particular through the conservation and sustainable use of biodiversity, increasing the productivity and resilience of these production systems. Agrobiodiversity in India is under threat. Agrobiodiversity includes the diversity and variability of plants, animals, microorganisms and in situ and ex situ conservation of genetic resources linked with agriculture.

Genetic erosion in agricultural biodiversity results due to homogenisation/intensification of agricultural systems, specialisation, of plant and animal breeders, and increasing levels of genetic vulnerability of specialised crops and livestock. Modern monoculture agriculture reduces inter-cropping resulting in the loss of several traditional varieties that were grown interspersed with the main crop for soil fertility.

The challenge is to sustain agricultural biodiversity necessary for agriculture and to mitigate negative impacts of agricultural systems and practices. Loss of habitats and overexploitation have led to depletion of genetic diversity of several wild animals and cultivated plants. The number of crop varieties grown under different agro-ecosystems has severely declined in recent decades reducing agrobiodiversity in diverse farming systems.

Shrinking genetic diversity has led to more vulnerability to diseases and pests and lesser adaptability to environmental changes. The loss of biodiversity threatens the capacity of ecosystems used for agri-food systems to sequester carbon and reduces the options available for modifying production systems in the light of climate change mitigation and adaptation.

FAO's Regional Conference for the Asia and the Pacific Region 36th session (APRC36) to be held in March 2022, also emphasises the need to strengthen the climate resilience of agrifood systems. Climate change and associated severe weather, droughts, fires, pests, and diseases are already threatening agri-food systems across the world. According to IPCC projections increase in climatic variability will exacerbate seasonal/annual fluctuations in agricultural production.

The loss of farm revenue due to extreme temperatures and rainfall shocks is estimated to be 12% for monsoon (kharif) and 6% for winter (rabi) crops with more impacts on non-irrigated systems. Similarly, extreme temperatures caused a farm revenue loss of 4% during kharif and 5% during rabi (The Economic Survey, 2018). Productivity is expected to decrease for about half of fisheries worldwide as a result of climate change impacts on stock productivity and on fish migration patterns.

At the COP26 of the UNFCCC, Governments agreed on the need to continue working on Agriculture under the Convention process with a view to adopting a decision at COP27 to be held in 2022. At COP26, 45 governments pledged urgent action and investment to protect nature and shift to more sustainable ways of farming, and 95 high profile companies from a range of sectors commit to being 'Nature Positive', agreeing to work towards halting and reversing the decline of nature by 2030.

Agri-food systems have to be made not simply 'Nature Positive, but 'Biodiversity Positive' too. Twenty six countries, including India, set out new commitments to change their agricultural policies to become more sustainable and less polluting, and to invest in the science needed for sustainable agriculture and for protecting food supplies against climate change; these are laid out in two Action Agendas.

Together both climate change and biodiversity loss continue to adversely affect farm incomes and nutrition and food security. Decisive actions to address both can ensure the sustainability of our agri-food systems.

### **India: Biofloc Farming in India; A Lowdown**

<https://krishijagran.com/animal-husbandry/biofloc-farming-in-india-a-lowdown/>

"What is Biofloc fish farming? Aquaculture as an activity is constantly growing and maximizing resources and spaces is an important aspect. This is why different technologies have been worked upon. These technologies seek to resolve the main problems that can be found in factory farms. One of these technologies that can be found in a more prevalent fashion is the Biofloc technology. The Biofloc system has allowed aquaculture farms to reduce water exchange while providing added value to the products resulting from microbial metabolism.

Biofloc technology (BFT) is a technique that removes waste created by aquatic animals and provides nutrition to aquatic animals. Biofloc Technology (BFT) allows continuous recycling and reuse of nutrients in the culture medium, by minimum water exchange. Due to this reason, BFT is considered a new "blue revolution". It is a sustainable and environmentally friendly aquaculture technique as it is based on in situ microorganism production. Under the BFT system, wasted feed along with fish excreta in the water ecosystem, is converted into feed that can be consumed by the fish.

The combination of microorganism, fungi, algae and so on forms a Biofloc which enhances the quality of water by absorbing inorganic waste. Therefore, resolving the issue of water pollution. This also enables the fish farmers to save funds on feed due to its ready availability. In a

populous country like India where there is a rise in population every day the demand for aquaculture also rises with it. The Indian subcontinent contributes a whopping 6% to global fish production and more. However, the expansion of aquaculture is limited primarily due to two factors: first, it puts pressure on the environment by discharging waste materials into bodies of water, and second, it is dependent on fish oil and fish food.

Biofloc technology can help resolve these problems because it is a profitable method of intensive fish farming that controls water quality and produces proteinaceous feed in situ. Biofloc acts as a waste water treatment method that also feeds aquatic animals.

The fact that little to no fishmeal is used in traditional methods of fish farming and farmers supply nutrient-rich material to the water to enhance the growth of algae and other organic matter on which the fish feed, served as an inspiration for researchers to Biofloc technology; where nitrogen is waste generated by the cultivation of organisms and is converted into bacterial biomass.

This is why this system is needed as the Biofloc system fits in this situation as an affordable technology. It converts toxic materials into useful products, serves as a nutrient retention belt in the pond, and lowers maintenance costs. Biofloc technology contributes to a reduction in water pollution by a lot and also limits the risk of introduction and spread of pathogens. BFT reduces the utilization of protein-rich feed along with the cost of standard feed and increases productivity. Thus, Biofloc technology keeps the water quality high and results in a great production of fish.

#### How does Biofloc system work and its profitability

This Profitable Method of Fish Farming is carried out in a tank of various sizes. The most common size is four inches in diameter. In a culture system exposed to sunlight, Biofloc technology converts unused feed and aqua animal faeces into food, resulting in a protein-rich live feed. Feeding costs are reduced by converting excess into food again. Biofloc is primarily composed of heterotrophic bacteria. It lowers the amount of ammonia and nitrite produced by fish feeding.

These Heterotrophic bacteria eat Ammonia and convert it into protein. This can then be consumed by fish to help them grow. It functions as actual feed for the fish. It also has a good nutritional value. Biofloc Farming eliminates all major costs, allowing for significant savings. Several factors, including high operational costs, the cost of vast lands, and the high costs of feeding, disposal, and discharge of waste sludge, will not be an issue if this method is chosen. Feeding ingredients for fish are the most expensive aspect of aquaculture.

When fish are fed high protein diets, approximately 70% of the protein is excreted as waste in the surrounding culture water in the form of nitrogen. We can recycle this waste into feed again using Biofloc, lowering the cost of high protein feeds.. Biofloc systems also reduce the spread of pathogens while also improving the fish health.

#### Requisites for Biofloc farming

Step 1: Setting up the pond or tank: Finding a location to set up the pond or tank is the first thing that is to be done. During this stage one needs to be mindful of factors like sunlight, temperature and ventilation. Keeping in mind that the majority of contaminants enter the water through the soil at the pond bed. Make sure that the pond is lined with a protective layer/ lining of concrete. This issue can be remedied by opting for a tank over a pond.

Step 2: Aeration: Installation of aerators is the second most vital step in this system. Aerators are responsible for maintaining the entropy of the suspended particles of algae, bacteria, protozoa, etc. which are the food for the fish. It also maintains the proper oxygen distribution throughout the tank/ pond and prevents the formation of anaerobic zones that can contribute to the formation of methane and ammonia. Formation of methane and ammonia can cause the mixture to smell, thus resulting in the degradation of the harvest quality. Hence, installation of aerators can directly affect the quality of produce.

Step 3: Species selection and related things: After setting up a proper aeration system one can move on to the selection of species. Due to the improved water quality in a Biofloc system, almost all species of fish can be cultivated easily. In order to make this decision simpler, one can also seek guidance from established experts in the fish farming field.

Step 4: Optimization of Carbon and Nitrogen: One of the most important requirements for Biofloc formation is that the carbon and nitrogen ratio in the culture system be maintained. The C:N ratio should be between 10:1 and 20:1 for the development of Biofloc. Manipulation of the C:N ratio can improve water quality by utilising nitrogen and regenerating new bacterial cells, thereby reducing waste effluent from the culture system. Step 5: Biofloc growth: After following through with the above mentioned stages, comes the time to begin cultivation. In this stage seeds for different algae, bacteria, protozoa, etc are added into the culture system along with a few probiotics to ramp up the process.

Within a matter of weeks the number of flocs would reach from almost negligible to four to five flocs per millilitre. One can keep track of floc growth by using a cone-shaped beaker or a flask and collect several water samples at a depth of 15cm to 25cm, preferably late in the morning. The solid particles will take over 20 minutes to settle when left undisturbed and then will get stuck to the sides of the container therefore making it easier to count them.

Step 6: Monitoring, Harvest, and Clean-up: Samples of water from the pond/tank must be taken on a regular basis to monitor the activity of the two Biofloc types and determine their density. As the stock grows and the feeding volume increases, the water will reach a tipping point and turn brown. To maintain a high respiration rate once the Biofloc system has turned brown, aeration must be significantly increased. The water should be monitored regularly, especially to determine the levels of dissolved oxygen and ammonia.

This gives an idea of how well the entire system is working. Regular monitoring of the performance of the farm stock, calculating and recording growth rate, overall appearance, FCR, and stock survival is also required. Conclusion Finally, after harvesting, proper cleaning and preparation of the pond setup or raceway is critical. Although it may appear appealing to reuse

the culture water because it took a significant amount of effort to build up the populations of microorganisms, this is not recommended. Pathogens may have accumulated in the culture, posing a serious biosecurity risk. According to research, heavy metals can accumulate in culture water over time, contaminating your stock and rendering it unfit for human consumption.

### **India: Biofloc tilapia farming set to help rural poor**

<https://thefishsite.com/articles/biofloc-tilapia-farming-set-to-help-indias-rural-poor>

"CMFRI provided is helping members of five SC families in the area to launch a biofloc fish farming unit under the scheme of Scheduled Caste Sub Plan (SCSP). The group began by stocking 1,800 genetically improved tilapia (GIFT) fry into a biofloc tank, set up adjacent to their households. CMFRI's assistance includes setting up the 23,500 litre tank and providing the fry, feeds and technical guidance.

According to CMFRI, the self-help group will be able to earn an income of at least 135,000 rupees (roughly \$1,800) from each 8-month cycle, and the fish will attain a minimum weight of 300 g. "Normally tilapia (GIFT) gains 300 to 500g weight during this period from this practice," said Dr K Madhu, principal investigator of the project and principal scientist of CMFRI.

Biofloc allows for high-density fish farming in a controlled environment, in which fish wastes are converted into useful nutrients. The CMFRI will monitor different phases of the practice continuously to enable maximum fish growth. A water quality kit also was supplied to the group to maintain the required parameter, Dr Madhu said.

India: Blue Economy in the Indo-Pacific: Navigating between Growth and Conservation

<https://www.orfonline.org/research/blue-economy-in-the-indo-pacific/>

#### Introduction

The Blue Economy (BE) is a recent field of study that encompasses economic activities that depend on the sea. A new paradigm for coastal management and development of marine resources, the concept has become a popular theme in the recent years. It is premised on the idea that a healthy ocean can support productive ecosystems, helping integrate economics with environmental sustainability, innovation, and dynamic business models.

BE's central proposition is that the ecological well-being of marine and coastal ecosystems can be increased by shifting to a more sustainable economic model, spurring a range of developmental activity—from generating renewable energy and promoting ecotourism, to sustainable fisheries and transport. Across the Asian and African littorals, there is growing agreement that the oceans should not be an arena of perpetual contestation between nations; rather, the vast sea bodies must be put to use in service of humankind to generate economic growth.

Policymakers and practitioners emphasise the need for pragmatism vis-à-vis the oceans, stressing on economic growth, human security, and national development. To be sure, there are different definitions of BE: institutions like the World Bank stress on the concept of “sustainable use of ocean resources”; others, such as the European Commission and the Commonwealth of Nations, emphasise “economic activity”.

There is, however, wide-ranging consensus on the need for BE approaches to both boost economic activity and preserve the oceans. Still, countries of the Indo-Pacific must contend with the reality that BE projects are facing problems in implementation. Despite an avowed commitment to blue growth, the region’s governments have struggled to navigate the tension between conservation and economics. It is more common for policymakers to seek to prioritise growth—which they consider to be the driver of national development.

For their part, those who work in the areas of social and environmental issues contend that the emphasis on economic growth has enabled “power-grabs” or the appropriation of public resources for private ends. Environmentalists claim that private players have leveraged flawed BE policies to their advantage, aligning the needs of the poor with profit interests. Consequently, a form of ‘antipolitics’ has sought to exclude environmental and social issues from the purview of BE.

Meanwhile, there are experts and advocates who call for the delinking of growth from the concept of Blue Economy—in other words, to aim for ‘de-growth’. These proponents argue that attempts to maintain current levels of economic growth are proving to be costly to the natural ecosystems.

Not only has rapid growth harmed the cause of conservation, environmentalists claim, an obsession with profits and prosperity is undermining the integrity of ocean systems. The rush to equate consumerism with modernity has compromised attempts to bridge the chasm between development and conservation.

A recent study of blue projects in Africa concluded that even as local governments sought to pursue marine development projects, coastal communities were largely excluded. Many governments, the same report noted, were seized of the enormity of environmental costs. The development of infrastructure at Kenya’s Lamu port, for instance, resulted in large-scale destruction of the habitat that the Kenyan government chose, seemingly, to overlook. In Tanzania, Sudan, South Africa and Mozambique, too, governments have failed to incorporate ecological and socio-cultural concerns into BE plans.

The study found that while they initially engaged with local communities, many African governments had failed to follow through on their promises. This is not to say that there have not been any success stories vis-à-vis BE. Small island developing states (SIDS) in the Indian Ocean have shown promise in sustainably using ocean resources while generating economic growth, jobs and social and financial inclusion, and preserving and restoring ocean ecosystems.

The Seychelles, for example, has launched a pioneering sovereign blue bond and secured the first-ever climate adaptation debt restructuring. Mauritius, too, has unveiled a roadmap to

consolidate the tourism, seaports, and fishing sectors while building up aquaculture, marine biotechnology, and renewable energy. Yet, for the vast majority of Indian Ocean and Pacific states, 'Blue Economy' remains an unfulfilled aspiration.

### Current Challenges to BE

**Overfishing:** The key problem with BE is resources regulation – in particular, of ocean fisheries, wildlife, and seabed resources. In many parts of the African coast, South Asia and in the Western Pacific, governments have given fishing communities much leeway in exploiting fisheries, leading to an increase in licensed and unlicensed fishing. With countries incentivising artisanal fisherfolk to switch to mechanised fishing, there has been a sharp decline in fish stocks. This has also led to a rise in harmful fishing practices like bottom trawling and seine net fishing that has damaged the marine ecology.

Indonesia offers lessons about the potential negative consequences of fishing subsidies. Jakarta has for years given significant subsidies to its fishers. In October 2020, the Indonesian parliament passed a law seeking to deregulate fishing: for one, it changed the definition of "small fisher" to include large operators, making them equally qualified to receive subsidies. Indonesian environmental activists claim that the new law gives foreign fishing vessels full access to the country's waters, potentially opening the door to the large-scale reclamation of marine ecosystems.

By allowing big industrial fishers to amass profits, it could irreparably harm the livelihoods of smaller, subsistence fisherfolk. Elsewhere In Southeast Asia, similarly flawed regulation and inadequate governance have resulted in a rapid decline of fish stocks. Across the region, 64 percent of the fisheries' resource base is reportedly at medium to high risk from overfishing, with Cambodia and the Philippines among the most heavily affected. Destructive fishing methods such as poison fishing, blast fishing, and bottom trawling have caused extensive destruction of fish stock and reefs. Increased levels of competition and conflict among fishers has adversely impacted economic and food security, reducing environmental sustainability.

For its part, India has drafted a fisheries bill that has also been criticised for its emphasis on resource exploitation, deep-sea fishing, and privatisation of open-access water bodies. Fishers' unions have opposed the draft policy, calling it "export-oriented, production-driven, and based on capital investments." There is apprehension that the fisheries bill, if passed into law, could strip small-scale fishers of their rights of access to commons, and in the long run, damage the environment.

Rather than enable smaller fishers to increase their catch in sustainable ways, conservationists say, the law could end up hurting their interests. Not only does the draft mistakenly assume that capital investment and intensive technology (in areas such as mariculture) will be affordable for smaller fisherfolk, it is also excessively focused on resource extraction and profit, neglecting the reality that poor fishers operate in a socio-economic system where livelihoods are not dependent on the cycle of investment and extraction. Already, there are reports that the quantity of landings of once abundant fish varieties, is rapidly declining.

## Marine Pollution

Another problem affecting the ecology of sensitive spaces is marine pollution. Shipping activity along the coastline and in the busy Sea Lanes of Communications (SLOCs) frequently contaminates the marine environment. It is not only the oil and residue discharge from cargo and feeder ships that pollutes the surroundings; an enormous load of synthetic trash generated on land is disposed of at sea, causing massive damage to the environment. Unfortunately, the region's countries have been unable to arrest the decline in marine health.

Notwithstanding nascent efforts to partner with international organisations such as the Global Environment Facility, the Asian Development Bank, and the Food and Agriculture Organization, countries have yet to come around to effectively addressing the challenge of marine pollution and destruction of the habitat.

The environmental neglect has been exacerbated by COVID-19. The pandemic has caused the dumping of thousands of tonnes of medical waste (in particular, face masks) into the sea. The release of large amounts of micro-plastics into the marine environment threatens to adversely impact marine fauna and flora.

## Ocean Governance

A third area of concern is ocean governance. As coastal communities expand and dependence on marine resources grows, governments have sought to put a comprehensive system in place to govern marine resources. Yet in vast swathes of the western and eastern Indian Ocean littorals, ocean governance has been inadequate. If South Asia has struggled with regulation and ocean finance, in larger parts of sub-Saharan and coastal Africa, countries lack the financial and technological capacity to harvest ocean assets. Coastal African states, in particular, have been plagued by the corrupt tendencies of the political elite.

An illustrative example of the neglect of marine governance is the inability of the region's states to deal with the issue of marine litter. One of the least discussed subjects on the BE agenda, marine debris has in recent years emerged as a vexing challenge, compounded by climate change. Having to cope with increasing uses from a variety of sources such as extractive industries, together with climate change, acidification, hypoxia, and chemical pollution, the oceans have had to absorb ever-increasing volumes of marine trash; by some estimates, for instance, 8 million tonnes of plastic every year end up in the oceans.

Yet, the focus of Asian governments continues to be on connectivity, port building, transport corridors and resource exploitation. India's own Sagarmala project, the centrepiece of New Delhi's BE initiative, prioritises port building and infrastructure construction over sustainable development. A recently announced "deep sea mission" seems intended at spurring deep-sea mining at the expense of marine conservation. Indeed, there are competing factors in the policy drafting process. On the one hand, blue legislation must seek investments in new areas of the ocean economy, creating economic lines of business, jobs and companies.

On the other hand, BE endeavours must seek to conserve and nurture existing marine ecosystems, and reduce pollution, overfishing, and habitat loss. The Maldives offers an instructive example of the dilemma policymakers must contend with. In 2016, as the Maldivian government began expanding economic opportunities through a much publicised ‘Blue Model’, it decided to invest in high-end beach tourism, reclaiming land to build hotels on some of the country’s many coral atolls.

This coincided with a period of severe coral bleaching caused by an El Niño phenomenon that spread warm water across oceans. After criticism from local groups, the government of Maldives reversed course to prioritise conservation, even managing to salvage some damaged corals. Ocean governance is also fundamental to maintaining the health of the marine habitat, and a vital prerequisite for the achievement of the Sustainable Development Goals (SDGs).

Experts say that a comprehensive ocean governance framework can balance sustainable economic activity and marine conservation, creating a positive impact on the lives of coastal communities. One way to boost conservation is to incorporate spatial zoning and Marine Spatial Planning (MSP) in ecologically sensitive zones.

The Australian government’s efforts at preserving the Great Barrier Reef is an interesting example. The GBR is internationally recognised for its natural and heritage value, and the Australian Government established a Marine Park under a special Act in 1975 to provide a legal regime for the protection of the natural and heritage values of the Reef.

The law provided many safeguards, but not enough to protect against the impact of climate change. In July 2021, when UNESCO’s World Heritage Committee considered classifying the Great Barrier Reef as an endangered natural site, committee members noted the Australian government’s inability to prevent mass coral bleaching events caused by rising ocean temperatures and global warming.

Following an appeal by Canberra, however, the committee suspended its decision until next year’s meeting. In part, the failure to protect the marine environment can be attributed to the absence of a cadre of trained personnel. Many Asian and African states have not invested in a skilled workforce to implement BE projects. Innovation and technological development in critical sectors has been lacking, and rarely have BE models been tested in field conditions. With limited ocean literacy, marine conservation has yet to receive the attention it truly deserves.

### Imperatives in Implementing BE

Blue Economy can only be expected to deliver results if it is implemented in ways that truly balance economic growth and sustainability. The countries of the Indo-Pacific need to harmonise their BE approaches to develop an integrated strategy. Beyond agreeing upon a common definition, syncing procedures and operating principles, countries must collectively invest in technology and innovation that would enable blue sectors to develop technologies to boost productivity. Whilst unlocking the seas’ latent potential, blue policies must outline measures for the regeneration of the natural habitat.

The first need is to create a knowledge economy to power the blue movement. Asian and African states need a strong scientific research and adequate ocean observations to deliver a sustainable ocean. By widening the participation of stakeholders in marine spatial planning, the region's governments can better organise ocean space across activities and time. Frameworks need to be evolved to devise policy for the sustainable harnessing of ocean resources.

Second, Indo-Pacific states must collaborate to create a more operational kind of ocean science to support sustainable economic goals. The application of ocean science to fisheries management can be used to protect and preserve endangered fish species. To respond to the challenges and demands of the blue economy, ocean technocrats must focus on development of knowhow, transfer of technology, and capacity development.

Beyond supporting evaluation and monitoring of fishing activity, ocean science can lay the foundation for a genuine ocean sustainability framework. Through new inter-state contracts between governments and their populations, between researchers and policymakers, these countries can ensure that the best efforts and investments are channeled to developing a sustainable ocean-based economy.

Third, governments must collectively focus on marine spatial planning, bringing together public and private stakeholders to analyse and allocate ocean space for competing human activities (i.e., tourism, renewable energy, fisheries, and conservation) in coastal and marine areas. This is an invaluable tool to facilitate sustainable uses of marine resources by de-conflicting activities in the maritime commons, mitigating adverse environmental impacts, and facilitating reasonable utilisation of marine resources.

Of particular utility is the participatory approach, involving fishing communities and local self-governance institutions. The United Nations has undertaken to support a new cooperative framework in the Ocean Decade (2021-2030) to ensure that global ocean science provides greater benefits for ocean ecosystems and wider society. The initiative is aimed at rallying ocean stakeholders behind a common framework to ensure safeguarding healthy, productive and resilient oceans through science-informed policy responses.

Fourth is the need for partnerships between littoral states that render fishing activity sustainable. Like European Union countries that have signed sustainable fisheries partnership agreements (SFPAs) with African and Western Indian Ocean countries, Indo-Pacific states must enter into legal arrangements for the fishing of surplus stocks in the exclusive economic zone (EEZ) of third countries. Fisheries management must be characterised by equal rules, scientific management, and social empowerment.

Environmental levies, catered for in fisheries agreements (such as in European pacts with Indian Ocean states) could enable conservation efforts on the Indo Pacific region. Fifth is the need to involve private enterprise in blue initiatives beyond activities aimed at resource exploitation. Private players must play a more significant role in supporting nascent projects in the region.

Governments must provide incentives to catalyse private investment in green infrastructure, technology, and innovative practices to reduce environmental risks and ecological stress,

enhance sustainable development and human well-being, and sustainably manage coasts and oceans. The framework for ocean governance must comprise of institutional processes and production and management systems that create new asset classes in ways that reduce investment risk, and help transition to a genuine blue economy.

Finally, the region's governments must clearly define BE priorities, making it easier to accept inevitable trade-offs between missions and time-frames. Stakeholders must set realistic targets, seeking to optimise use of green-friendly knowhow, processes, and raw materials.

Revenue streams must be identified to drive BE activities, and to develop technology that integrates viable forms of marine activity, including renewable energy, ecotourism, sustainable fisheries, and transport. The ultimate aim of BE must be to achieve a 'circular economy' that is regenerative by design and decouples growth from the consumption of finite resources.

## Conclusion

Blue Economy must be implemented in ways that preserve and nurture marine ecosystems. Indo-Pacific states must go beyond agreeing on common terms and the syncing of procedures and principles. Each must move to harmonise BE approaches to develop an integrated strategy that would harvest technology and innovation, boost BE productivity, and preserve marine ecosystems. While unlocking the seas' latent potential, BE policies should aim to regenerate the marine habitat.

The greater goal of BE, however, must be the integration of oceans with human society. Through the careful management of material and human resources, BE must seek to achieve the de-commodification of labour and the recovery of the common goods to protect diversity.

Indo-Pacific states must aspire for a viable mix of growth and sustainability, promote an equitable reduction in production and consumption, pursuing a socially transformative vision. Only a balanced approach will create the capacities needed to sustain the ocean and its resources.

## **India: Blue Economy is going to be an important source of AatmaNirbhar Bharat, says PM Modi**

<http://www.ddinews.gov.in/national/blue-economy-going-be-important-source-aatmanirbhar-bharat-says-pm-modi>

"Prime Minister, Narendra Modi has said that the development of the coastal areas and welfare of hardworking fishermen is one of the important priority of the Government. He outlined a multi-pronged plan for coastal area development comprising transforming the blue economy, improvement of coastal infrastructure and protecting the marine ecosystem. He was speaking after dedicating Kochi - Mangaluru Natural Gas Pipeline to the Nation through a video conference today.

As the Prime Minister was speaking to the two coastal states of Kerala and Karnataka, he spoke at length about his vision of fast and balanced coastal area development. He said that a

comprehensive plan for the development of the blue economy in the coastal states like Karnataka, Kerala and other South Indian states is under implementation. He said the Blue Economy is going to be an important source of Aatmanirbhar India. Ports and coastal roads are being connected with a focus on multi-modal connectivity.

We are working with an aim to turn our coastal region into a role model of ease of living and ease of doing business, said the Prime Minister. The Prime Minister touched upon the fisherman communities in the coastal areas who are not only dependent on the ocean wealth but also are the guardian of the same. For this, the Government has taken many steps to protect and enrich the coastal ecosystem. Coastal infrastructure is being improved to meet the demand of the rising needs and aspirations.

Steps like helping fishermen with deep sea fishing, separate fisheries department, providing affordable loans and Kisan Credit Cards to the people engaged in aquaculture are helping both entrepreneurs and general fishermen. The Prime Minister also talked of the recently launched 20 thousand crore MatasyaSamapadaYojna which will directly benefit lacs of fishermen in Kerala and Karnataka. India is progressing rapidly in the fishery related exports. All steps are being taken to turn India into a quality processed sea-food hub. India can play a major role in fulfilling the growing demand of seaweed, as farmers are being encouraged for seaweed farming.

#### **India: Blue economy: Focusing on fisheries sector for optimum growth**

<https://economictimes.indiatimes.com/small-biz/sme-sector/blue-economy-focusing-on-fisheries-sector-for-optimum-growth/articleshow/81043454.cms>

"Owing to its massive coastline of over 8,000 km and a vast network of rivers, fisheries have always played a significant role in India's economy. Currently, this sector provides livelihood to more than 2.8 crore people within the country. Nevertheless, this is a sector with untapped potential. The Economic Survey of India, 2019-20 estimated that, only 58% of the country's inland potential has been tapped so far. The present budget has taken effective steps towards addressing the challenges and optimizing the potential of this sector.

Despite challenges pertaining to infrastructure, the measures by the Central government in the past six years ensured that fisheries sector continued to register an annual growth rate of more than 10 percent. In 2019-20, with an overall production of 142 lakh tons, India produced 8% of the global share. During the same time period, India's fisheries exports stood at Rs 46,662 crore, constituting about 18% of India's agricultural exports.

In keeping with our Sustainable Development Goals (SDG)-effective governance of 'Blue Economy' would mean striking a balance between effectively utilizing fisheries to meet consumer demands and sustain livelihoods of fishing communities on one hand and preserving the ecosystem on the other. The Centre through its schemes envisions leveraging an investment of more than Rs. 50,000 crore in the next ve years that includes contributions from states, beneficiaries, and financial institutions.

The recently concluded Blue Revolution Scheme launched in 2015-16 with Rs.3000 crore outlay, for over five years, made vital contributions towards the sector's development. To address the critical gaps in fisheries infrastructure, the government created the Fisheries and Aquaculture Infrastructure Development Fund in 2018-19 with an outlay of Rs. 7,522 crore.

The fisheries sector has witnessed three major transformations in the last few years: 1) The growth of inland aquaculture, specifically freshwater aquaculture. 2) The mechanization of capture fisheries. 3) The successful commencement of brackish water shrimp aquaculture. Prime Minister Narendra Modi recently launched the Pradhan Mantri Matsya Sampada Yojana (PMMSY) with an investment of over Rs 20,000 crore for five years towards the sector's development. As compared to last year there has been a 34% increase in the budget for fisheries sector in 2021-22.

In addition to the increase in allocation for 2021-22, certain other announcements were made in the budget to provide additional impetus to Matsya Sampada: 1. The development of five major fishing harbours (Kochi, Chennai, Visakhapatnam, Paradip, Tuticorin) as hubs of economic activity. This announcement envisages development of world class infrastructure and amenities including measures required for reducing post-harvest losses. This would benefit development of fisheries-based industries including value added industries and higher realisation of prices for the fish caught. Further, export potential from these modernised harbours is expected to rise by 10% to 15%, creating around 50,000 direct and indirect jobs.

2. The second announcement regarding development of inland fishing harbours and fish landing centres is the first ever government support for such an activity. This will benefit lakhs of traditional inland fishermen dependent on fishing in Ganga and Brahmaputra for their livelihood. The development will be one of the steps to realise the call to transform 'Namami' Ganga to 'Arth' Ganga.

3. The third announcement was about the establishment of a unique multipurpose seaweed park in Tamil Nadu. The proposed park would be the center of production for quality seaweed-based products, developed on a hub and spoke model. This project is expected to provide enormous scope for engaging women from villages and increasing their income.

This year's budget will pave the way for further growth of the sector and bridge critical gaps through demonstrative activities and technology infusion, propelling a horizontal and vertical growth. This budget is an initiative to realise the vision of the Prime Minister to double our fish production, transforming Matsya Sampada with Matsya Samridhi by creating wealth and prosperity in the fishing community.

### **India: Cabinet approves Deep Ocean Mission**

<https://goachronicle.com/cabinet-approves-deep-ocean-mission/>

"The Cabinet Committee on Economic Affairs chaired by Prime Minister Narendra Modi, has approved the proposal of Ministry of Earth Sciences (MoES) on "Deep Ocean Mission", with a view to explore deep ocean for resources and develop deep sea technologies for sustainable use

of ocean resources. The estimated cost of the Mission will be Rs. 4077 crore for a period of 5 years to be implemented in a phase-wise manner. The estimated cost for the first phase for the 3 years (2021-2024) would be Rs.2823.4 crore.

Deep Ocean Mission will be a mission mode project to support the Blue Economy Initiatives of the Government of India. Ministry of Earth Sciences (MoES) will be the nodal Ministry implementing this multi-institutional ambitious mission. The Deep Ocean Mission consists of the following six major components:

\* Development of Technologies for Deep Sea Mining, and Manned Submersible: A manned submersible will be developed to carry three people to a depth of 6000 metres in the ocean with suite of scientific sensors and tools. Only a very few countries have acquired this capability. An Integrated Mining System will be also developed for mining Polymetallic Nodules from 6000 m depth in the central Indian Ocean. The exploration studies of minerals will pave way for the commercial exploitation in the near future, as and when commercial exploitation code is evolved by the International Seabed Authority, an UN organization. This component will help the Blue Economy priority area of exploring and harnessing of deep sea minerals and energy.

\* Development of Ocean Climate Change Advisory Services: A suite of observations and models will be developed to understand and provide future projections of important climate variables on seasonal to decadal time scales under this proof of concept component. This component will support the Blue Economy priority area of coastal tourism.

\* Technological innovations for exploration and conservation of deep-sea biodiversity: Bio-prospecting of deep sea flora and fauna including microbes and studies on sustainable utilization of deep sea bio-resources will be the main focus. This component will support the Blue Economy priority area of Marine Fisheries and allied services.

\* Deep Ocean Survey and Exploration: The primary objective of this component is to explore and identify potential sites of multi-metal Hydrothermal Sulphides mineralization along the Indian Ocean mid-oceanic ridges. This component will additionally support the Blue Economy priority area of deep sea exploration of ocean resources.

\* Energy and freshwater from the Ocean: Studies and detailed engineering design for offshore Ocean Thermal Energy Conversion (OTEC) powered desalination plant are envisaged in this proof of concept proposal. This component will support the Blue Economy priority area of off-shore energy development.

\* Advanced Marine Station for Ocean Biology. This component is aimed as development of human capacity and enterprise in ocean biology and engineering. This component will translate research into industrial application and product development through on-site business incubator facilities.

This component will support the Blue Economy priority area of Marine Biology, Blue trade and blue manufacturing. The technologies required for deep sea mining have strategic implications

and are not commercially available. Hence, attempts will be made to indigenise technologies by collaborating with leading institutes and private industries.

A research vessel for deep ocean exploration would be built in an Indian shipyard which would create employment opportunities. This mission is also directed towards capacity development in Marine Biology, which will provide job opportunities in Indian industries. In addition, design, development and fabrication of specialised equipment, ships and setting up of required infrastructure are expected to spur the growth of the Indian industry, especially the MSME and Start-ups. Oceans, which cover 70 percent of the globe, remain a key part of our life. About 95 percent of Deep Ocean remains unexplored. For India, with its three sides surrounded by the oceans and around 30 per cent of the country's population living in coastal areas, ocean is a major economic factor supporting fisheries and aquaculture, tourism, livelihoods and blue trade. Oceans are also storehouse of food, energy, minerals, medicines, modulator of weather and climate and underpin life on Earth. Considering importance of the oceans on sustainability, the United Nations (UN) has declared the decade, 2021-2030 as the Decade of Ocean Science for Sustainable Development. India has a unique maritime position. Its 7517 km long coastline is home to nine coastal states and 1382 islands. The Government of India's Vision of New India by 2030 enunciated in February 2019 highlighted the Blue Economy as one of the ten core dimensions of growth.

India: Centre invites stakeholders' comments on National Fisheries Policy

<https://www.newindianexpress.com/business/2021/mar/23/centreinvites-stakeholders-comments-on-national-fisheries-policy-2280461.html>

"A 'National Fisheries Policy 2020' has been formulated and placed in the public domain, inviting suggestions from stakeholders, the government informed Parliament on Tuesday. Minister of State for Fisheries Pratab Chandra Sarangi, in his written reply to the Lok Sabha, said the draft policy provides vision and strategies of the government towards overall and sustainable development of the fisheries sector in the country for the next ten years.

The government has already received comments on the draft policy from about 14 states and Union territories, including West Bengal, Tamil Nadu, Andhra Pradesh, Goa, Karnataka and Odisha, he said. The minister said that the draft policy has been translated into 11 vernacular languages and states have been asked to circulate it among stakeholders, including fishermen associations in order to obtain their comments. The draft policy provides guiding principles, strategies and a roadmap towards holistic development of the fisheries sector in the country. The minister also said that the government is implementing a flagship scheme ""Pradhan Mantri Matsya Sampada Yojana (PMMSY)"" to bring about the Blue Revolution through sustainable and responsible development of the fisheries sector in India with an investment of Rs 20,050 crore for a period of five years, in effect from the financial year 2020-21.

**India: Centre to certify shrimp farms**

<https://www.thehindu.com/news/national/certification-scheme-to-encourage-good-aquaculture-practices/article34295794.ece>

"To bolster confidence in India's frozen shrimp produce, the country's biggest seafood export item, the Centre has kicked off a new scheme to certify hatcheries and farms that adopt good aquaculture practices. India exported frozen shrimp worth almost \$5 billion in 2019-20, with the U.S. and China its the biggest buyers. But a combination of factors had hurt export volumes in recent months, including container shortages and incidents of seafood consignments being rejected because of food safety concerns.

"We have seen some recent consignments sourced from Indian shrimp farms being rejected due to the presence of antibiotic residue and this is a matter of concern for exporters," a Commerce Ministry official said. The Marine Products Exports Development Authority (MPEDA) has developed a certification scheme for aquaculture products called 'Shaphari', a Sanskrit word that means superior quality of fishery products suitable for human consumption.

"We already have a National Residue Control Programme for food safety issues in farm produce and pre-harvest testing system in place, but this certification was proposed as a market-based tool for hatcheries to adopt good aquaculture practices and help produce quality antibiotic-free shrimp products to assure global consumers," the official said. Frozen shrimp is India's largest exported seafood item. It constituted 50.58% in quantity and 73.2% in terms of total U.S. dollar earnings from the sector during 2019-20.

Andhra Pradesh, West Bengal, Odisha, Gujarat and Tamil Nadu are India's major shrimp producing States, and around 95% of the cultured shrimp produce is exported. "Overall, certified aquaculture products will help exporters to export their consignments to markets under stringent food safety regulations without the fear of getting rejected," the Ministry official explained.

The Shaphari scheme is based on the United Nations' Food and Agriculture Organization's technical guidelines on aquaculture certification and will have two components — certifying hatcheries for the quality of their seeds and, separately, approving shrimp farms that adopt the requisite good practices.

The certification of hatcheries will help farmers easily identify good quality seed producers. Those who successfully clear multiple audits of their operations shall be granted a certificate for a period of two years. "The entire certification process will be online to minimise human errors and ensure higher credibility and transparency," the official said, adding that guidelines for certification of farms are under preparation in consultation with stakeholders.

India: Centre to extend Rs 6,000 farmers' dole to fisher families

<https://www.newindianexpress.com/states/kerala/2021/mar/29/centre-to-extend-rs-6000farmers-dole-to-fisher-families-2282917.html>

"Defence Minister Rajnath Singh on Sunday said the Centre will provide an assistance of Rs 6,000 per year to fishermen on the lines of the aid currently given to farmers under the Prime Minister Kisan Samman Nidhi scheme. The BJP's manifestos in Bengal and Puducherry have

already promised to replicate the annual assistance of Rs 6,000 given to farmers for fishermen as well if it comes to power.

“Under the PM Kisan Samman Nidhi, our government is transferring Rs 6,000 per year to the bank accounts of farmers across the country. We will also transfer Rs 6,000 to the bank accounts of fishermen and effectively implement the Central scheme,” said Rajnath, who was in Thiruvananthapuram as part of the NDA’s campaign for the assembly elections.

### **India: Centre unveils draft ‘Blue Economy’ policy**

<https://www.thehindu.com/news/national/centre-unveils-draft-blue-economy-policy/article33680029.ece>

"India should deploy a dedicated satellite system for tracking and managing its fisheries sector. It should expand its patrolling in the high seas and put in place a 30-year “holistic” shipbuilding plan under the Atmanirbhar initiative to give a boost to shipping and shipbuilding sector, recommends a draft policy prepared by multiple committees and led by the Prime Minister’s Economic Advisory Council. (PM-EAC).

The draft is part of India’s ‘Blue Economy’ Framework. This refers to tapping the economic potential from India’s oceans and also includes allied activities such as coastal tourism, mariculture, fisheries and deep-sea mining. Currently a “conservative” estimate of the size of the Blue Economy is about 4% of the Gross Domestic Policy, the report notes. India’s 7,517 km long coastline is home to nine coastal States and 1,382 islands.

With 12 major ports and 187 non-major ports, handling about 1,400 million tonnes of cargo, 95% of India’s trade by volume transits by sea. India’s Exclusive Economic Zone of over two million square kilometres is rich in living and non-living resources and holds significant recoverable resources of crude oil and of recoverable natural gas. The coastal economy also sustains over 4 million fishermen and other coastal communities.

“With these vast maritime interests, the Blue Economy in India has a vital relationship with the nation’s economic growth,” said the report. The Ministry of Earth Sciences had drafted a similar policy in 2015 but was not finalised.

The present report was prepared by seven committees that had government representatives as well as private organisations such as the Resource Information System for Developing Countries (RIS), the National Maritime Foundation (NMF), The Energy and Resource Institute (TERI), the Federation of Indian Chambers of Commerce & Industry (FICCI) and the Indian Ocean Rim Association (IORA).

**The Group noted that while there is significant potential for tourism, it was necessary to curb uncontrolled and unplanned tourist activities that cause stress on the carrying capacity of coastal ecosystems, especially those on fragile island territories. India: CIFA aims to boost prawn Scampi farming**

<https://www.dailypioneer.com/2021/state-editions/cifa-aims-to-boost-prawn-scampi-farming.html>

"The ICAR-CIFA has signed MoU with the selected three-multiplier scampi hatcheries on October 4 2021. ICAR-CIFA shall provide brood seed of 'CIFA-GI Scampi' to the selected hatcheries for brood raising and seed production in the upcoming season. CIFA has developed the selective breed of giant freshwater prawn, *Macrobrachium rosenbergii* registered as 'CIFA-GI ScampiTM'.

India was a major producer of the Scampi till 2005; however since then use of poor-quality seed by the farmers resulted in smaller harvest size and low survival in grow out ponds and poor returns to the farmers, which led to the decline in the production. In order to revive the farming of scampi, the ICAR-CIFA) in collaboration with the WorldFish (an international research organisation headquartered in Malaysia) has started a systematic selective breeding programme for improving the growth rate of *M. rosenbergii* in 2007.

The base population with wide genetic base for the selective breeding was formed using populations of scampi from three geographically distant locations in India (Gujarat, Kerala and Odisha). The new developed strain has got a registered trademark as 'CIFA-GI Scampi' in 2020. Recently, the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, through the Pradhan Mantri Matsya Sampada Yojana sanctioned ICAR-CIFA with a central sector scheme on 'Scaling up of genetic improvement programme of *M. rosenbergii*'.

Under the project, ICAR-CIFA has selected three scampi hatcheries in Andhra Pradesh as multiplier units of the improved breed. "It is expected that the selected scampi hatcheries will produce large quantities of improved seed 'CIFA-GI Scampi' for supply to farmers across India which in turn help in higher production and income for farmers," said Director, ICAR-CIFA Dr Saroj Kumar Swain.

### **India: CIFT develops technology for converting fish waste into aqua feed**

<https://www.thehindubusinessline.com/economy/agri-business/cift-develops-technology-for-converting-fish-waste-into-aqua-feed/article36093758.ece>

Handling of fisheries waste in harbours and fish markets will not be a concern for local bodies any more. In a major relief, a technology has been developed by the Central Institute of Fisheries Technology (CIFT) to address the menace of fisheries waste into fish feeds, thereby providing viable income opportunities.

ICAR-CIFT's technology will help convert fish waste in to aqua feeds and it was developed with the twin objective of meeting the high demand for fish feed in aquaculture sector and also to do away with existing unhygienic fish waste management practices. Considering the importance of such a technology in Kerala's fisheries sector, Matsyafed has signed an MoU with CIFT for taking the technology for production and marketing.

CIFT Director Ravishankar CN handed over the Transfer of Technology and Machinery to the Managing Director of Matsyafed, Dinesan Cheruvat. Ravishankar urged Matsyafed to upscale the technology dissemination through PMMSY so that a large number of start-ups can have a access to the technology and to take it up as a business venture.

Lauding the contribution of CIFT in developing industry-ready technologies, Dinesan Cheruvat said the institute has been playing a pivotal role in propelling the growth of fisheries sector through its cutting-edge technologies. Fish waste, which is generally considered as a nuisance by both public and local bodies is an excellent source of protein.

It can very well replace fish meal for using as a feed, thereby reducing the production cost of aquaculture in a big way. Keeping pace with the surge in the production of cultured fish in the country, there is a huge demand for cheap protein ingredients for aqua feed. CIFT has come-up with a simple technology for the conversion of wet market waste directly to aqua and poultry feed rich in protein and minerals.

So far, the institute has demonstrated the technology in 40 fish markets in different states. The institute has also developed a machinery line for the feed production, costing around Rs.15 lakh, with a capacity to produce 500-kg of feed per day.

### **India: CIFT gets globally recognised accreditation for testing seafood**

<https://www.thehindu.com/news/cities/Kochi/cift-gets-globally-recognised-accreditation-for-testing-seafood/article38393439.ece>

"The Central Institute of Fisheries Technology under the Indian Council of Agricultural Research (ICAR), which was accredited by the National Accreditation Board for Testing and Calibration Laboratories (a constituent board of the Quality Council of India), has now been given the NABL-FSSAI integrated accreditation, which will help boost the image of Indian seafood in the international market. CIFT was the first research institute under ICAR to be accredited by NABL.

CIFT's unique distinction of having integrated accreditation, which is valid for two years, was conferred on December 15, 2021. Leela Edwin, acting director of CIFT, said the integrated accreditation extended the scope for testing 380 parameters with respect to chemical, biological, and mechanical components of water, fish and fisheries products, feed, gear materials and packaging materials in line with the national and international quality standards.

She said seafood exports required mandatory testing of water, packaging materials and fish products to match the quality standards set y the importing countries. The test certification accredited by the NABL was a global recognition, a pre-requisite for export purposes. ICAR-CIFT with its high-end laboratory facilities and well-experienced NABL team in Kochi, has taken the responsibility for testing for antibiotics, pesticide residues, heavy metal presence, biotoxins in finfish and shelfish, harmful contaminants, food additives and the like in addition to testing for bacterial pathogens and infectious viruses in fish.

CIFT is also accredited for the testing of paper, plastic, paper board, plastic films, fishing gear and materials for various quality parameters. CIFT was earlier notified as the National Referral Laboratory for fish and fishery products during 2017. The ICAR institute was also conferred with the status of National Reference Laboratory for fish and fish products in 2019 by the Food Safety and Standards Authority of India under the Ministry of Health and Family welfare.

Dr. Edwin, who recently assumed charge as acting director of CIFT, is the head of the Fishing Technology Division and succeeds Dr. Ravishankar C.N., who took charge as the director and Vice Chancellor of ICAR-Central Institute of Fisheries Education, Mumbai, said a communication. Her PhD thesis won the Jawaharlal Nehru Award 2000 for the best PhD thesis in fisheries sciences in India. She has also won a National Award for Technology Innovation (runner-up) in the field of polymer science and technology.

### **India: CIFT to collaborate with Norway for fuel transition in seafood sector**

<https://www.thehindubusinessline.com/news/cift-to-collaborate-with-norway-for-fuel-transition-in-seafood-sector/article37819152.ece>

"The Kochi based ICAR-Central Institute of Fisheries Technology (CIFT) has been awarded a project on Future Refrigeration in India for spearheading the fuel transition in seafood sector. The project named 'Indee+' assumes significance especially at a time when the demand for transition from present high carbon discharging fuel components to zero carbon emission is on the rise and with the latest global norms are in favour of it.

It is an umbrella project covering several dedicated schemes supporting the Indian refrigeration and air conditioning sector in the transition towards cleaner and green technologies. It is coordinated by Norwegian University of Science and Technology (NTNU) and the Indian partners are CIFT, Kochi, IIT Chennai, BITS, Pilani, and IISc Bengaluru. 26th International Climate Conference In the seafood sector, the project aims to promote CO2 based refrigeration and heating systems and phase out the current refrigerants with natural, clean and safe refrigerants.

This will thus be the Indian fisheries sector's commitment towards achieving net zero carbon emission by 2070 as pledged by the Prime Minister at the 26th International Climate Conference in Glasgow. A two-day workshop on "Future Refrigeration India" was held at CIFT which was addressed by the institute director Ravishankar CN.

The workshop highlighted the implication of climate change to the society and adaptation of scientific methods and research to prevent global warming and ozone depletion. In the workshop, a sensitization program was also organized for the stakeholders on the installation of carbon-dioxide based clean refrigeration systems with special focus on cooling and heating requirements in seafood industries and fishing vessels.

### **India: Climate change is making India's west coast more vulnerable to cyclones**

<https://eos.org/articles/climate-change-is-making-indias-west-coast-more-vulnerable-to-cyclones>

"The northern Indian Ocean consists of two seas: the Bay of Bengal to the east and the Arabian Sea to the west. Historically, tropical cyclone activity in the Bay of Bengal is generally higher than that in the Arabian Sea. But new research showed a shift in this trend. Researchers found that between 1982 and 2019, there was a significant increase in the frequency, duration, and intensity of cyclonic storms over the Arabian Sea.

Specifically, they noted a 52% increase in the frequency of cyclonic storms, an 80% increase in their duration, and an increase in intensity of about 20% in the premonsoon period and 40% postmonsoon. In addition, researchers documented a tripling of the accumulated cyclone energy in the Arabian Sea. The study was published in *Climate Dynamics*.

"We studied data covering about 38 years by dividing [the period] into two epochs of 19 years each. In the Arabian Sea, we found that the intensity, frequency, and duration [are] increasing, but in the Bay of Bengal there has been no significant change," said Medha Deshpande, lead author of the study and a scientist at the Indian Institute of Tropical Meteorology (IITM).

Reasons for the increase in cyclonic activity in the Arabian Sea include increases in sea surface temperature and tropical cyclone heat potential. Both measures are reliable indicators of climate change.

#### Warming seas and cyclonic activity

The recent Sixth Assessment Report by the Intergovernmental Panel on Climate Change (IPCC) showed that the Indian Ocean is experiencing the world's fastest rate of ocean surface warming. Roxy Mathew Koll is a climate scientist at IITM, a coauthor of the new study, and a reviewer of recent IPCC reports. He explained that in the Indian Ocean, the Arabian Sea showed temperature changes reaching up to 1.2°C–1.4°C over the past 20 years.

"Compared to global ocean surface warming of 0.8°C–0.9°C, this is quite large," he said. A warmer Arabian Sea means more heat for cyclones to draw energy from. It also means more moisture for cyclones to feed on. So warming seas allow for the genesis and maintenance of severe cyclonic storms.

#### Disaster preparedness, mangroves, and free-flowing rivers

On the basis of past cyclone tracks, Koll listed the Indian states and territories that may be most affected by increased activity: Lakshadweep, Gujarat, Maharashtra, Karnataka, and Kerala. Lakshadweep, composed entirely of tiny islands hundreds of kilometers off the coast of Kerala, is particularly vulnerable.

The archipelago's very survival has come under serious questioning given the threats posed by cyclonic activity, sea level rise, and coastal erosion. Experts said one manner in which states could prepare for the onslaught by cyclone is by conserving mangrove ecosystems. Such techniques also have benefits for climate adaptation and disaster risk reduction.

Detailing the benefits mangroves offer, Koll said they reduce the impact of winds and flooding during cyclones and can regrow following cyclonic damage. In addition to mangrove conservation, “we need to allow rivers to bring fresh water, sediments, and nutrients to estuaries and deltas,” said Jagdish Krishnaswamy, a senior fellow at the Suri Sehgal Centre for Biodiversity and Conservation, Ashoka Trust for Research in Ecology and the Environment. Krishnaswamy, also a coordinating lead author of the IPCC report, was not involved in the new study.

Low-lying coastal areas depend on such sediment flow from rivers to offset soil erosion into the sea. India’s west coast is a very narrow strip of land abutted by the mountains of the Western Ghats, leaving its population “highly vulnerable to disasters because of sea level rise, reduced sediment flow because of dams upstream, and increasing cyclonic activities,” Krishnaswamy noted.

Overall, Krishnaswamy said, the increased vulnerability of the west coast to cyclonic activity demands that developmental plans (including the country’s Coastal Regulation Zone notification system) take the effects of climate change into consideration. In particular, he stressed that natural climate infrastructure like mangroves be given more attention to enhance resilience to flooding and storms.

### **India: Climate change will deeply affect India’s migrant workers**

<https://thewire.in/labour/climate-change-will-deeply-affect-indias-migrant-workers-planners-must-recognise-that>

"The recently published Lancet Countdown on Health and Climate Change report, based on the research of scholars from 38 academic and UN institutions, found India to be one of five countries where vulnerable populations had the highest exposure to heatwaves (person-days of exposure) over the past five years.

Factoring in 44 indicators exposing an unabated rise in the health impact of climate change, the report describes India and Brazil as having had the biggest absolute increase in heat-related mortality in 2018-2019, and that the country was 15% more vulnerable to extremes of heat in 2019 as compared to 1990 and had the largest increase in wildfire exposure (alongside China and Democratic Republic of Congo).

The Lancet report reinforces that India is set to be among the worst sufferers of climate change-induced heatwaves. It becomes crucial to foreground how deepening ecological vulnerabilities and extreme weather events disproportionately affect India’s workforce – through forced displacement leading to increased rural-urban migration, and megacities’ infrastructural inadequacy in providing refuge even to existing migrant populations.

Climate breakdown, often a key factor in the destruction of rural income-generating activities (agriculture, fisheries, forestry), causes forced displacement to urban areas. Mass migration due to both sudden-onset disasters like flash floods and long-term effects of climate change is already underway – a December 2020 study recorded 14 million people forced to migrate within India in

2020 due to slow-onset impacts, including sea level rise, water stress, crop yield reductions, drought and ecosystem loss. Assuming that the country will adhere to its greenhouse gas mitigation pledges, it'll be over 45 million by 2050.

The COVID-19 migrant exodus exposed how ecological or public health crises are exacerbated by the weak foundations of India's urbanism. Unable to afford participation in formal land and housing markets, migrant workers are mostly relegated to informal settlements and urban peripheries unprotected from climate hazards.

The Lancet report's findings highlights demands made by extreme weather events like heat waves on urban housing – dense settlements with no open green spaces, no structural planning or design to cope with rising temperatures and trapped heat, and the unaffordability of cooling mechanisms. Lack of risk-reducing infrastructure, including sanitation and clean water, and insecurity of tenure are pre-existing vulnerabilities preventing realistic climate change mitigation or adaptation.

As climate change-induced demands on urban housing rise, planning and governance mechanisms remain unprepared for the migration influx. The state has increasingly receded from housing in post-liberalisation India, shifting its focus to mortgage financing, although some public housing was constructed via urban renewal programmes.

However, ensuring the 'right to the city' is more complicated than merely creating 'flagship' housing programmes. The Pradhan Mantri Awas Yojana (Urban) "Housing for all by 2022" Mission has excluded the most vulnerable. Owning land is a prerequisite for availing two out of its four types of benefits.

Plans to prepare cities for heat waves and floods are rendered inadequate by the obscuring of the needs of informal settlements. For example, the Draft Delhi Master Plan 2041's imagination of urban regeneration is that of gentrification. It ignores the dense layout of unauthorised colonies, and of possible displacement of residents vulnerable to exploitation by developers and market forces.

Even at the national level, the Affordable Rental Housing Complexes (ARHC) scheme, part of lockdown relief to migrants and informal workers in 2020, retrofitted vacant public housing ? just 88,236 rental units nationwide, far short of the requirement. An August 2021 survey report on ARHC by Working People's Charter, Centre for Policy Research and India Housing Report, shows that it doesn't actually address the problem of migration and housing.

### **India: Climate change will force transboundary fish stocks to move from habitats, migration paths: Report**

<https://www.downtoearth.org.in/news/climate-change/climate-change-will-force-transboundary-fish-stocks-to-move-from-habitats-migration-paths-report-81291>

"Fish stocks that move across two or more exclusive economic zones (EEZ) would be greatly impacted by climate change, according to a new study. By 2030, 23 per cent of the

transboundary fish stocks would have shifted, it said. Around 78 per cent of the world's EEZs would see at least one shifting stock, the paper published in *Global Change Biology* noted. “By 2100, a total of 45 per cent of fish stocks are expected to shift from their historical habitats and migration paths globally and 82 per cent of EEZ waters would experience at least one shifting stock, according to Timing and magnitude of climate-driven range shifts in transboundary fish stocks challenge their management.

Catch proportion of transboundary fish stocks would see a major change and scientists from the University of Columbia said that by 2030 the global exclusive economic zones would experience an average change of 59 per cent in the proportion of the catch. Many countries that are highly dependent on fisheries for livelihood and food security would emerge as hotspots for transboundary shifts. These hotspots would see early shifts in the distribution of a great number of important transboundary fish stocks. This can lead to conflicts between countries, the report highlighted.

The study revealed that 4,119 transboundary fish stocks would experience a range shift beyond historical natural variability by 2100 and this corresponded to 45 per cent of the studied stocks. Projections show that the first shift must have occurred in 2006. Exclusive economic zones of Latin America, the Caribbean, Melanesia and Polynesia are set to experience shifts significantly earlier as water temperatures increase.

Countries in northern Europe and eastern Asia would experience range shifts later. In some countries like Ireland, shifting stocks would account for less than 1 per cent of fishing revenue, while in others like the Marshall Islands, over 90 per cent of the fishing revenue would be affected. Juliano Palacios-Abrantes, lead author, said: We will see even more dramatic changes by 2030 and onwards, given current emissions rates. Many of the fisheries management agreements made to regulate shared stocks were established in past decades, with rules that apply to a world situation that is not the same as today.

A study published in *Advances in Atmospheric Sciences* said that the world ocean in 2021 was the hottest ever recorded by humans and the 2021 annual ocean heat content value was even higher than the 2020 record value by at least 14 zettajoules. In the seven maritime domains — Indian Ocean, South Atlantic, North Atlantic, Northwest Pacific, North Pacific, Southern oceans and the Mediterranean Sea — robust warming was observed but with distinct inter-annual to decadal variability.

Four out of seven domains showed record high heat content in 2021. As a result of changing ocean conditions, many marine species are shifting their habitat to remain within their optimal environmental niche. A study published in July 2008 in the *Journal of Applied Ecology* looked at the distributional response of North Sea bottom-dwelling (demersal) fishes to temperature change over a period of 25 years (1980-2004).

The rate of deepening of the whole assemblage was 3.6 metres per decade and for individual species range up to 10 metres per decade. Existing international fisheries agreements need to be looked into for their capacity to address the social and ecological implications of climate change-driven transboundary shifts. This is needed to limit the potential conflicts between the countries.

## **India: Climate Change: These Indian cities may drown in future due to rise in sea level**

<https://www.dnaindia.com/india/report-climate-change-ipcc-report-these-indian-cities-mumbai-kolkata-chennai-go-a-may-drown-in-future-due-to-rise-in-sea-level-2905114>

"The climate change report by the IPCC said global warming is dangerously close to spiralling out of control and it could result in rising sea levels across the world, including India. This, as a result, could lead to the submersion of several coastal regions of Earth. Here's how the top cities of India are going to be affected by rising in temperature in the coming years:

### **Mumbai**

The financial capital of India, Mumbai will be one of the worst affected coastal regions by global warming. According to a report by India Times, in the coming times, almost 65 percent of Mumbai will be submerged. The areas that are at the risk of getting drowned are Colaba, Bandra as well as most suburbs to the west part of Mumbai.

### **Goa**

The coastal state of Goa, which is famous for its beach vacations, will also witness a considerable rise in sea levels by 2050, and areas like Mapusa, Chorao Island, Mulgao, Corlim, Dongrim will be the most affected. However, according to reports, most regions in South Goa will remain intact.

### **Kolkata**

Kolkata will be impacted the most by the rise of sea-level rise as most of the areas of the capital of West Bengal, including Baranagar, Rajpur Sonarpur, and regions surrounding Howrah like Santragachi, Balitikuri is feared to be drowned.

### **Chennai**

While several coastal areas of Tamil Nadu, like Chidambaram, Mahabalipuram, Kalpakkam, Marakkanam, Chunampet, Thiruporir, Velachery are at risk of getting flooded due to rise in sea level, reports say that almost 45 percent of the state capital, Chennai is expected to be impacted the most. The northern regions of Chennai like Ennore, Minjur, and Pulicat are feared to be impacted.

## **India: Climate migration predicted to rise amid extreme weather**

<https://www.aljazeera.com/news/2021/10/26/india-climate-change-migration-poverty-extreme-weather>

"A rise in extreme weather events in India – from droughts and floods to heatwaves and hailstorms – is fuelling climate migration as the nation's poorest are forced to abandon their

homes, land and livelihoods, researchers say. In a survey of more than 1,000 households across three Indian states published on Tuesday, nearly 70 percent of respondents said they migrated immediately after such weather disasters occur, found the International Institute for Environment and Development (IIED). Seasonal migration was high among people affected by droughts and floods that damaged crops, or by cyclones that hampered fishing, according to the study, one of the first to quantify the impacts of climate change on migration in India.

Many of India's poorest people – such as small farmers – are finding it harder to cope with the damage caused by severe weather as the country braces for rising sea levels, more heatwaves and fiercer cyclones, researchers said. “The scale of climate migration is startling,” said Ritu Bharadwaj, a senior researcher at IIED and co-author of the report. “We cannot afford to pretend this isn't happening.”

“Droughts, rising sea levels and flooding are heaping extra pressure onto people who are already struggling to get by, forcing them from their homes in order to survive.” The Global Climate Risk Index 2021, an annual ranking from research group Germanwatch, puts India among the top 10 countries most affected by climate change. In 2020 alone, India suffered its worst locust attack in decades, three cyclones, a nationwide heatwave and flooding that killed hundreds of people and forced thousands more to migrate.

“The limits to people's resilience have been breached by more frequent and intense weather,” Bharadwaj told the Thomson Reuters Foundation. “Communities are not able to cope and recover easily. The loss and damage they suffer is very high and they migrate because they have reached the stage of hopelessness.” India's first climate change assessment report, published in 2020, projected that temperatures would rise 4.4 degrees Celsius (40 degrees Fahrenheit) by the end of the century in a “business as usual” scenario.

The frequency of heatwaves will be up to four times higher, cyclone intensity will increase and sea level will rise by 30 cm (12 inches) if action is not taken, the report said. Researchers at the IIED interviewed people from Uttar Pradesh, Madhya Pradesh and Rajasthan states, where seasonal migration is prevalent.

Many leave home when there is little work in farming or fishing to find jobs on construction sites or in cotton fields in Maharashtra, Gujarat and New Delhi. More than 70 percent of households in the study said droughts were happening significantly more often in the last five to 10 years, leading to an increase in so-called distress migration when people feel they have no other option to survive. “We need to plan for the hundreds of millions of people who it is predicted will have to migrate in the coming decades due to climate change,” Bharadwaj said.

India's social protection programmes do not consider extreme weather and were not designed to build climate resilience, the IIED said. The national rural employment guarantee scheme – which promises 100 days of work per year to every household – does not act as “a viable safety net” due to delays in wage payments and a lack of transparency, the report said.

Besides revamping existing mechanisms, Bharadwaj said there was a need for preemptive action before a disaster strikes. Making migration safe for people forced to move by climate pressures

should involve “anticipatory wage employment” and portability of social protection entitlements, the IIED said.

### **India: CMFRI published online the study on Impact, vulnerability and adaptation strategies for marine fisheries of India**

<http://eprints.cmfri.org.in/14771/>

"Scientists at ICAR-CMFRI often encounter questions on the changes in resource abundance and distribution in the coastal waters due to climate change. But, there is lack of coherent studies in northern Indian Ocean to scientifically quantify and predict the impacts of climate variables on fisheries resources.

The absence of scientific information becomes a major limitation to policy planners in their attempt to explain the magnitude of climate change impacts on oceans and seas in future and the possible measures that could be adopted to tackle them. Therefore, an effort is made in this document to quantify the future alterations in potential climate variables of the northern Indian Ocean and infer the possible effects it can have on the marine flora and fauna. This document is meant to address a global audience.

Therefore, efforts are made to incorporate globally approved climate change model results in the study to understand the future challenges of marine ecosystems in the northern Indian Ocean. The long-term forecasts on major environmental variables such as Sea Surface Temperature (SST), pH, mean sea level, sea surface salinity, rainfall and chlorophyll were examined for assessing the changes and the plausible effects on the resources. The resulting possible changes on the quantum of production and changes in essential fish habits are deliberated in this special publication.

The cascading effects of productivity changes, vulnerability of certain sensitive ecosystems such as the coral reefs and the social/ community impacts of such changes are discussed. Obvious changes registered in the marine resources during the last two decades, future changes with short-term interim breaks for 2030, 2050 and 2080 are also included in this.

All these studies have to be addressed in the organizational or institutional framework of governance existing in the country. Therefore, a dedicated section with recommendations or possible strategies is also presented. There are probable solutions or adaptation strategies for specific challenges. This document can serve as a scientific guideline for effectively implementing it. Full document is available at: <http://eprints.cmfri.org.in/14771/>

### **India: Coastal areas in India to bear maximum brunt of climate change: Expert**

<https://www.newindianexpress.com/nation/2021/nov/09/coastal-areas-in-india-to-bear-maximumbrunt-of-climate-change-expert-2381166.html>

"What was assumed as a possibility has now become a reality -- global warming and climate change. Scientists felt the impulse nearly a decade ago, post the industrial revolution and its

after-effects. First, it was acid rain, followed by gradual increase in average temperature, followed by melting of ice and swelling of seas. All these are now contributing to the climate change impact on coastal communities. Added to this are unscientific developmental activities and policies influenced by pressure from rich and influential people.

Traditionally, the coastline belonged to fishermen and their associates involved in processing, marketing and fishery linked jobs. Mechanisation, overfishing, indiscriminate fishing, fishing during breeding season, reduced mesh size, are some of the human causes of declining fish catch. These are being addressed in the form of fishing holidays, regulation of mesh size, regulation of engine power, ban on light fishing, bull trawling etc. But these are hardly monitored and the capable violate laws, while innocent traditional fishermen suffer.

However, there are other issues that need to be viewed seriously. They include an increased number of cyclones, acidification of the sea, migration of population due to increasing temperature and rise in sea level. All these are global issues that have to be addressed by policy makers from all over the globe, and implemented locally by providing proper education and support.

Coastal Regulation Notification 1991 was an effort to safeguard the interest of fishermen and other coastal populations, considering several issues that include climate change too. Notable features are marking 500 metres from the shoreline as 'No Development Zone (NDZ)', protection of ecologically sensitive regions, mangroves etc. Unfortunately, this notification saw a series of amendments and fresh notifications to favour the rich and influential in the name of development, tourism promotion etc.

Private players are entering the coastal regions, and fishermen are victims of all these developments. Coastal erosion is a natural phenomenon occurring all over the world, and is seasonal. The erosion is due to change in the current monsoon pattern. These erosions are temporary and accretion occurs within three months when the current pattern changes.

Increase in the impact and area covered is due to human interference in the form of dredging, construction of sea walls, encroachment of the sea etc. All these affect traditional fishery. Sagara Mala is a project which is totally unscientific. When the existing infrastructure is not even utilised, plans for further expansion is uncalled for. The question is, why such a development when it does not favour local communities?

### **India: Coastal communities: Missing women from adaptation plans!**

<https://www.canindia.com/coastal-communities-missing-women-from-adaptation-plans/>

"Adaptation plans in view of the changing climatic conditions across the globe for coastal areas have rendered the gender dimension invisible, which may mean that the experience of those who are traditionally sidelined in fisheries, the primary livelihood, continue to be invisible further compounding inequalities of various natures, a study has said.

Women in coastal communities play a central role in the entire fish value chain — directly as

fish farmers, traders and processors alongside playing supportive roles in the management of money, labour, and equipment for fishing enterprises. And yet, despite their importance for fisheries and in particular for post-harvest processing and aquaculture, women are often assigned the most unstable and poorly paid positions leading to a lack of recognition and to fisheries being seen as a masculine sector.

Published on Monday in ‘Frontiers in Climate’, the multi-author study ‘Climate Adaptation Interventions in Coastal Areas: A Rapid Review of Social and Gender Dimensions’ has discussed the issue threadbare and found out gaps in gender equity in adaptation plans, including research on the subject not addressing the spatial variations in the communities vis-a-vis anglophile studies and regional/cultural studies.

Around the world, the number of people living within 10 km of the coastline amounts to around 600 million people — about 10 per cent of the world’s population while around 40 per cent of the world population, i.e., over 2.4 billion people, live within 100 km from the coast. Now, imagine the proportion of women among this population and how the lack of data renders women practically invisible and reinforces gender inequalities.

As per the Inter-governmental Panel on Climate Change (IPCC’s) Special Report on Oceans and Cryosphere (SROCC), shows sea levels are rising at 3.7 mm per year, about three times faster than the long-term average during 1901-1971 (1.3 mm per year) due to retreating glaciers and ice sheets and thermal expansion of seawater and the climate models further project that under low-to-high greenhouse gas (GHG) emission scenarios sea level rise (SLR) will continue at a rate of 4.4-9 mm per year from 2015-2100, leading to increased numbers of coastal extreme events.

It is here that the adaptation would play a major role for the coastal communities. The study authors looked at research papers on gender concerning five climate adaptation strategies: coral and mangrove restoration; aquaculture; wetlands; bio-diversity, and coastal protection.

“While there is a need to act rapidly to support coastal communities to undertake these adaptations, this should not be at the expense of achieving gender equality, or worse still lead to an exacerbation of inequalities,” the study said.

“Ignoring the gender dimensions of climate adaptation interventions may mean that the experiences of those who are already sidelined in the context of fisheries and coastal livelihoods continue to be rendered invisible, further compounding inequalities of various natures,” it pointed out and suggests, for this reason, it is essential that those designing and monitoring adaptation action take explicit notice of gender dynamics.

The SROCC broadly highlights some of the major ways in which gender inequality interacts with coastal climate change and risk, however, it does not consider how gender interacts with adaptation interventions, the authors pointed out.

An interesting observation was that most of the studies that consider gender in the context of coastal hazards and sea-level rise are focused on the global South with much less known about these hazards in the global North.

“The overall score of the relationship between climate adaptation in coastal eco-systems concerning gender is principally negative,” the study assessment said, adding: “These negative outcomes can be interpreted in two main ways; either coastal and marine adaptation options are gender blind or else they are ignoring the opportunity to enhance gender equity in the implementation of new adaptation-related investments and projects.”

This may be due to a lack of information on the additional steps needed to consider gender or due to imbalanced and discriminatory approaches to measures, they said. Pointing out that there is a substantial research gap in relation to understanding the gender dimensions of coastal climate change as well as an unequal concentration of research geographically, the study said, it is, of course, with the caveat that outside anglophone mainstream academia, the evidence base may look more promising.

It also flagged how technology and credit are often geared towards the actual tasks of “fishing”, ignoring the multiple pre- and post-harvest tasks that are also essential and property ownership. “So, while SDG5 – gender equality and women’s empowerment – does provide a useful analytical framework, our review demonstrates that issues of gender equality within coastal communities may not neatly fit into the identified indicators, making assessment difficult,” the authors said.”

### **India: Coastal economy- a step towards investment in India’s sustainable future**

<https://www.inventiva.co.in/stories/simarleen/indias-coastal-economy-a-step-towards-investment-in-indias-sustainable-future/>

"Indian economy is diverse and distinct. It is home to a number of varying sectors, some of which are not talked about enough. Let us today talk about one such part of the economy, which provides a large amount of employment to people who live near the sea areas and also has a major share in the overall economic development of the country. We are talking about the coastal economy of the country, which is very important for our growing economy. It contributes to nearly 4% of the total GDP. The people in the coastal areas rely on the coastal economy as it provides them with their basic livelihood.

Therefore, the growth of the coastal economy is very important for our country. However, it should always be kept in our mind that any growth which is not sustainable is directly harmful to the environment and the people. In this article, we will learn how the country can sustainably develop the coastal economy and how is it important. But to learn about everything, we should start from the basics, right?

#### **Coastal economy**

The coastal economy is a part of the country’s economy which includes nearshore areas as well as shoreline, coastal and watershed country aggregates. This includes all the economic activities done in that region. The coastal economy, with more and more development, daily is growing at a very fast pace. It plays a major role in providing employment to a large mass of people living

in those areas and therefore reduces the problem of unemployment and makes people more independent. However, it should be ensured that the fast growth in this sector should be through sustainable ways, or else might hamper the growth of the economy rather than helping the economy to grow.

With over 7500+ km spread coastal lines which are spread across nine states and 12 major ports, the coastal economy facilitates 95% of the total business through transportation which shows how important it is to the nation. Talking about the sustainable development of this economy in the UK one recent news provided that six new projects that aim to sustainably develop the coastal economy and its environment have been announced. Similar projects have been started to launch in India to sustainably develop the coastal environment.

You might wonder why sustainable development is important? Well, we have the answer. Ever since the process of development started, we have forgotten that we are solely responsible for the condition of the environment. We have always used the environment for the sake of our good and have never considered the protection of the environment. All the ignorance has now led to a rise in pollution, global warming and many more environmental problems. With all the rising threats in the world, the need for sustainable development rises.

Sustainable development encourages us to conserve and enhance our resource base by changing our ways of development. The need to sustainably develop the coastal region rises every day as it will gradually help the country to grow. The coastal economy of the country is worth nearly Rs 600 crore but the people living there are facing increased pressure due to the rising climate change, threats to the aquatic wildlife and rising economic challenges. Seagrass, which is very important in supporting the coastal wildlife is very important for the sustainable development of the coastal economy.

Researchers and policymakers are constantly making efforts to know how and where the meadows of seagrass can be grown in the country. Seagrass plays two major roles in the sustainable development of the economy- improving the productivity of fisheries and reducing the ever-rising greenhouse gases by capturing them. However, the level of seagrass is falling every single day majorly due to pollution and disturbance in the environment created by us people. Flooding and coastal erosion, which is recently rising is also a major threat to the growing coastal economy.

You might be wondering that flood is a natural phenomenon, and the rising floods are not due to the people. Well, you are wrong. Undoubtedly, flooding is a natural phenomenon. However, there are some human-driven elements that lead to the rising floods. The way we manage our waterways and the alteration to the land that we do in order to facilitate development also leads to rising floods.

Coastal erosion leads to the loss of ecosystem and land and damages the structures. Globally, coastal erosion leads to roughly \$500 million per year. Climate change The coastal economy is the most vulnerable to the rising climate change in the world. The rising climate change poses as a great challenge to the coastal economy and its people. This directly impacts the people who depend on the coastal economy to sustain their livelihood. The widely research projects in recent

years will provide a better understanding of how the coastal economy can be sustainably developed. A sustainable future for the marine economy becomes a necessity as this coastal economy provides employment to the huge population of the country.

What has led to the poor condition of the coastal economy? Millions of people currently depend on the coastal economy to earn their livelihood. However, the negligent behaviour of the people has led to this degrading condition of the coastal economy. The rising climate change is one of the biggest factors in this degradation. The rising number of industries and their non eco-friendly methods of working has led to this destruction of the climate.

Moreover, the rising fishing is destroying marine life. The rising level of fishing is due to the rising population and the pressure is directly on the environment. Water pollution has been very harmful to our environment and is still rising which poses a major threat to the coastal economy. Climate change is already impacting the ecosystem of the country's coastal economy and is destroying the livelihood of the people who are dependent on it.

The government has recently been raising their concern about the coastal economy and new projects are announced every day for the sustainable development of the coastal economy. However, one thing which must be kept in our mind is that only the government can never succeed to develop a sustainable coastal economy. The public must cooperate with the government in order to protect the coastal economy.

The environment is ours and we are responsible for its protection. To protect the livelihood of a large population, the government, as well as the people, should do what is their part. The number of researches is rising every day in order to sustainably develop the coastal economy which is the need of the hour, and with this development, we can guarantee that there will a brighter future for the coastal economy.

### **India: Coastal erosion is cause for worry**

<https://www.deccanherald.com/opinion/second-edit/coastal-erosion-is-cause-for-worry-1103876.html>

"There is a serious threat to India's coastline across all the states with seashore. The government told parliament recently that 34% of the coastline is facing erosion of various degrees. While there are signs of accretion in some areas, only 40% of the coastal area is considered to be stable. West Bengal saw erosion along 60% of its coastline from 1990 to 2018 and is the worst-affected state. Pondicherry saw erosion along 56% of its coastline, though it only has a small seafont. This is followed by Kerala, which has suffered extensive erosion along 46% of its coast. Tamil Nadu has also been hit badly.

The figures show that over 23% of Karnataka's coastline has been affected by erosion. Recent research on erosion in the state showed that Ullal has been worst-hit and it has lost land at the rate of 1.3 metres a year since 1990. The erosion crisis is expected to worsen in the coming years. A 2016 study by IIT-Mumbai and the National Centre for Earth Science Studies had found that coastal erosion will occur 1.5 times faster in the next three decades than in the last 30 years.

There are a number of studies that predict that several localities in India's coastal cities will be submerged by 2050. The threat is not only to cities. Coastal areas are heavily populated and support many economic activities, like fishing, that provide livelihood and income. Erosion will hit them badly.

With the receding of the coastline, large numbers of people have already been dislocated and have lost their shelter and livelihood. The degradation of the coast is caused by both natural phenomena and human activities. The increasing incidence of cyclones and other natural calamities as a result of climate change is one reason. Construction of infrastructure, sand-mining and destruction of mangroves are other reasons.

Coastal regulatory rules and regulations have left much to be desired, and they have been diluted also. Even the diluted rules are not implemented properly. A lot of financial allocations are made every year to protect the coastline and to rehabilitate those affected by erosion. But there are many questions about the methods used to prevent erosion. Walls and bunds are usually built to resist the onslaught of the waves. But there is a view that in many places, they redirect the waves to hit and damage adjacent areas where there are no protective bunds.

The Intergovernmental Panel on Climate Change (IPCC) is sceptical about seawalls and has warned against them. There is need for more research and scientific studies to develop better and more effective methods to protect the coastline and to prevent erosion."

### **India: Connecting machines in remote regions**

<https://news.mit.edu/2021/skylo-satellite-0129>

"On Nov. 26, seven fishermen aboard a small fishing boat off the coast of Maharashtra in western India were struck with panic when their vessel was damaged and began to sink. The panic was warranted: The boat was too far from shore to radio for help. Tens of thousands of fishermen find themselves in a similar situation around the world every year. Globally, the vast majority of small, deep-sea fishing vessels do their work totally disconnected, leaving them vulnerable to storms and other disasters. At the root of the problem is the high cost of satellite connectivity in areas like oceans, forests, and mountains, which make up the majority of the Earth's landmass.

Now the startup Skylo, co-founded by Parth Trivedi SM '14, is offering the ability to communicate with satellites from anywhere on the planet for less than 10 dollars a month. Skylo's team has developed a new antenna and communication protocol that allows machines, sensors, and other devices to efficiently transmit data to the geostationary satellites already deployed in space. The company says its technology enables satellite communications at less than 5 percent of the cost of existing solutions and could bring an "internet of things" revolution in the world's most remote regions.

With the Skylo Hub, which resembles a modem and contains the company's proprietary antennae, deep-sea fishermen can go from being isolated and vulnerable to having the ability to send out emergency communications, receive storm alerts, and even sell their catch before they

return to port. Farmers in remote regions can get real-time data on weather forecasts, soil content, and crop health. Truck drivers and fleet operators that were previously invisible for large stretches of their journeys can be precisely located and their cargo monitored.

Skylo is currently being used on trucks, fishing vessels, tractors, and train coaches across India and its surrounding oceans as part of a partnership with the country's government-owned telecommunications provider. Later this year, the company's leadership team is planning to expand to other regions of the world. As for the fishermen in the sinking ship, their screams were heard by another small boat that happened to be piloting Skylo's two-way communication technology. They sent an emergency alert to the Maharashtra Coastal Security, who got the sinking boat's exact location and was able to make a rescue.

According to Trivedi, who is also the company's CEO, it was the third boat Skylo helped save in 2020. A powerful project: Trivedi worked on new approaches to sustainable innovation in aviation as a graduate student in MIT's Department of Aeronautics and Astronautics. He calls his time at MIT "the most exciting of my life." "MIT really shaped the way I think and allowed me to break down extremely complex problems in space and other subjects into first principles," Trivedi says.

Trivedi also developed algorithms to determine the optimal use of land by analyzing satellite data, helping him appreciate how disparate data sources "can be used to create rich insights." Trivedi was pursuing his MBA at Stanford University when he began exploring the business opportunity in the difference between the kinds of data humans and machines send and receive from satellites. "If I just want to send a heartbeat from a tractor, I shouldn't have to pay the same rate I'm paying for broadband service from a cruise ship, which is exactly how it is today, unfortunately," Trivedi says.

Trivedi and his research collaborators proposed a different kind of network that would leverage narrowband communication protocols, which can send data over long distances more efficiently than broadband and are already used between connected devices on Earth. The system would work with the geostationary satellites already in space and use specialized antennae made from cellular components, dramatically reducing hardware costs for customers.

In 2017, Trivedi founded Skylo with three members of his research team, but the founders stayed off the public radar as they developed Skylo's technology and established partnerships with satellite companies. In January of 2020, Skylo raised \$103 million to commercially deploy its technology, beginning trials with public and private companies in India in sectors including fishing, farming, logistics, and railways. As Trivedi spoke with potential customers about how they could use the technology, the massive array of use cases they came up with helped him appreciate how impactful Skylo's network could be.

Fulfilling the promise of IoT As part of Skylo's early work with the Indian government, the company helped the election commission collect votes from remote villages, a process Trivedi says can require officials to hike for three days on unmotorable roads. In the northeast Indian region of Shella, polling stations used Skylo to communicate directly with election headquarters.

Under the more efficient system, officials were able to securely coordinate and manage their on-ground operations in remote villages that were previously unconnected.

Newfound satellite connectivity will also be critical for health care operations in remote regions, and Trivedi says Skylo has already developed a data interface for tracking the temperature of Covid-19 vaccines as they're transported. Skylo's team is focused on selling commercially in India right now, but Trivedi says the only thing preventing the company from expanding is that each country has different requirements for selling satellite services.

The company, headquartered in the U.S., also has offices in India, Israel, and Finland. "Broadly speaking, two-thirds of landmass is unconnected or under-connected," Trivedi says. "That's because when you're building a telecom network, you're trying to connect 99 percent of populations as opposed to connecting geography, so machines get left out. Skylo is mobilizing data from places and equipment and machines that were never connected before, that were in geographies that could not have been affordably connected before."

### **India: Conserving marine ecosystems through the Wild Life Protection Act is not very effective**

<https://india.mongabay.com/2021/06/commentary-conserving-marine-ecosystems-through-the-wild-life-protection-act-is-not-very-effective/>

"India is a mega-biodiverse nation. It is home to 7-8% of the recorded species of the world. Its marine ecosystems are equally biodiverse: of the 32 animal phyla known to science, 15 are found in the marine ecosystems of India. In consequence, illegal trade in marine species in India is rampant. The primary Indian law protecting wildlife, including marine wildlife, is the Wild Life (Protection) Act, 1972 (WLPA).

It prohibits the hunting of animals listed in its six schedules (lists) and regulates trade in such animals and their parts. It also provides for the declaration of protected areas within which human activities are restricted. These two approaches — banning hunting of and regulating trade in species by listing them in the schedules, and designation of protected areas — have found some success in protecting terrestrial wildlife. However, their efficacy in protecting marine ecosystems is questionable.

#### Marine ecosystems and terrestrially oriented policies

The WLPA, in its original form, was oriented terrestrially. For almost 20 years after its enactment, it did not contemplate protected areas in terrestrial and marine ecosystems separately. The Act did not lay down any separate procedure for the declaration of marine-protected areas, and its Schedules listed very few marine species.

However, in light of international developments in marine conservation, the Ministry of Environment, Forests and Climate Change of India (MoEF&CC) has superimposed the existing terrestrially-oriented policies on marine ecosystems. Over 30 marine protected areas (MPAs) have been declared in peninsular India and over 100 in the Indian islands. In addition to the

crocodiles and turtles that found a place in the WLPA schedules during its initial years, a number of elasmobranchs, coelenterates and molluscs, which together constitute a majority of the marine species protected under the legislation, have been added to its schedules since 2001.

Of the 41 marine species protected under the WLPA, most are listed in Schedule I. Animals listed in Schedule I, along with those listed in Part II of Schedule II, receive the highest degree of protection under the WLPA. Hunting of animals listed in these schedules is prohibited and licenses to hunt them are granted only in exceptional circumstances. Dealing in, transporting, and buying of such animals is also prohibited. In contrast, dealing in animals listed in the other Schedules is regulated through a licensing regime. It is unclear whether this approach has effectively reduced illegal trade in marine animals, especially those in Schedule I and Part II of Schedule II.

For instance, 173 species of sea cucumbers are found in Indian waters and, of these, around 20 are considered commercially important. In 1982, the MoEF&CC banned the export of all sea cucumbers less than 3 inches in size. Later, in 2001, all sea cucumber species were listed under Schedule I of the Act resulting in an absolute ban on their trade. Despite this, India remains a global hotspot for sea cucumber poaching and smuggling. In a press release, the MoEF&CC described sea cucumbers as some of the major species being smuggled through Indian airports as recently as May 2019.

Besides sea cucumbers, protected marine species like sea cows and marine turtles are also widely caught and traded for their meat, blood and carapace in India. That trade and hunting of these animals is rampant despite their inclusion in the Schedules to the WLPA can be attributed to two reasons. Firstly, the Schedules lack direction and are not truly representative of the actual status of species in Indian ecosystems. Originally, the Schedules were organised on the basis of the importance of species as ‘Game.’

The hunting of animals in Schedule I was banned. Those in other Schedules could be hunted after obtaining special game hunting licenses, big game hunting licenses, or small game hunting licenses. Since then, the Act has been amended several times. In his analysis of the schedules over four amendments, S.S. Bist, former Principal Chief Conservator of Forests & Head of Forest Force for the Government of West Bengal, observed that the amendments “had not followed any criteria and resulted in making the Schedules unwieldy and unstable.”

Further, until 2001, the schedules did not contain any fish species. Even after 2001, fishes have not been adequately protected under the WLPA. A significant reason has been the lack of adequate scientific data.

Judicious management of resources needed for marine ecosystems

Secondly, even though marine animals are listed in the schedules for protection, they become subject to a policy that is more suited to the protection of terrestrial wildlife. This policy of complete prohibition on hunting and strict regulation of trade in such animals disregards their role in the lives of fishing communities. Although the MoEF&CC cited the dependence of fisherfolk on marine life as an inhibiting factor until the inclusion of fishes in the Schedules, no

special provisions were added in the WLPA to address these concerns when fishes were included. This transposition seems uninformed by key socio-ecological differences between terrestrial and marine systems. Indian coasts are far more densely populated than its forests. In many fishing villages, poverty is acute and infrastructure is abysmal.

Fishing communities are heavily dependent on marine resources for their livelihood and sustenance. Most importantly, even as communities move towards modern forms of fishing, they are known to have traditionally adopted sustainable fishing practices. These include spatial and temporal regulations like fishing zones, seasonal bans, and regulation of type of fishing gear and vessels. In stark contrast to these practices, the WLPA is based on dualist ideas of humans versus wildlife. It attempts to demolish dependence regimes.

The inclusion of marine species in the schedules is rarely preceded by successful drives to provide alternate sources of livelihood to dependent communities. In addition to causing social unrest, this has caused illegal trade in species to flourish. For instance, before the ban in 2001, sea cucumbers served as a source of livelihood for around 2,00,000 fisherfolk in the Ramanathapuram and Thoothukudi districts of Gulf of Mannar and the Ramanathapuram, Pudukottai and Thanjavur districts of Palk Bay.

After the ban, the trade value of sea cucumbers rose substantially as the ban reduced supply but demand in the international market remained high. Since wildlife smuggling is a low-risk, high-profit offence, trade in sea cucumbers continued to flourish underground and became unaccounted for as well as more lucrative. The ban consequently became ineffective. Alternate strategies have been advocated by experts.

Vardhan Patankar, head of the marine programme at Wildlife Conservation Society-India (WCS-India), based on his analysis of stakeholders' knowledge of and attitudes towards the WLPA in the Andaman Islands of India, has suggested the use of regulation, preventive community-based policing, constructive engagement with fisherfolk, and the promotion of alternative livelihoods for fishing communities instead of a ban.

Similarly, while analysing strategies for conservation of sea cucumbers in India, the Central Marine Fisheries Research Institute, suggested regulatory methods for conservation supported by proactive measures like resource enhancement of populations through sea ranching in place of a total ban.

#### Terrestrially-oriented area-based conservation measures

Besides the species-centric approach represented by the schedules, the Act also adopts a habitat-based conservation mechanism. It provides for the declaration of four types of protected areas: sanctuaries, national parks, conservation reserves, and community reserves. These are meant to be land parcels with minimal human disturbance that promote in situ conservation of habitats and species. As one moves closer to protected areas, human activities become increasingly regulated. Within 10 kilometres of any sanctuary or national park, any person possessing arms is required to register themselves.

At the border, entry without a permit or entry with a weapon is prohibited. Within protected areas, destruction, exploitation or removal of any wildlife is prohibited. These restrictions affect sizeable communities that are dependent on the areas for sustenance. India has 3.57 million marine fishers spread across 3,305 coastal villages. However, the management of MPAs is marked by a lack of community involvement. The declaration of sanctuaries or national parks outside territorial waters is preceded by a dialogue over community rights.

The government first settles claims to any rights over the area. If a claim is accepted, the land is either excluded from the limits of the sanctuary or the subsistence of rights within the sanctuary is allowed. However, sanctuaries or national parks that do fall within territorial waters, can be simply declared through a notification to this effect without any claim settlement process. This ignores the reality of the fisherfolk of India. Take the Gahirmatha Sanctuary in Odisha for example.

It was notified by the state government in 1997 off the coast of Kendrapara district. The sea off the Gahirmatha coast provided business to over 43,000 fishers in 90 villages. A considerable portion of this population lived below the poverty line. Despite this, decision makers did not consult or involve the affected communities in the management plan for the Gahirmatha Sanctuary.

At the same time, restrictions on fishing that followed the declaration of the Sanctuary, such as the reduction in fishing days from 240 to less than 100, were not matched by clear evidence of positive ecological impacts. Unsurprisingly, many communities have objected to such approaches that deny local communities' control over and access to resources. This lack of local acceptance has led preservationist policies to fail.

Efforts to exclude trawlers from the Gahirmatha Sanctuary, for instance, failed due to resistance from trawling communities. In fact, conservationists have since accepted that the exclusion of trawlers is not the most effective method of conserving the sanctuary's turtles and that certain kinds of fishing in the area may be benign.

A solution: Stakeholder participation and flexible laws

Implementing the WLPA without an assessment of its likely socio-economic implications is impractical, especially when communities carry a sentiment of alienation from the process. While communities are expected to participate in implementation, they are not participants in the formulation of management strategies.

Thus, fishing communities must be integrated into the implementation as well as formulation of these laws. Fisherfolk should be included in the management bodies of protected areas so they may introduce traditional, sustenance-oriented fishing practices in these areas.

From within the system, they can keep policies abreast with traditional knowledge. In respect of modern fishing practices, they can proffer information regarding areas where their adoption is crucial for the sustenance of fishing communities, areas in which they may be harmful or benign. Flexible laws would be a consequence of community involvement. The current rigid structure of

laws based on the exclusion of humans from natural habitats is grounded in the idea that economic activities and wildlife conservation are antithetical to each other.

In part, this is due to the idea, often advocated by conservationists, that fishing communities live in absolute ‘traditional harmony’ with wildlife. In reality, communities themselves are now demanding modern development. Once these developments are accounted for, conservation laws can be designed to vary with landscape in a manner informed by perspectives of fisherfolk.

This is likely to develop an ethic that combines utilitarian and conservationist ideas. Thus, the application of the WLPA to marine ecosystems must be guided by scientific data that correctly identifies species that need protection; a regulatory, as opposed to a proscriptive, approach; and sociological impact studies of protected areas.

### **India: Conserving wetlands, rejuvenating Ganga**

<http://www.nagalandpost.com/?p=249613>

"Wetlands are unique ecosystems serving as transition zones where terrestrial and aquatic habitats meet. They are one of the freshwater habitats other than lakes, rivers etc. They are neither totally dry land nor totally underwater and have characteristics of both. The Ramsar Convention on Wetlands defines wetlands as “areas of marsh, fen, peat, and or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters.” Wetlands are a kind of natural waste-water treatment places as they are able to trap pollutants and neutralize harmful bacteria.

Due to their carbon sequestration capabilities, wetlands play an important role in mitigating climate change. Wetlands are also an important source of food and provide rice and fish that feed billions. In view of loss of wetlands and considering them as wastelands to be drained, filled and converted for other purposes, World Wetland Day is observed every year on 2nd February to raise global awareness about the pivotal role these important water bodies play in sustaining ecosystems. The Day also marks the adoption of the ‘Convention on Wetlands’ on 2nd February 1971 in the Iranian City of Ramsar.

The theme of the World Wetlands Day 2022 is ‘Wetlands Action for People and Nature’ to emphasize on the importance of actions to ensure the conservation and sustainable use of wetlands for anthropogenic purposes. Apart from recharging groundwater, wetlands can also act like giant sponges or reservoirs that can absorb excess water during heavy rains.

They support a very rich aquatic bio-diversity and act as important nutrient transformer. Several bird species use wetlands as breeding grounds. Wetlands also carry immense tourism potential and could be inviting places for popular recreational activities including hunting, hiking, fishing, bird watching photography etc.

The United Nations Sustainable Development Goals (SDGs) offer a universal agenda that recognizes the need for restoration and management of water related ecosystems including

wetlands to address water scarcity. Overall, wetlands are key to address several challenges around the world related to water, food and climate. The conservation of wetlands is particularly significant in river rejuvenation as it helps in protecting the ecological and geological entity of rivers. The contribution of wetlands in maintaining e-flows in rivers is one of the most important functions of these water bodies in protecting rivers, especially Ganga.

India has nearly 4.6% of its land as wetlands, covering an area of 15.26 million hectares. There are 47 sites in India designated as Wetlands of International Importance (Ramsar Sites), with a surface area of more than 1.08 million hectares. Out of 47 Ramsar sites in India, 21 are in the Ganga Basin. The maximum Ramsar sites are in the State of Uttar Pradesh (9), a Ganga basin state. Wetlands are inextricably linked to one of the most herculean river rejuvenation project in the world – Namami Gange Programme.

The wetlands play a crucial role in the overall hydrology of a river's basin region and contribute to water flows in sub-surface and in river streams. The Ganga Basin is the richest riverine system in India and is bestowed with diverse natural and human-made wetlands regime, ecologically and hydrologically interconnected with River Ganga and her tributaries. More than 4,500 reservoirs form an integral component of the Ganga basin's wetland regimes.

Of the 180 wetlands identified as national priority by MoEF&CC, 49 are located within the Ganga Basin (1 in Himachal Pradesh, 7 in Uttarakhand, 2 in Haryana, 4 in Rajasthan, 9 in Madhya Pradesh, 16 in Uttar Pradesh, 3 in Bihar and 7 in West Bengal). In 2020, out of total 14 sites declared in India, 9 Ramsar sites have been declared in the main stem of Ganga – Uttar Pradesh, Uttarakhand and Bihar. Sur Sagar Keetham, Kabar Taal, Aasan are a few examples. The latest entrant to the elite list of wetlands is also from Ganga Basin – Haiderpur Wetland in Uttar Pradesh, which was notified in December 2021.

Other wetlands included in 2021 and 2022 are Tsokar Wetland Complex, Ladakh, Lonar Lake, Maharashtra, Thol Lake Wildlife Sanctuary & Wadhvana Wetland in Gujarat and Sultanpur National Park & Bhindawas Wildlife Sanctuary in Haryana. The Sundarbans, a saltwater swamp that runs through territories of India and Bangladesh, has the largest mangrove forest in the world and is also located on mud flats near the delta of the Ganges River in West Bengal. Working closely with the Environment Ministry, State Wetland Authorities are being strengthened in Ganga Basin and other States who are encouraged to notify wetlands and also work for recognition as Ramsar sites.

Namami Gange Programme has been working closely with several partners like World Wild Fund (WWF), Wildlife Institute of India (WII), State Wetland Authorities etc. for developing an institutional structure for the conservation of wetlands. A project 'Conserving and Sustainably Managing Gangetic Floodplains of Uttar Pradesh' was sanctioned in June 2020 for comprehensive conservation and management of 282 Gangetic floodplain wetlands in the State within the buffer of 10 kilometers of River Ganga spanning 27 districts.

A tool kit titled 'Urban Wetland/ Water Bodies Management Guidelines' for management of Urban Wetlands has also been developed by SPA, New Delhi. Given the role of small wetlands in providing drinking water by acting as decentralized water storage systems, NMCG in

collaboration with WWF has initiated an engagement programme with District Ganga Committees to support the district-level institutions in identifying wetlands, prepare good inventory, conduct ground verifications and develop actions plans for their preservation. Protection and conservation of wetlands is one of the foremost priorities of NMCG, which is trying to bring wetland conservation to the basin level.

In the recent past, the conservation and preservation of wetlands is being increasingly brought to the forefront of India's water conservation efforts in general and river rejuvenation initiatives in particular. Acknowledging the importance of wetlands in ensuring water security, the Ministry of Environment, Forest and Climate Change (MoEF&CC) established a first-of-its-kind Centre for Wetland Conservation and Management (CWCM) as part of the National Centre for Sustainable Coastal Management, Chennai.

The Centre has been established "to address specific research needs and knowledge gaps and aid in conservation, management and wise use of wetlands in an integrated manner." The Centre was launched last year on the occasion of 50th anniversary of signing of the Ramsar Convention. The theme of last year's World Wetlands Day (Wetlands and Water) was also significant insofar that it signified the inseparability between Water, Wetlands and Life.

On the occasion of Gandhi Jayanti 2021, the MoEF&CC launched a web portal – 'Wetlands of India' – as a single point access website to all information related to wetlands. All these initiatives are a testament of the importance accorded to wetlands in India, especially in the wake of Jal Shakti Abhiyan and Jal Jeevan Mission, that, through source sustainability, aims to make water conservation a people's movement and provide safe drinking water to every household in India.

It is the need-of-the-hour to spread awareness on the importance of wetlands – and their direct correlation with water, food and climate security. The Government of India is committed to preserve these, sometimes small, yet extremely crucial part of India's riverine systems. This World Wetland Day, let us take the onus of respecting and revering our wetlands to make India water-rich.

**India: Country must push for ratification of UNCLOS by all major maritime powers, including the U.S.**

<https://www.thehindu.com/opinion/editorial/choppy-waters-the-hindu-editorial-on-global-maritime-security/article35845130.ece>

"When Prime Minister Narendra Modi took the stage to address the UNSC on a debate on maritime security — the first Indian premier to do so — he might have hoped to keep the focus of the discussion on building maritime ties and developing maritime infrastructure through regional cooperation initiatives. Yet, once more the discussion veered toward major nations trading barbs on continuing strategic dissonance in this sphere.

At the heart of the strident claims and counterclaims regarding allegations of abuse of maritime resources and disrespect of territorial sovereignty rights of nations were the U.S., on the one

hand, and China and Russia on the other. Mr. Modi deserves credit for bringing to the table a five-prong plan to enhance maritime security worldwide through cooperation, including removing barriers to legitimate maritime trade, settling maritime disputes peacefully and based on international law, jointly facing natural disasters and maritime threats created by non-state actors, preserving maritime environment and resources, and encouraging responsible maritime connectivity.

Indeed, the acceptance at the UNSC of the legislative framework for UNCLOS, the “legal framework applicable to activities in the oceans, including countering illicit activities at sea”, is seen as an important achievement during India’s month at the helm of the Council. The sustained interest of India in promoting maritime security also draws from Mr. Modi’s SAGAR vision plan aimed at strengthening economic and security connections with regional maritime nations.

If there are strategic barriers to creating momentum in achieving these goals, they are associated with specific regions of maritime tension including the South China Sea and the Black Sea. Regarding the former, U.S. Secretary of State Antony Blinken decried the “dangerous encounters between vessels at sea and provocative actions to advance unlawful maritime claims”, rejecting “actions that intimidate and bully other states from lawfully accessing their maritime resources”.

Similarly, regarding the Black Sea, the Kerch Strait, the Sea of Azov, Mr. Blinken at the UNSC debate hit out at what Washington considered “continued aggressive actions against Ukraine... which are disrupting commerce and energy access”. Although India’s presidency of the Council is brief, its sustained commitment to promoting maritime security and boosting trade through sea routes will require it to be adroit in negotiating with these squabbling powers and creative in seeking resolution of the very real conflicts at the heart of their disputes.

While some may deride UNCLOS as lacking teeth for enforcement, ultimately it is the only comprehensive framework of laws available to maritime powers to assert their rights consistent with the rules-based international order. Through its UNSC presidency and beyond, New Delhi must faithfully advocate for ratification of UNCLOS by all major maritime powers, including the U.S.

### **India: Customs duty revamp gives fisheries sector a boost**

<https://www.livemint.com/budget/news/customs-duty-revamp-gives-fisheries-sector-a-boost-11644600313024.html>

"India’s fisheries sector has emerged as a key beneficiary of the customs duty rejig to boost local production, even as much of the attention has been focused on the manufacturing industry. The Union budget announced a sharp reduction of basic customs duty from 30% to 10% on live black tiger shrimp, which farmers use for breeding, and from 30% to 15% on both frozen krill, a feed for fish, and on algal oil derived from certain marine algae for making aquatic feed. These inputs used in shrimp culture were given relief on basic customs duty as India is a major exporter of shrimps and there are several farms in coastal Andhra Pradesh and Tamil Nadu, Central Board of Indirect Taxes and Customs (CBIC) chairman Vivek Johri said in an interview.

To support the food processing sector, the duty on frozen squids and mussels, a shell fish, too was halved to 15%. Increasing farmers' income is a policy priority for the government, including for those in the fisheries sector, Johri said. Industry representatives said the move was beneficial but more could be done. "The finance ministry has reduced import duty only on black tiger shrimp from 30% to 10% which is really commendable and helpful for the aquaculture industry. But right now, more than 95% shrimp import consists of L. Vannamei shrimp.

So, it would be highly beneficial if the import duty is reduced on that as well," said Prathipati Veerabhadra Kumar, managing partner of Srinidhi Biotechnologies, a hatchery based in Andhra Pradesh. Kumar said the hatchery industry is heavily dependent on feed necessary for shrimp from other countries, and it would be helpful if the import duty is reduced on that as well since there are relatively less number of indigenous shrimp feed manufacturers.

Kumar also said hatcheries need incentives given that they take the initial high risks of importing live shrimps and have a limited window period for selling to farmers without compromising quality and safety. The government is also running a five-year scheme -- Pradhan Mantri Matsya Sampada Yojana -- up to FY25, aimed at addressing the gaps in the fisheries value chain from fish production to post-harvest infrastructure and marketing. Under this scheme, India has set a fisheries export target of Rs. 1 trillion, additional seven million tonnes of fish production, and generation of 5.5 million jobs over the years.

The policy priority is to help achieve a 'blue revolution' through sustainable and responsible development of the fisheries sector. India's marine product exports have been growing robustly, and a big part of it is due to shrimp exports. Frozen shrimp makes up 74% of India's marine product exports in dollar terms, followed by frozen fish and frozen squids.

As per provisional estimates from the commerce ministry, export of marine products grew 35% to \$6.1 billion during the April-December period of 2021 compared to \$4.5 billion in the same period the previous year. In the April-December period of 2019, India had exported \$5.5 billion of marine products.

In December 2021, marine product exports touched \$720.5 million, showing a 28% growth over the year-ago period. The government expects exports to touch an all-time high, exceeding the \$7 billion seen in FY18, despite the impact of the pandemic.

### **India: Data: Which State has a better Fish Production ratio corresponding to the Central Funds transfer?**

<https://factly.in/data-which-state-has-a-better-fish-production-ratio-corresponding-to-the-central-funds-transfer/>

"In the earlier story, we explored the data related to assistance provided by the Centre to states for various fisheries-related schemes and analysed the trends over the years. In this story, we explore these trends further in detail and analyse any impact they might have had on fish production in these states. Prior to the Integration, Scheme for Welfare of Fishermen accounted for 30% of the transfer to States. As highlighted in the earlier story, since 2017-18, a new

umbrella scheme i.e., Blue Revolution: Integrated Development & Management of Fisheries was introduced, which was restructured as a merger of various ongoing fisheries-related schemes.

According to the data that we received from the Ministry of Finance through RTI, the Centre transferred funds to the states under the below four schemes prior to the implementation of the integrated scheme of 'Blue Revolution'. 1) Development of Marine Fisheries, Infrastructure, and Post-Harvest Operations 2) Inland Fisheries 3) National Scheme for Welfare of Fishermen 4) Strengthening of Database and Geographical Information System of The Fisheries Sector We have also highlighted in the earlier story that all the transfers to the states made in 2016-17 were under 'Inland Fisheries'.

The review of the available data for various schemes since 2014-15, prior to integration is as follows. 1) National Scheme for Welfare of Fisherman was a Central Sector scheme and the transfers to the states under this scheme formed 33% and 28% of the total transfers to the states during 2014-15 & 2015-16 respectively. Tamil Nadu & Kerala have received the greatest transfer of funds under this Scheme.

2) The transfer to states under another Central Sector Scheme, 'Development of Marine Fisheries, Infrastructure and Post-Harvest Operations' increased exponentially in 2015-16 with Rs. 110.05 crores compared to Rs.69.28 crores in 2014-15. This increase can be attributed to an increase in the transfers made to Tamil Nadu, Kerala & Karnataka along with the corresponding increase in transfers to Puducherry, Gujarat & West Bengal.

3) As highlighted earlier, the transfers in 2016-17 were made only under 'Inland Fisheries' amounting to Rs. 383.75 crores compared to just Rs. 34.3 crores in 2015-16. Karnataka & Tamil Nadu which did not receive any allocation under this scheme in the earlier years are among the states with the highest transfers of Rs. 28.7 crores & Rs.24.9 crores respectively in 2016-17.

During the first year of implementation of the new Integrated Scheme (2017-18), Tamil Nadu received the highest amount with Rs. 113.43 crores, in continuation of the trend, observed in earlier years where the state received the most funds through various schemes. However, there has been a decline in the transfer of funds to Tamil Nadu since then. Karnataka & Maharashtra have seen a varying trend, but their position among the states receiving the most funds fell in recent years.

On the contrary, Kerala has seen an increase in the transfers received under the new integrated scheme, where-in transfers they increased from Rs. 8.12 crores in 2017-18 to Rs. 93.57 crores in 2019-20. Another state, which has a year-on-year increase, albeit with a lesser amount is Madhya Pradesh. Since the implementation of the new scheme, various states have received higher transfers during various years.

1) Andhra Pradesh & Uttar Pradesh has seen an increasing trend in transfers in recent years. 2) Bihar (2018-19) & Chhattisgarh (2019-20) have received comparatively higher transfers during these years compared to other years. 3) There is also a trend of increased funding for North-Eastern states with Meghalaya, Tripura, Nagaland, Arunachal Pradesh, etc. benefitting from the new scheme. By bringing a greater number of states into the funding fold & increased funding to

states, the Integrated scheme looks like taking a more holistic approach at the national level at least in the distribution of the central funds. However, information on the specific projects being undertaken under these schemes would shed light on the utilization and outcome of these transfers.

The reduction in transfers for states like Tamil Nadu, Karnataka, and others does raise questions on the rationale of the funding decisions since these states have traditionally received more funds. This is especially important considering the fact that the 'National Scheme for Welfare of Fishermen' was one of the schemes under which these states received a higher share of funds prior to the launch of the Integrated scheme. The goal of the various central schemes related to fisheries is to increase the fish production of the country.

One of the stated objectives of the Integrated scheme of 'Blue Revolution' is to increase the overall fish production. Based on the data regarding the transfers made under various schemes, we have analysed the impact of these transfers by taking into consideration the overall fish production of the respective states. For this analysis, we have relied on the Handbook on Fisheries Statistics-2018', which is the latest available handbook.

This limits our analysis to exclude 2018-19 & 2019-20, i.e., 2 out of the 3 years since the integrated scheme has come into effect. It has to be noted that apart from the Central transfers, there might be many other factors influencing the production – existing infrastructure, state-level schemes & initiatives, availability of water resources, etc. While this method might not be foolproof, it is aimed at ascertaining any impact of the central fund transfers on fish production in states.

We have considered the metric of 'Tons per Thousand rupees' for this analysis. This implies – Number of Tons of fish production per every Thousand rupees being transferred under various schemes. 1) Andhra Pradesh has the highest fish production in the country as per the data provided in the Handbook. In spite of being the state with the least amount of Central funds among the southern states (barring Telangana), it has a significantly higher production/transfer ratio with 22.53 tons/thousand rupees. 2) Meanwhile, the other Southern States have lower ratios, when the production of this four-year period (2014-18) is taken into consideration. Despite receiving more central funds, the corresponding ratio for Kerala, Karnataka and Tamil Nadu is 2.1, 1.87, and 0.92 respectively.

3) Similar to Andhra Pradesh, West Bengal also has a higher fish production despite lower central transfers among comparable states. Even during the four-year period, the production per transfer ratio is at par with Andhra Pradesh at 20.16 tons per thousand rupees of central transfers. 4) Most of the North-Eastern states have a lower ratio, in spite of increased transfers in recent years. 5) Odisha has received significant transfers during this period. While the ratio is lower at 3.16 compared to few other states, there has been a steady increase in fish production that can be correlated to the central transfers to the state during this period.

6) Gujarat, Bihar & Uttar Pradesh are among the better performing states with a higher production ratio during this period, when compared to other states. With multiple schemes being integrated into a single integrated scheme in 2017-18, and increased transfers to various

states since 2017-18, the trends post 2017-18 would offer better insights on the impact of the central funds' transfer on fish production. This can however be ascertained only after the fish production data is released up to 2020-21.

### **India: Deep Ocean Mission not to affect livelihood of fisherfolk**

<https://theprint.in/india/deep-ocean-mission-not-to-affect-livelihood-of-fisherfolk-centre/826279/>

"The Deep Ocean Mission would not result in any over exploitation of the marine resources by corporate houses, Earth Sciences Minister Jitendra Singh told Lok Sabha on Wednesday. In a written reply to a question, he said the mission will also not affect the life and livelihoods of fishers in the country.

"The Deep Ocean Mission aims to explore deep-oceanic resources and develop technologies for their sustainable use," the minister said in response to a question from CPI(M) member A M Ariff. Singh said the outcome of the program is intended to identify potential new resources and develop technology for harnessing them in future, which may generate additional opportunities for livelihoods.

He said the Deep Ocean Mission is related to the Blue Economy and its activities will help fisheries, tourism and maritime transport, renewable energy, aquaculture, seabed extractive activities and marine biotechnology.

### **India: Department of fisheries takes up concrete steps to protect aquatic ecosystem: Centre**

[https://www.indiaonline.com/article/news-india-environment/departement-of-fisheries-takes-up-concrete-steps-to-protect-aquatic-ecosystem-centre-121060700309\\_1.html](https://www.indiaonline.com/article/news-india-environment/departement-of-fisheries-takes-up-concrete-steps-to-protect-aquatic-ecosystem-centre-121060700309_1.html)

"The sustainability and conservation of our aquatic ecosystem which constitutes of various freshwater habitats, with oceans and seas covering more than 70 percent of the Earth, has gained a lot of attention in recent times at national and international forums. It also underpins key economic sectors, such as fisheries and tourism. However, today these habitats are constantly facing huge threats from various actors. As predicted by eminent scientists and practitioners across the world, millions of tonnes of our plastic waste released into these habitats by humans are harming creatures, including seabirds, turtles, crabs and other species.

To curb the impact caused to these habitats, it is imperative that more awareness be created amongst nations to take responsible actions, work towards conservation of environment and leverage existing resources to reverse and restore the planet Earth. However, at the same time one must understand that protecting and restoring the entire ecosystem is a massive task and needs to be taken up collectively by nations across the globe on priority and at a faster pace.

The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India truly recognizes the urgency to protect these habitats while ensuring optimal utilization of our national resources. In view of the same, the schemes and programmes

being implemented by the Department, aims at the growth of the fisheries and aquaculture sector, keeping sustainability of environment as prime focus.

“Blue Revolution”, the flagship scheme of the Department, launched in the year 2015, aimed to achieve economic prosperity of the country and the fishers and fish farmers as well as contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

Under Blue Revolution, total funds of Rs. 2573 crores were released as central assistance to various States and Union Territories and various organisations for sustainable and holistic development of fisheries and fishers’ welfare, along with promotion of environment friendly aquaculture practices.

As part of Blue Revolution scheme, various environment friendly technologies were adopted for safeguarding of our aquatic ecosystem. Recirculating Aquaculture Systems (RAS) were supported; RAS technology is eco-friendly, water efficient, and is a highly productive intensive farming system, with zero environmental impact. Likewise, Sea Cages for marine fish culture were promoted and supported, Seaweed cultivation has also been promoted, fish lean/ban period have been implemented during the breeding season amongst many other initiatives. Solar panel units for producing energy to operate water pumps, aerators and carrying out other fisheries related activities were provided assistance under the Blue Revolution Scheme.

This entailed providing one-time central assistance to beneficiaries for procurement and installation of solar power support system for fisheries. These initiatives amongst others have played a major role in protecting the land as well as the aquatic ecosystems. To further build-on the achievements in the fisheries sector through implementation of the Blue Revolution Scheme and develop the sector in a sustainable and responsible manner, the Government of India launched a flagship scheme of “Pradhan Mantri Matsya Sampada Yojana (PMMSY)” in May 2020, with highest ever estimated investment of Rs. 20,050 crore under the Aatmanirbhar Bharat package.

PMMSY aims at sustainable and responsible development of fisheries sector with focus on infrastructure, species diversification, sustainable livelihoods, aquatic health management, robust database, innovations, collectivization, modernization of value chain, export promotion, establishing a robust fisheries management framework, with special focus on implementing technologies that ensure protection of habitats and fisheries wealth.

In this context, the Department is taking up a range of activities including implementation of bio-flocs, Recirculatory Aquaculture System (RAS) with special focus, Reservoir cage culture, open sea cage culture for conservation of marine fisheries and risk mitigation to marine fishers, sea weed cultivation for supporting livelihood and ushering prosperity for coastal communities especially women in sustainable environment friendly manner alongwith providing livelihood and nutritional support for fishers’ families for conservation of fisheries resources during fishing ban/lean period.

Furthermore, the Department is also actively promoting installation of Bio-toilets in fishing vessels to keep the marine environment clean and prevent contamination of marine resources.

PMMSY aims to promote sustainable fish production systems/methods with minimal environmental impacts to support more crop per drop. Integrated Modern Coastal Fishing Villages will be developed under PMMSY with investment of Rs750cr to leverage Blue economy/Blue growth with an aim to maximize economic and social benefits to coastal fishers while minimizing environmental impact through sustainable fishing practices.

Project proposal with total outlay of Rs2881.41cr have been approved under PMMSY during 2020-21 for sustainable development of fisheries and fisheries related infrastructure including fishers' welfare. Alongside, the Fishery Survey of India (FSI) is also developing new fishing practices and gears that will help in minimizing the physical and biological degradation of marine ecosystem.

The diversified fishing methods like trap fishing, hook and line, bottom set vertical longline, tuna longline, mid water travel, pot fishing etc. have been introduced and successfully experimented with zero damage to the marine ecosystem. The Department understands that healthy aquatic habitats are vital to meeting sustainable development goals and hence, restoring and recreating them is a massive challenge.

The Department is committed to improve the biodiversity and maintain ecological balance to bring about a positive change through its environment friendly programmes, policies and practices in the country. It is thus the endeavor of the Department of Fisheries that the growth of the fisheries sector be recognized not only for its contribution towards the growth of the Indian economy but also for outcomes that are economically, socially and environmentally inclusive.

Additionally, the Department will continue to work with nations at international forums to collaborate keeping conservation of environment and ecosystem as priority and in best interest of all humankind.

### **India: Diesel prices highest in South Asia, say Indian fishermen**

<http://www.dailynews.lk/2021/06/18/local/251909/diesel-prices-highest-south-asia-say-indian-fishermen>

"Fishermen in the Indian State of Tamil Nadu have staged a protest against high diesel prices in India. Fishermen affiliated to the All Mechanised Boat Fishermen Association, staged a protest in Rameswaram on Wednesday, urging the Government to provide subsidies to them on diesel prices. "The price of diesel in India is the highest among all countries. At this cost, the fishermen cannot break even.

Every time we venture into the sea, we spend 250 litres to 600 litres of diesel. The fishermen cannot make up for the increased cost of fuel by selling fish at higher costs," he said. The fishermen demanded that the Centre supply diesel without excise duty and road cess to the fishermen to protect their livelihoods. They also appealed to the Centre to stop Sri Lanka from

dropping bus scrap into the sea, along the Palk Strait, and said this would affect the marine ecology and also damage Indian fishermen's boats and their nets.

The association's president, P. Sesuraja said that the Sri Lankan Government claimed that it was dropping scrap of buses within its own territory. However, this was close to the areas where traditionally Indian fishermen go fishing. "The scrap can also be washed into Indian territory by the strong currents.

The iron scrap can damage the costly fishing nets and the wooden boats, and cause huge losses to our fishermen," Mr. Sesuraja said. He said traditionally only wooden logs or artificial coral reef were dropped into the sea to enable breeding of fish. However, the iron scrap was being put in the sea with a motive to cause loss to Tamil fishermen, he alleged.

### **India: Dried Fish Matters is composed of eight teams across India, Sri Lanka, Thailand, Bangladesh, Cambodia and Myanmar**

<http://www.themanitoban.com/2021/03/u-of-m-prof-leads-project-analyzing-dried-fish-social-economy/41648/>

"University of Manitoba anthropology professor Derek Johnson is at the helm of a long-term project studying the social economy of dried fish. Dried Fish Matters is composed of eight teams across India, Sri Lanka, Thailand, Bangladesh, Cambodia and Myanmar, with ties to local universities, governments and advocacy groups as well as other collaborators around the globe, including other U of M professors.

The project is funded by a seven-year Social Sciences and Research Council of Canada (SSHRC) partnership grant, which allows academics to work with government and community partners. Johnson saw a gap in research and policy regarding dried fish and its importance in many populations and economies. "Historically, fish drying was the only way that you could actually distribute fish over long distances, so prior to refrigeration and freezing technologies, this is the only way that people in hinterland areas would have had access to fish," he explained. "It's also important at the present because fish are extremely nutritious.

They are chock-full of a range of nutrients that we as humans require? they have protein, but they also have a range of vitamins, micronutrients, fatty acids, which are all essential for human health [...] Fish drying has the added advantage that it reduces the weight of the fish, and therefore they're all the more easy to transport. It also concentrates the nutrients." In addition to the geographic teams gathering data in each location, the project involves an interdisciplinary analysis team branching over three thematic focus areas to put the data into context.

"It's not just the nutritional contribution that dried fish make, but it's also the economic, cultural, social contributions the dried fish make," Johnson said. "We're trying to broadly come to an understanding of how dried fish help to bring people together around a variety of different qualities of this particular product." The first and largest thematic group brings together economists, sociologists, anthropologists and geographers to study the social economy of dried fish.

“This is looking at broad social science questions around the complexity of human engagements with dried fish,” Johnson explained. “So, economic issues, but also how economic relationships around dried fish are deeply shaped by geographical difference, cultural difference, gender as well, as a key aspect of their research.” He explained a particular interest is the division of labour between genders when it comes to dried fish, with men often catching the fish and women processing.

The second group focuses more on food and nutrition security, with topics such as variation in consumption trends and the cultural perceptions surrounding nutritional values of dried fish. “Again, there’s a strong gender component there,” Johnson said. “We’re looking to see, for example, do men and women consume similar quantities of fish on a daily or monthly basis? Do children get equal access to fish as do adults? And then extrapolating from those kinds of analyses to see whether subsets of populations are getting the full nutritional benefits from fish consumption [that] they could, and whether there are inequalities in fish consumption between different population segments.”

The third group deals with policy and governance, adapting the project’s findings into more accessible formats so community organizers, policymakers and politicians can take data and analysis into account. Johnson initially grew interested in fisheries through a government placement in rural New Brunswick, where fishing was one of the key economic activities. He returned to the area for his master’s research on historical evolution in how people made a living, getting to know the rhythms of life in fisheries.

During his PhD and postdoctoral studies, Johnson ventured a little further from home, doing research on fishing in coastal India. He realized a number of academics were simultaneously working on projects focused on fish and nutrition security all over the world. This led to the recent Small Fish Seminar on Feb. 15 and 16, at which Dried Fish Matters appeared alongside groups focusing on Indonesia, Africa and other regions. “There’s a growing argument that small fish in particular have a really crucial role to play in nutrition security globally,” Johnson said. “Particularly for poor populations, particularly for children, particularly for pregnant and lactating women, small fish are demonstrably really, really important because of the micronutrients that they provide.”

The COVID-19 pandemic presented a logistical nightmare for Johnson and the rest of the Dried Fish Matters team. Almost all the local teams were about to begin fieldwork when restrictions hit, which meant results were delayed by a minimum of five months. In addition, the industry and social chains suffered dramatically, with fishers unable to actually fish in addition to caught fish being wasted due to not getting to markets. With research timelines uncertain and no way to hold in-person meetings like the group was used to, Johnson decided to call an all-project Zoom meeting despite some uncertainty about how effective virtual communication might be.

“It was eye-opening, how successful it was,” Johnson said. “There was this, from my point of view, completely unexpected immediacy to the meeting [...] We immediately got down to work and started planning the response to the whole [COVID-19] disruption of the research, and that actually kicked off a regular series of meetings that we’ve had at the project level, at the research

team level and working group level that I feel like have really revolutionized the project. “We now have an intensity of communication in the project that we just didn’t have previously, and it’s given a real new energy to the project.”

### **India: Dust from the Arabian Desert is melting Himalayan glaciers and affecting the seas**

<https://scroll.in/article/1003244/dust-from-the-arabian-desert-is-melting-himalayan-glaciers-and-affecting-the-seas>

"Asia’s largest freshwater reserve is disappearing. In the Hindu Kush Himalayan region, which is warming by 0.3 degrees Celsius-0.7 degrees Celsius above the global average, global heating is melting the glaciers that blanket the planet’s highest peaks. Scientists now know that this catastrophic melt is being exacerbated by dust blowing from West Asia. Moreover, they warn that as well as affecting Asia’s largest rivers, which are born from Himalayan glaciers and bring life and livelihoods to a quarter of humanity, the effects of glacial melt will extend well beyond the Himalayas, also impacting the Arabian Gulf region in turn. Winds that sweep across Asia link the Hindu Kush Himalayas and the Gulf in an interconnected system.

Globally, around 5 billion tonnes of desert dust from arid regions is swept into the atmosphere every year. Today, scientists can “understand the origins of this dust, where it lands, and how it interacts with local environments” thanks to satellite data and computer models, according to Chandan Sarangi, an earth system scientist at the Indian Institute of Technology Madras. Dust blows onto the High Mountain Asia region from the Arabian Gulf, and as far away as North Africa and the southwest Arabian Peninsula, due to regional air currents and prevailing westerly winds. Winds that sweep across Asia link the Hindu Kush Himalayas and the Gulf in an interconnected system.

Graphic: The Third Pole These dust particles, Sarangi says, travel long distances at an altitude of 2 km-5 km and reach the High Mountain Asia during summer. Dust from arid regions such as the Thar desert in Pakistan and Saudi Arabia “gets lofted above the boundary layer [the lowest part of the planet’s atmosphere] of Earth by convection and gets transported to far places with wind at altitudes and deposited mainly above 3 km”. The dust particles are thus deposited in the high Himalayan mountains, blanketing glaciers in a layer of particles that are darker than snow.

#### Glacial melt

Particulate matter, black carbon and dust present a problem for Himalayan glaciers because of their low albedo. Clean glacial snow has a high albedo, which means that it absorbs very little sunlight and reflects most of the incoming rays back into space. Darker dust and soot, however, absorb much more of the incoming solar radiation, which warms and therefore melts the glaciers below. In many areas, aerosols like dust and soot significantly exacerbate the impact that atmospheric greenhouse gases have on glacial melt, producing quicker and more direct warming effects.

Black carbon from vehicle exhausts, waste burning and the combustion of biofuels in South Asia’s big cities was previously thought to be the primary aerosol driving glacial melting in the

Himalayas. However, a more recent study published in November 2020 by a team of international researchers including Sarangi found that at altitudes above 4,000 metres, dust is a greater driver of melting than black carbon. Sarangi notes that “the majority of black carbon reaching High Mountain Asia is emitted by anthropogenic activities in the Indus and Gangetic plains, which gets deposited at 0-3 km elevations.

Hence, black carbon deposition is higher than dust below 3 km elevation and vice versa?”. While dust blowing from West Asia to the high Himalayas is not a new phenomenon, it has only recently been understood to be one of the primary causes of glacial melting.

Further research is needed to better understand if the amount of dust being blown across the continent has increased over the years, or if the same amount of dust is now having a larger impact on glaciers due to higher temperatures. Such research would not only help to better determine the role of dust in the accelerating melting of glaciers in the Himalayas, but could also help in the design of interventions needed to minimise its impacts.

### Sea changes

The winds that carry dust across the continent to the Himalayas also bring the consequences of glacial melting back to the Gulf region. Warming mountains mean warmer winds, which have begun to fundamentally shift monsoon patterns across Asia and West Asia. Monsoons are integral to the ecosystems of the Arabian Gulf. John Burt, a marine biologist and professor at New York University Abu Dhabi explains that “widespread coral bleaching in the Gulf is the result of low shamal winds [strong north-westerly winds that blow across West Asia] during summer.

Those shamal winds are generated by a pressure gradient driven by the monsoon. If the monsoon weakens, so will shamals, leading to more frequent and/or severe coral bleaching in the Gulf region”. Coral reefs in the Gulf are increasingly vulnerable, and every effort should be made to protect this ecosystem from further damage.

A study published in Nature last year linked shrinking glaciers to the decline in fisheries in the Arabian Sea, caused by the same shifting winds. Altered monsoons have created the perfect conditions for a single-celled algal organism called *Noctiluca scintillans* to multiply by the millions. Harmful algal blooms suck oxygen from the water, creating oxygen deficiencies and suffocating fish populations.

Algal blooms exacerbate coral bleaching and replace the indigenous algae that are a source of food for fish. Scientists warn that the spread of *Noctiluca* driven by changes in the Himalayas poses a significant threat to local fisheries in the Gulf, creating wide-reaching implications for food security. Burt warns that the same algal blooms that are choking fisheries also threaten the United Arab Emirates’s freshwater supply.

“*Noctiluca* is a major issue for desalination plants, where blooms will clog reverse osmosis filters and shut down operations. This happened with another algal bloom in early 2009, when a red tide resulted in closure of desalination facilities on the UAE’s east coast. The result was loss

of potable water for much of the northern Emirates,” Burt said. Through intercontinental winds blowing in both directions, the crisis facing the Himalayas’ glaciers is intimately linked to the Arabian Gulf in both its causes and effects. It is clear that the fate of the two regions is intertwined and that we cannot continue to view climate change in the Himalayas as a solely regional threat.

In addition to the direct ecosystem-level link between the Himalayas and the Gulf, socio-economic impacts, particularly through increased stress in South Asia, are just as pressing. While it may be difficult to limit the dust that ends up in the Himalayas and address the associated ecosystem impacts in the Arabian Gulf, more research is needed to fully explore the links between the regions, and what can be done to mitigate climate impacts at both ends of the system. What is clear is that there needs to be more dialogue with the Gulf countries to support timely interventions, including in research, to come up with solutions before it is too late.

### **India: Erosion of coastlines to hit livelihood**

<https://www.dailypioneer.com/2022/india/erosion-of-coastlines-to-hit-livelihood.html>

"Frequent cyclones and sea level rise besides anthropogenic activities such as construction of harbours, beach mining and building of dams are taking a toll on the country’s coastline, the Government said in Parliament on Thursday, indicating the livelihood threats looming large on the fisheries communities depending on resources from the sea.

The Government has cited an analysis for the period between 1990-2018, revealing that at least 33.6 per cent of the 6,632 km long coastline of mainland is under varying degree of erosion.

Dr Jitendra Singh, Union Minister of Science and Technology, said the National Center for Coastal Research (NCCR), has been monitoring the shoreline erosion since 1990 using remote sensing data and GIS mapping techniques. “Of the total 6,632 km long Indian coastline of the mainland which has been analyzed from 1990 to 2018 and it is noted that 33.6% of the coastline is under varying degrees of erosion,” he said in a written reply to a question in the Rajya Sabha on Thursday.

The reasons for coastal erosion include increase in frequency of cyclones and sea level rise and anthropogenic activities such as construction of harbours, beach mining and building of dams. He further said that there are 526 maps prepared for the entire Indian coast for identifying areas vulnerable to coastal erosion in 1:25000 scale along with 66 district maps, 10 state /Union Territories maps.

A Report on “National Assessment of Shoreline Changes along Indian Coast” was released in July, 2018 and shared with various Central and State government Agencies and stakeholders for implementing shore line protection measures. Innovative coastal erosion mitigation measures at two pilot locations have helped.

These are Puducherry Beach Restoration Project, Puducherry where the submerged reef has been implemented by the Environment Ministry and beach nourishment implemented by the

Puducherry Government. “This helped in restoration of the 1.5 km long city beach after 30 years and helped in improving tourism and fishing activities in addition to protection of the coast during extreme cyclonic events,” the Minister said. Another project is Kadalur Periya Kuppam in Tamil Nadu.

“An offshore submerged dyke was implemented. This helped in protection of three fishing Villages during extreme cyclonic events and restored lost beach that is being used for landing of fishing boats and other fishing activities.”

### **India: EU, US oppose India’s demand for special and differential treatment in fish subsidy talks**

<https://economictimes.indiatimes.com/news/economy/foreign-trade/eu-us-oppose-indias-demand-on-fish-sops/articleshow/84484635.cms>

"WTO member countries have failed to reach a consensus on a proposed global deal to end harmful fishing subsidies at a key meeting after the US and European Union opposed India’s demand for special and differential treatment (S&DT) for all developing countries. With this, it would be difficult to clinch a deal ahead of the crucial World Trade Organisation ministerial conference in December, officials aware of the negotiations told ET.

Wide differences remain in countries’ positions on S&DT and the draft text, which is the base for all talks, does not reflect the principle of common and differentiated responsibility, they said. “Wide differences exist in the positions and the draft text doesn’t reflect our key concerns on common but differentiated responsibilities,” one of the officials said. WTO had on Thursday convened a meeting of trade ministers of all member countries to discuss the agreement.

The US said it believes that “a blanket approach with permanent carve-outs is neither appropriate nor effective given the purpose of this agreement”. “We are prepared to consider flexibilities for particularised situations that do not result in the pitfalls of a blanket approach,” US trade representative Katherine Tai said. “Flexibilities for certain developing county members with demonstrated needs can serve a valid purpose.”

EU trade commissioner Valdis Dombrovskis said though he agrees that vulnerable fishers in developing countries could benefit from some type of flexibility, this cannot mean a blanket carve-out. “We want to underline that the geographical scope of any flexibilities for livelihood fishing cannot go beyond territorial waters or 12 nautical miles,” he said.

Their stance is significant as India has said that limiting S&DT to poor and artisanal fishermen only is not appropriate, acceptable or affordable. Sustainability based approach for subsidies that contribute to overcapacity or overfishing is “unequal, unfair and unjust” as it would lead to capacity constraints for developing countries, Goyal said at the virtual meeting on Thursday while calling for an equitable global pact to end harmful fish subsidies.

### **India: Expect Sri Lanka to remain mindful of bilateral ties, says India on port project**

<https://www.thehindu.com/news/national/expect-sri-lanka-to-remain-mindful-of-bilateral-ties-says-india-on-port-project/article34845728.ece>

"With Sri Lanka moving ahead with the China-backed Colombo Port City project, India on Thursday, June 17, 2021 said it expects that the island nation will remain mindful of their "excellent bilateral cooperation", including for mutual security in the maritime domain. Explained | Why has the China-backed Colombo Port City project come under attack from the Opposition and citizens?

Asked about the project at an online media briefing, Ministry of External Affairs (MEA) spokesperson Arindam Bagchi said India has been closely following the recent developments from its security perspective. The country has also taken note of the concerns raised in Sri Lanka regarding several aspects of the framework for the Colombo Port City, he said. "

"We expect that Sri Lanka will remain mindful of our excellent bilateral cooperation, including for mutual security in our shared environment, which includes the maritime domain," Mr. Bagchi said. His remarks come weeks after the Sri Lankan Parliament approved the controversial Colombo Port City Economic Commission Bill, with the government saying the Chinese-backed project would bring in investment and boost the island-nation's economy.

Fears of Chinese colony

The Opposition parties, however, had alleged that the bill would lead to the creation of a Chinese colony in Sri Lanka. The USD 1.4-billion Colombo Port City project, expected to play a key role in China's ambitious "Maritime Silk Road" project in India's backyard, is said to be the single-largest private sector development in Sri Lanka. China has built the port city on reclaimed sea, adjoining the Port of Colombo.

On India-assisted projects in Sri Lanka, Mr. Bagchi said the country has a very extensive portfolio of partnership development projects in the island nation and it is in regular contact with the Sri Lankan authorities regarding their implementation. To a separate question on whether Prime Minister Narendra Modi could visit the United States before year-end, he said he does not have any information on this and an announcement of such kind of visits is made at an appropriate time.

On reports that some senior leaders from Myanmar have taken shelter in the northeastern states, Mr. Bagchi said the Home Ministry should be contacted for queries of this nature. "As regards the situation in Myanmar, we support the ASEAN initiative and are in touch with the ASEAN countries," he said.

To a question on media reports about US-based Pakistan-linked charitable organisations collecting funds in the name of helping India during the COVID-19 crisis, which could be used for sponsoring terror attacks, Mr. Bagchi said, "We have seen media reports in this regard.

I do not have any further details to share for the moment and we are trying to ascertain more information." Asked if India would join the "Build Back Better World" (B3W) partnership

announced at the G7 meet, he said the relevant government agencies would study the proposal and engage, as appropriate, at a later stage.

To a separate question on media reports about India being the weakest link of the QUAD grouping, Bagchi said by now, the QUAD and the world know the country's value. "The article in question is clearly uninformed. Whether the article has an inherent bias has been answered through a tweet by Lisa Curtis, who herself has been quoted in it but has dissociated herself from the overall message of the article," the MEA spokesperson said.

### **India: Exports 11,49,341 tonnes of seafood during FY21**

<https://timesofindia.indiatimes.com/business/india-business/india-exports-1149341-tonnes-of-seafood-during-fy21/articleshow/83259081.cms>

"The Covid pandemic and sluggish overseas markets cast their shadow over India's resurgent seafood sector as the country exported 11,49,341 tonne of marine products worth Rs 43,717.26 crore (US\$ 5.96 billion) during FY 2020-21, registering a contraction of 10.88 per cent in volume as compared to a year earlier.

USA, China and the European Union (EU) were the leading importers, while frozen shrimp retained its position as the major export item followed by frozen fish. In 2019-20, India exported 12,89,651 tonne of seafood worth Rs 46,662.85 crore (US\$ 6.68 billion), marking a decline of 6.31 per cent in rupee terms and 10.81 per cent in dollar value in 2020-21.

"The pandemic drastically affected seafood exports during the first half of the year, but it revived well in the last quarter of 2020-21. Also, the aquaculture sector performed better during this fiscal by contributing 67.99 per cent of exported items in dollar terms and 46.45 per cent in quantity, which is 4.41 per cent and 2.48 per cent higher, respectively when compared to 2019-20," said K S Srinivas, Chairman of the Marine Products Export Development Authority (MPEDA).

Frozen shrimp contributed 51.36 per cent in quantity and 74.31 per cent of the total dollar earnings. USA remained its largest importer (2,72,041 tonne), followed by China (1,01,846 tonne), EU (70,133 tonne), Japan (40,502 tonne), South East Asia (38,389 tonne), and the Middle East (29,108 tonne).

However, shrimp exports declined by 9.47 per cent in dollar value and 9.50 per cent in quantity. The overall shrimp export was 5,90,275 tonne worth 4,426.19 million dollars. The export of Vannamei (whiteleg) shrimp decreased from 5,12,204 tonne to 4,92,271 tonne in 2020-21. Of the total Vannamei shrimp exports in dollar value, 56.37 per cent was exported to USA, followed by China (15.13 per cent), EU (7.83 per cent), South East Asia (5.76 per cent), Japan (4.96 per cent) and the Middle East (3.59 per cent).

Japan, the major market for Black Tiger (*Penaeus monodon*) shrimp, had a share of 39.68 per cent in dollar terms, followed by USA (26.03 per cent), South East Asia (9.32 per cent), EU (8.95%), the Middle East (6.04 per cent) and China (3.76 per cent). Frozen fish, with a share of

16.37 per cent in quantity and 6.75 per cent in dollar earnings, retained the second position in exports basket though its shipments plummeted by 15.76 per cent in quantity and 21.67 per cent in dollar terms. 'Other Items', the third largest category that largely comprised Surimi (fish paste) and Surimi analogue (imitation) products, showed a marginal growth of 0.12 per cent and 0.26 per cent by quantity and rupee value, respectively, but declined in dollar terms by 5.02 per cent.

Frozen squid and frozen cuttlefish exports declined in volume by 30.19 per cent and 16.38 per cent, respectively. However, dried items showed an increase of 1.47 per cent and 17 per cent in quantity and rupee value, respectively. Shipments of chilled items and live items, which were negatively affected due to the reduced air cargo connectivity in the pandemic situation, fell by 16.89 per cent and 39.91 per cent in volume, respectively.

Capture fisheries contribution reduced from 56.03 per cent to 53.55 per cent in quantity and from 36.42 per cent to 32.01 per cent in dollar value. However, tilapia and ornamental fish performed well with 55.83 per cent and 66.55 per cent increase in quantity and an uptick of 38.07 per cent and 14.63 per cent in dollar earnings, respectively.

Tuna showed 14.6 per cent increase in quantity, but its dollar earnings downed by 7.39 per cent. Crab and scampi exports reduced both in quantity and value. USA, with imports of 2,91,948 MT, continued to be the major importer of Indian seafood with a share of 41.15 per cent in dollar terms. Exports to that country grew by 0.48 % in rupee value but declined by 4.34 per cent and 4.35 per cent in quantity and dollar terms, respectively.

Frozen shrimp remained the principal item exported to USA while exports of Vannamei shrimp showed an uptick of 6.75 per cent in quantity. However, its import of Black Tiger shrimps decreased by 70.96 per cent and 65.24 per cent in quantity and dollar terms, respectively.

### **India: Exports Rs 27,575 cr worth of marine products in Apr-Sept: Centre**

[https://www.business-standard.com/article/economy-policy/india-exports-rs-27-575-cr-worth-of-marine-products-in-apr-sept-centre-121120700904\\_1.html](https://www.business-standard.com/article/economy-policy/india-exports-rs-27-575-cr-worth-of-marine-products-in-apr-sept-centre-121120700904_1.html)

"The country exported 6.05 lakh tonnes of marine products worth Rs 27,575 crore in the first six months of the current financial year 2021-22 with the most exports undertaken from Andhra Pradesh, Parliament was informed on Tuesday.

In his written reply to a query in the Lok Sabha, Minister of Fisheries, Animal Husbandry and Dairying Parshottam Rupala said the highest quantity of 1.70 lakh tonnes of marine products valuing Rs 10,109.72 crore was exported from Andhra Pradesh during the April-September 2021 period.

About 83,995 tonnes worth Rs 3,309.82 crore marine products were exported from Kerala, 72,795 tonnes worth Rs 1,599 crore from Gujarat, 67,636 tonnes worth Rs 2,795 crore from Maharashtra, and 66,986 tonnes worth Rs 3,660.71 crore from Tamil Nadu in the said period, according to the data placed before the Lower House by the minister.

During the financial year 2020-21, the country had exported 11.49 lakh tonnes of marine production valuing Rs 43,720 crore, the minister added. This is provisional export data as reported by the Marine Products Export Development Authority (MPEDA). The minister replied ""no sir"" when asked if there was a decline in employment opportunities for fishermen and allied workers.

Rupala said the Centre's the Pradhan Mantri Matsya Sampada Yojana (PMMSY) has a plethora of beneficiary-oriented activities inter alia, envisages generation of about 55 lakh direct and indirect employment opportunities in fisheries and aquaculture sector over a period of five years. The country's fish production stood at 141.64 lakh tonnes during the financial year 2019-20.

### **India: Extends assistance to Madagascar in rural and agricultural development**

<http://www.uniindia.com/~/india-extends-assistance-to-madagascar-in-rural-and-agricultural-development/World/news/2359709.html>

"India has extended valued assistance to Madagascar in Rural and Agriculture development by deployment of its senior scientists in related sectors, who completed their jobs successfully. Two Indian scientists Kurapati Penchala Vineeth, Project Scientist (Image Processing & GPS) and Mr Ashish Babu, Project Scientist (GIS), deployed in Madagascar by the Govt of India at the Centre for Geospatial Application for Rural Development (CGARD) have completed their assignment successfully.

The Centre was inaugurated by President Ramnath Kovind during his visit to Madagascar in March 2018 recognizing the need of development of geospatial technology infrastructure for GIS, satellite remote sensing and global positioning based information capturing, training and capacity building, planning-implementation-monitoring and evaluation methodologies, application development in agriculture, forestry, fisheries, land records, surveying, resource development and disaster management , a CGARD was established in Madagascar under Ministry of Agriculture, Livestocks and Fisheries of Madagascar with Indian grant assistance.

The Indian experts assisted in ascertaining National Land use and Land cover, Crop Acreage, Irrigated crop area, Yield estimation, Drought analysis, Land suitability for Maize farming, Deforestation, Wildlife habitat suitability mapping, Mineral exploration, Wind farm site suitability based on multi-criteria analysis, National Mangrove Mapping, Mapping of Coral reefs, Prediction of Potential Fishing Zones (PFZ's), Variation of water turbidity seasonally etc. for Madagascar.

The Indian scientists also assisted other departments under the Ministry of Agriculture of Madagascar in areas such as assets mapping for Appui au Renforcement des Organisations Professionnelles et aux services Agricoles (AROPA), Développement des Filières Agricoles Inclusives (DEFIS), Projet d'Extension du Périmètre du Bas Mangoky (PEPBM) mapping the existing, extension of rice area and Mapping the extension and rehabilitation of rice plains which was part of the Presidential project.

They also presented two papers on Flood Mapping and Damage Assessment, Studying the impact of mangrove increment on accreted coastal area in 41st Asian Conference on Remote Sensing, 2020 and conducted training programs to the staff of Ministry of Agriculture, Livestocks and Fisheries of Madagascar on basics of Remote Sensing, GIS and GPS.

The CGARD will continue to function under the supervision of the Ministry of Agriculture of the Govt of Madagascar and will further contribute in Agricultural and Rural development in Madagascar.

### **India: Extreme rainfall in June may lead to longer flood duration, warn experts**

<https://www.downtoearth.org.in/news/climate-change/extreme-rainfall-in-june-may-lead-to-longer-flood-duration-in-india-warn-experts-77668>

"The arrival of monsoon — marked by extreme and untimely rainfall in June — has flooded major rivers like the Ganga and Yamuna as well as their tributaries. This has caused floods in several states such as Bihar and Uttar Pradesh. Uttarakhand experienced cloudburst and floods in 2013. This is the first time since then that north India is seeing heavy rainfall in June. The rains have led to severe flood-like conditions in the region.

Global warming, urbanisation and loss of traditional flood control reservoirs may be among the reasons behind the anomaly, according to experts and researchers. Down To Earth analysed the data for June month (2010-2021) from various meteorological departments (sub-division). India witnessed record rainfall in June 2021, excluding the 2013 rainfall. This worked as a catalyst for the flood-like conditions in various parts of the country. Himalayan rivers of Uttarakhand, Uttar Pradesh and Bihar reached near danger mark in mid-June.

States such as Gujarat and Goa in the western region and Assam in the northeastern region are already experiencing floods. Several villages situated on the banks of the gushing rivers have experienced loss of life and property. Situated near Sharda river in UP, Manpur Karhiya is a village with a population of 20,000.

Bikau Nishad from Manpur said floods in June have occurred after 20 years. "The release of water in Banbasa (Uttarakhand) inundated our fields. I cultivated gourd in a six-acre field, which is now spoiled. The situation is similar for other farmers. The government has not extended any help till now," he said.

Several regions of UP and Bihar witness floods every year in August. This year, flooding started early from mid-June. Bihar's Kosi region is already flooded with water. UP has the highest number of flood-affected people, according to official data. At least 63 villages have been flooded, and 18,620 people affected. Gandak (Bihar), Ganga, Sharda and Ghaghara (UP) are flowing about 0.12 m to 0.57 m above the danger level, according to a report by the National Emergency Response Centre.

Ganga near Badaun district; Sharda in Lakhimpur and Kheri; Ghaghara in Ayodhya and Barabanki are gushing above danger levels. Between June 21 and June 24, Desang river flowed

through the Sibsagar district of Assam and Rishikesh river in Uttarakhand, flowing above high flood level (HFL), the Central Water Commission tweeted. Ghagra river in the Ballia district has been flowing at a high flood level too. The CWC did not, however, mention Uttarakhand floods in their flood bulletin. Earlier in May this year, Gujarat, UP and Bihar witnessed heavy rainfall due to cyclones.

In May, Gujarat received 1,130 per cent more rainfall, while the Kutch and Saurashtra region received 1,476 per cent more rainfall, according to India Meteorological Department. Similarly, rainfall departure in Bihar, eastern and western UP was 359 per cent, 467 per cent and 325 per cent respectively. He added that heavy rainfall lashed Nepal and other valley regions as well. This has led to rivers overflowing in India. Narayani River (Nepal), known as the Gandak river in Bihar, has also been flowing at a dangerous flood level.

Similarly, heavy rainfall in Uttarakhand has resulted in flooding UP's Sharda river. On June 24, the IMD forecasted that monsoon in UP and central India may become weak. It added that Assam and other northeastern states, which are already facing the brunt of heavy rainfall, may witness even more rainfall in the next few days. Dinesh Mishr, who works on the history of flood, drought and famine, said: "People tend to forget these disasters soon.

Bihar is devastated by flooding every year in May and November. To say that floods in June are a new thing is wrong. Sometimes, it starts flooding even in May as well. There is no iota of doubt that climate change is real. The government tries to hide these facts." DTE analysed the data for major floods of the last decade: as many as 12 major floods had occurred, accruing a huge loss to life and property.

Untimely and heavy rainfall leads to devastating flash floods. In a paper published in Earth System Journal (April 14, 2021), lead author Anja Katzenberger warned how with just a one-degree Celsius rise in global warming monsoon rainfall can increase five per cent. Another research in Nature said the average rainfall is decreasing with the weakening of the monsoon cycle in central India. But extreme or excessive rainfall is rising.

The reasons behind both of them could be similar. The rise in the magnitude and intensity of the El-Nino effect, change in land use and air pollution could be the reason behind extreme rainfall. The report warned that extreme rainfall events can increase by 10 to 30 per cent in Central India. High flood mortality:

#### A big concern

Floods are considered the worst ecological disaster due to the death and devastation caused. DTE, in an earlier analysis of flood mortality in India, found that Uttarakhand recorded the highest mortality due to floods: As many as 24,000 Indians died in floods in a decade (2008-July 23, 2019).

According to research published in an international journal over flood mortality which occurred between two decades (from 1995 to 2005): "Like China, India saw a sharp rise in the number of floods decade-on-decade, but unlike China, India's flood mortality increased, with 90 floods

claiming 15,860 lives in 2006-2015, up from 13,660 lives lost in 67 floods the previous decade. If India could emulate China in terms of reducing flood deaths, the declining global trend in flood mortality seen over the past decade could perhaps be extended.”

Experts consider forecasting as a major tool of management to avoid the damage caused by floods. But there are challenges: Water is a state subject and hence, the Centre as well as the states do not easily come to a consensus over water management. Concerns are being raised over the loss of life and property due to recurrent extreme rain events in Uttarakhand.

On May 5, 2021, the Central Water Commission tweeted: “Upon receiving a request from J&K, flood forecasting for Jhelum river was started from May 2019. If requested by the Uttarakhand and Himachal Pradesh governments we will be willing to do the same.”

Sharad Jain of the National Institute of Hydrology told DTE, “The flash floods in Chamoli have indicated that flood forecasting should be done throughout the year. We need to be ready with certain standards. We need to be on alert as soon as these thresholds are crossed.

We are practising this in coastal areas.” But can these floods sustain for a longer duration? Sharad said it cannot be answered clearly. “But yes, due to poor drainage system (ponds and natural reservoirs) these floods do sustain for a longer duration now,” he said.

### **India: Fish and animal husbandry can change our economic picture**

<https://avenuemail.in/fish-and-animal-husbandry-can-change-our-economic-picture/>

"Along with agriculture, livestock farming, dairy, fisheries activities are an integral part of human life since the beginning of civilization. These activities improved the food system and helped in saving livestock. Due to climate and topography, the animal husbandry, dairy, and fisheries sector have played a major socio-economic role in India's growth. India's livestock and fisheries sector are quite wide. Overall, about 32% of the people live on livestock, fishing, and aquaculture.

Agriculture is 5% of GDP and national GDP. Livestock and fish products together contribute more than Rs 7 lakh crore towards agricultural production value. The average annual growth rate of the livestock and fisheries sector together is 6. The share of crops in the value of agricultural production is declining, but livestock and fish products are one of the fastest upwards. The development of entrepreneurship in the field of livestock and fisheries has proved to be a changer for the rural economy. Livestock has contributed 16% to the income of small farm families.

Livestock provides livelihood to two-thirds of the rural community. It also provides employment to about 8.8% of the population in India. It provides self-employment to millions of people, especially rural people. It has contributed significantly to the empowerment of women, increasing their income and role in society. It has become a boon for small and marginal farmers, especially in rainfed areas of India. With the view of livelihood at the center of poverty alleviation programs, this region can become Brahmastra.

A study by a food and agriculture organization has shown that investing one rupee in the livestock sector can lead to a profit of four rupees. It will be faster than many other areas of agriculture and will contribute to the main sector for the development of the Indian economy. Livestock productivity has been identified as one of seven sources. The inter-ministerial committee under the government is expected to meet the target of increasing income and doubling the income of farmers by 2022.

Farmers can increase their income by cultivating paddy, wheat as well as cattle and fish. The government has run many schemes for this. A lot of grants are also being received in these schemes. By doing this, they can strengthen their financial condition. Animal Husbandry Startup Grand Challenge, Appreciating innovations coming from villages to expand dairy, National Livestock Mission, ensuring quantitative and qualitative improvement in livestock, production system and capacity building of all stakeholders, Central Sector Plan on Blue Revolution, Integrated Animal credit card schemes by development and fisheries management (CSS) and small states like Haryana make this sector financially strong.

Still, some other steps can attract the farmers in this area. Plans for an integrated approach to increase inland fish production and to adopt large-scale culture-based capture fisheries and cage culture upstream of reservoirs and large water bodies, sustainable exploitation of marine fishery resources especially deep-sea marine farming Through resources and enhancement of marine fish production, encouraging public-private partnerships for sustainable livestock rearing, increasing commercialization of livestock products by improving technologies, increasing market connectivity, processing and storage centers, training, etc. can making it stronger and safer.

In a way, youths are getting hit in big cities in search of jobs, while many youths are making good profits from fisheries and animal dairy away from the hustle and bustle of the city. India is geographically the best country for fish farming. In almost every state, fishes are reared and animals are kept. But there is still a lot of potential for new experiments in this field. If the youngsters want to start a business, then they can start fish farming and animal dairy.

The loan is also being provided from Pradhan Mantri Mudra Yojana to do this work. For the eradication of poverty, the livestock and fisheries sector should not be just a vehicle. Rather, it should emerge as a platform to gain a livelihood. Looking at cattle, pigs or poultry may not seem glamorous, but earning good money is certainly an attractive proposition.

If the National Bank for Agriculture and Rural Development along with the National Center for Disease Control and Dairy Cooperative Societies set up a fund association and take it forward to a national level, it will surely change the economic picture of India.

### **India: Fish farmers refute damning report**

<https://thefishsite.com/articles/indian-fish-farmers-refute-damning-report>

"The study suggests that Indian aquaculture farms contain hazardous levels of metals like lead and cadmium in the water and are releasing their effluents directly into nearby canals and estuaries. It also criticised the intensive use of antibiotics and insecticides by the sector, referring to this as a "ticking time bomb".

Furthermore, according to the report – by the Federation of Indian Animal Protection Organisations (FIAPO) and All Creatures Great and Small (ACGS), a non-profit organisation offering shelter for animals in distress – unhygienic conditions lead to frequent disease outbreaks and significant commercial losses.

The authors of the study say that they reached their conclusions after researching 250 fish and shrimp farms in Andhra Pradesh, Tamil Nadu, Pondicherry, Gujarat, West Bengal and Orissa, Bihar, Jharkhand, Chhattisgarh and Assam.

### Industry backlash

However, the report has been widely criticised by the aquaculture sector. "The situation is not as alarming as claimed in the report. Unlike fishermen in Thailand, Indonesia and other countries, Indian farmers do not practise intensive aquaculture, which leads to severe pollution.

Most of the farmers in India have small and marginal land holdings and they practise modified, intensive and semi-intensive farming," says Archiman Lahiri, deputy director of the Marine Products Export Development Authority (MPEDA), the agency for the holistic development of seafood industry in India.

"Around 78,000 hectares of land is under aquaculture in Sundarbans area of West Bengal, out of which 70,000 hectares is under traditional farming. They do not even give artificial feed and depend on natural feeding. Some states, like West Bengal, have good tidal influence where water is automatically flushed out and doesn't require recycling," he adds. He also cites a study by scientists at Central Institute of Brackish Aquaculture (CIBA), Chennai, which was published last year and corroborates his claim.

### Exports rise while rejection rates fall

The study found India to be the largest exporter of frozen shrimp in the world, with shrimp exports worth \$4.4 billion during 2018. It also said that India is the second largest fish producing country in the world and is expected to grow total fish production by 24.6 percent to 13.4 million tonnes – of which aquaculture is expected to contribute 8.21 million tonnes – by 2030, a rise of 44.1 percent.

The report also says that India, along with China and Thailand, has managed to retain major part of its share in the US and Japanese markets. The unit rejection rate (URR) of Indian shrimp exports also declined and was 0.015, 0.03 and 0.02 for USA, EU and Japan – which is lower than the relative rejection rate (RRR) from Vietnam to the EU and Japan during this period. The percentage share of rejections of the total shrimp exports to US from India also consistently declined – from 6.1 to 0.31 percent during 2004-2017.

“Marine products from India have to pass through several rigorous parameters before being finally approved for sale in foreign land. Even a minor callousness can prove costly for the Indian sellers. India is now producing around seven lakh [700,000] tonnes of shrimp annually and Andhra Pradesh is a leading producer with 4.5 lakh [450,000] tonnes, followed by Gujarat and others,” asserted Dr KK Vijayan, director of CIBA-Chennai, which conducted the research.

“Some farms in West Bengal or Odisha might not be following the standards, but their contribution is negligible. The farm owners in high shrimp producing states are following best technology and international standards. The [FIAPO] report is non-scientific and it could just add to the headache of manufacturers who are following high ethics. It might also lead to a drop in international prices of shrimp.”

#### Post-Covid concerns

Supratim Chowdhury, associate professor at West Bengal University of Animal & Fishery Sciences, felt that the study might have a negative impact on the aquaculture industry of India, which is currently limping back to normality after severe losses caused by the lockdown last year. “The industry has already faced a deadly blow when the exports were completely stopped due to the pandemic-induced lockdown.

The market is slowly trying to breathe and the report might just add to the woes of the several thousands of fishermen and other people depended on it for livelihood. There might be some wrongdoers but it doesn't present the entire picture,” says Chowdhury. Even fishermen's bodies have raised issues with the FIAPO report, noting that farmers are not the only ones to blame. “The government has to be equally blamed for the present scenario as it has paid attention to quantity and not the quality.

Excessive waste from industrial units is polluting water bodies. The same water is then used for shrimp cultivation,” says Debashish Shyamal, national council member of the national platform for Small Scale Fish Workers. “The report is one-sided. It should have brought into book the industries and government also. We cannot stop cutting fish, as it is our livelihood. Trees are also cut in huge quantity, which is a major cause of environment degradation. The report is actually against killing of animals rather than raising our issues. There are several farmers who are following healthy practises. They are feeling completely let down by this report,” he adds.

#### Improved traditional farming

Fish farmers claim to be following ethical farming practices and providing healthy food to consumers. Uttam Khatua, who has been a fish farmer for the past three decades at Baishnab chak village in East Medinipur district of West Bengal, around 100 kilometres from Kolkata, is a case in point. The 53-year-old has five ponds. He releases carp fry into these at around 150-200 grams in July every year and harvests them at around 2-2.5 kg by the following April.

Khatua says that he ensures that the ponds remain clean and that the fish feed is of good quality. “We do not buy food from the market and rather prepare organic food with the help of rice

polish, blackstrap molasses, almond and mustard shells that is rich in protein and vitamins. It involves lot of hard work and labour but we aim to offer good food to the consumers rather than providing food that is full of harmful chemicals,” he says. He also pointed out the efforts that are made to ensure plastic is not thrown in the pond.

“The fish from our farm tastes well and the buyers book orders even before the catch. We make lesser profits but ensure that people consume healthy food. Traditional aquaculture is better than intensive aquaculture,” he argues. Gautam Das, 52, another fish farmer who lives in the neighbouring Gopalpur village, says that farming is done in rain-fed ponds, and steps are taken to maintain cleanliness.

“We keep on throwing limestone regularly for the cleanliness of the pond and the sides are also kept clean so that no dirt gets into the water. We also throw nets to do health checks of the fish to ensure there is no disease that might affect other fish also. The use of chemicals in fish can make the consumers sick. We refrain from such practises,” he says. The duo mostly grow golden carp, rohu, black carp and mrigal carp. They also motivate other fishermen to improve their traditional farming methods. Those involved in shrimp farming say that government should take strict against those industries and individuals polluting the water bodies.

“We do farming in sea water which is too dirty nowadays. We have to keep it clean by the use of medicines. The government should pay utmost attention in implementing stringent rules for industries and those responsible for destroying the environment, rather than putting the entire onus on us for unhealthy farming. The study should also have raised these points,” asserted Madhav Mondal, a shrimp farmer at Dadanpatrabar village in East Medinipur district. Threat of anti-microbial resistance looms large with the profligate use of antibiotics and insecticides for cultivation.

A study of aquaculture farms across 10 States, which account for the bulk of India’s production, has found “hazardous” levels of metals such as lead and cadmium in all of them. Profligate use of antibiotics and insecticides for cultivation and the threat of anti-microbial resistance have contributed making aquaculture a “ticking time bomb,” according to the authors of the study commissioned by the Federation of Indian Animal Protection Organisations (FIAPO) and All Creatures Great and Small (ACGS).

FIAPO and ACGS studied about 250 fish and shrimp farms across the nine highest producing States and one Union Territory. This included fresh and brackish water farms in Andhra Pradesh, Tamil Nadu, Pondicherry, Gujarat, West Bengal and Orissa, and freshwater farms in Bihar, Jharkhand, Chattisgarh, and Assam.

The objective of the study was to assess the condition of fish and shrimp farms in India on animal welfare, public health, and environmental hazard standards. All of the fish and shrimp farms had toxic levels of lead and cadmium, and all the shrimp farms that the surveyors visited were releasing this toxic waste water directly into the nearby canals or estuaries.

None of the fish farms had outlets for this water because of which dirty water was being recirculated, posing a grave threat to fish and human health. The unhygienic conditions led to

frequent disease outbreaks at half the farms visited, and which caused significant commercial losses. “At several instances, farmers were found to be selling these diseased fish and shrimps at the local market to minimise their losses. 65% of the fish farms had poor dissolved oxygen levels, which means fish were struggling to survive with high mortality rates.

Banned fish species like Red-bellied Pirahna and Catfish are farmed intensively in several states accompanied by heavy antibiotic use,” the authors note in their report. Varda Mehrotra, executive director of FIAPO said in a statement, “How we see fishes is extremely problematic.

There needs to be a central and state level regulatory framework for freshwater & brackish water aquaculture, and the Aquaculture Authority needs to be empowered to work directly with Animal Welfare Board of India and the Union environment ministry to strictly enforce aquaculture specific laws. Fishes deserve the same level of legal protection as other animals.

And, considering the amount of antibiotics used and the water quality, the Food Safety and Standards Authority of India should be empowered to not just regulate the end product, but the conditions in which the fishes are grown.”

The study is available at: <https://thefishsite.com/articles/indian-fish-farmers-refute-damning-report>

### **India: Fish markets in India driven by bycatch and sustained by subsidies**

<https://india.mongabay.com/2021/10/fish-markets-driven-by-bycatch-and-sustained-by-subsidies/>

"Twenty years ago, when Gurul Mangellipeli (45) used to go fishing, he would find many varieties of fishes such as pulusa (Indian shad), erameenu (Emperor), karava (Lethrinus) and more, just 20km from the shoreline. “Now the fishes are to be brought from at least 150-300 km away from the coast,” he complains as he docks his boat next to a line of other mechanised boats in hues of yellow and blue at the fishing harbour in Visakhapatnam, Andhra Pradesh (AP). Located on the east coast of India, Visakhapatnam (colloquially known as Vizag) is a busy city with high-rise residential and commercial buildings facing the sea. The once-fishing village is now dotted with petrochemical and pharmaceutical industries.

Yet, fish and fishing remain central to Vizag’s economy. When it comes to marine exports, Vizag port is considered one of the top contributors. AP is the largest exporter of fish and shrimp in the country. According to the Handbook on Fisheries Statistics of 2020, India’s fishery sector has been growing steadily, led largely by an increase in aquaculture production, which blossomed only in the last two-three decades, with a growth rate of over 10% year-on-year. The Government of India seeks to promote aquaculture, or the cultivation of targeted commercial fishes in ponds and inland water bodies, under its Blue Revolution scheme.

One of their narratives has been that this would ease the pressure on fast-depleting resources of wild fish species. However, recent reports and studies suggest that, since many of the farmed fishes feed on wild-caught fishes, aquaculture supplements marine capture and leads to the

further exploitation of marine resources. Joeri Scholtens, an associate professor at the University of Amsterdam with expertise in fisheries governance in South Asia, comments on the rate of growth in India's aquaculture business, saying, "An important factor in making this possible is the accessibility of fishmeal and the marine subsidies."

Bycatch and waste fishes which were previously used in pig farming and poultry are extensively being routed to Fish Meal and Fish Oil (FMFO). About one third of the entire marine landings in India goes to the fish meal industry. - Fishermen can no longer rely only on traditionally targeted seafood species meant for human consumption. To remain lucrative, they also rely on the low-value bycatch.

The fisherfolk understand that they need more sustainable fishing methods, but they require more subsidies and support from the government to make their businesses more profitable. Churning profits from waste fishes "Once upon a time (during the 1980s), the Vizag fish harbour hosted about 100 boats, now the count has reached 750," says PC Apparao, President, AP Mechanised Fishing Boat Operator's Association. According to Apparao, "the pollution from the nearby industries has already killed fishes and led to the depletion in catch."

"On top of it", he adds, "if many fishing fleets compete for the limited fishes in the ocean, you can imagine the pressure on the fish stocks." Things began to change drastically after the 2004 Tsunami, noted Dr S Sandilyan, former fellow on Invasive Alien Species (IAS) at the Centre for Biodiversity Policy and Law (CEBPOL), National Biodiversity Authority (NBA). Sandilyan is based in Chennai, the capital of neighbouring state Tamil Nadu, and fifth largest fish producer in the country.

"Aid which followed the disaster, unintendedly made deep sea trawling feasible. The money which came from government, NGOs and international agencies to rehabilitate the fishers, also helped them to buy better mechanised fibre boats replacing the traditional (Catamaran) boats. While earlier three-four fishermen shared a boat, now almost everyone has one, leading to overexploitation of marine resources," he says.

Looking back on his earlier fishing days, Apparao recollects: "Earlier, with 300 litres of fuel, we could capture 150-200 kg of fishes within 2-3 days. And now, we spend over 3,000 litres of diesel for 15-20 days (or more) and still fail to capture the same quantity of fish." While Apparao laments about the unprofitability of the fish business, another fisherman named Dania and his team of seven reach the Vizag port. Each of the labourers on the boat said they secured an income of Rs. 5,000 and about 48 kg of fish — as a result of their 25 day-journey at sea.

Dania boasts that they have captured a lot of fishes from somewhere near Bangladesh. While this crew of seven, roams around the boat and observes their haul, another crew gets busy segregating the collection — into big commercial fishes (targeted fish catch), which will be auctioned, and the other small, juvenile, wild and waste fishes, which cannot be sold in the market. Anything that does not go for auction, is often termed as waste or bycatch.

"Waste fishes have been used in other industries like poultry or pig farming for a long time. However, it is only in recent years that these bycatches are extensively being routed to Fish Meal

and Fish Oil (FMFO),” says Natasha Hurley, Campaign Manager at Netherlands-based Changing Markets Foundation (CMF), a global campaigning organisation formed to accelerate and scale up solutions to sustainability challenges. As per a study in 2020, one third of the entire marine landings in India goes to the fish meal industry.

“The other two third goes to exports, domestic supplies and other industries like agriculture, fertiliser, poultry and other animal feeds,” informs Scholtens. “Fishers can no longer solely rely on their traditionally targeted seafood species that were destined for human consumption. To stay profitable, they cannot afford to discard the low value bycatch “trash fish” they traditionally did and need to land all they can.

This continues to drive overfishing in the region, beyond the collapse of their targeted stocks,” says Aaron Lobo, a marine conservation scientist based in Goa. Marine ecosystem, demand, and supply “The practice of catching small and juvenile fishes has picked up pace only in the last 10-15 years,” says Dr. K Sunil Mohamed, Retired Principal Scientist and Head of Division, Central Marine Fisheries Research Institute, a government agency under the Ministry of Agriculture and Farmers’ Welfare and Chair, Sustainable Seafood Network of India (SSNI).

The juvenile fishes are caught before they’ve had the chance to grow and reproduce; this leads to the depletion of fish stocks. The collapse of fish stocks is already visible among some of the pelagic fish species, like oil sardines. In 2012, oil sardines were at the peak of their exploitation. Dr. Mohamed says, “Sardines comprised 30% of all the catches all over India that year, with 0.8 million tonnes of sardines landed on Indian coasts.”

The decline became prominent in the following years, he adds. Sardines play a crucial role in the food security of locals in states such as Goa, Kerala and Karnataka. “The cheap source of essential fatty acids and protein suddenly became out of reach for the poor,” notes Mohamed. About 90% of fish that is used in FMFO could be used for human consumption. A recent report titled, “Fishing for Catastrophe,” by CMF found that significant quantities of fish that could be consumed directly by people are instead being diverted to fishmeal plants along the Mangalore–Karwar belt on the West Coast of India.

According to Mohamed, “The growth of shrimp farming has triggered a rise in reduction fisheries.” He is referring to the phenomena where fish of good human food value is reduced to meal for export-oriented aquaculture fishes for high economic worth. This has implications not just for humans, but for other marine species as well. FMFO used in aquafeed uses small plankton-eating fishes which are present in abundance (like sardines, anchovies, mackerel and herring) and crustaceans (mainly krill).

“These fishes are at the bottom of the food chain, and are a critical link in marine food webs,” says Dr. Mohamed. “Depletion of any fish sources may further lead to loss of other fish species including the endemic ones, and can disrupt the whole marine ecosystem,” adds Dr. Sandliyan. Yet, demand is set to outpace supply. Talking about the demand of fish feed in the aquaculture industry, Dr. BM Hasan, General Manager at Anmol Feeds Pvt Ltd, headquartered in Kolkata, says, “It’s about 1 million metric tons (MMT) per year.”

He adds, “The fish feed industry in the country is growing at a very fast pace with a growth rate of 10% every year.” For the production of export-oriented products like shrimp, we need more and more fish (or bycatch) for shrimp to feed on. Research based on data from local industries suggests that the feed conversion ratio (FCR) of whiteleg shrimp is 1.2-1.6 kg feed input per kg shrimp output.

Moreover, production of each kg of fishmeal requires 4-5 kg of waste/wild fishes. “Soya is an alternative to this protein source but it is considered a vegetarian protein. For carnivorous fishes and shrimp— fish meal or squid meal or polychaete worms meal is needed for better growth and survival,” says Hasan. Driven in large part by aquaculture, the total fish production in India has increased from 0.75 MMT in 1950-51 to 14.2 MMT in 2019-20.

During the financial year 2020-21, the fisheries sector witnessed challenges due to the pandemic, yet, India exported 11,49,510 MT of seafood worth US\$ 5.96 billion. Out of which, cultured shrimp continued to be the major exported item. Out of a total production of 8,43,361 tons of Shrimp (Tiger + Vannamei), India exported 5,52,019 tons (65%) of shrimps to countries like USA, China, South East Asia, Japan and Middle East.

The wheel that runs India’s exponential growth in aquaculture According to Scholtens, the growth in the prawn industry relies heavily on affordable feed, which requires cheap fishmeal and precarious labour. He warns, “As soon as fishing regulations are fully implemented, as soon as the fuel subsidies are removed, or the fishing labourers are paid a decent wage, the prawn industry might be in big trouble.” “Subsidies can lead to overfishing and over-exploitation of fishery resources.

For instance, subsidies for fuel (petrol and diesel), nets and other machinery allow fishers to increase the number of fishing trips they take, which ultimately leads to the depletion of fish biomass. If they pay the right [full] price for the fuel they might not go as frequently as they are going now,” says Sandilyan. Apparao and other fishermen in AP get a monthly fuel subsidy of Rs. 9 per litre with a ceiling upto 3000 litres. Mohamed explains, “The subsidies vary depending on the state and with a mix of support from center and the state.” States like Karnataka, Andhra Pradesh, Tamil Nadu, Maharashtra give subsidies on diesel fuel, whereas the Kerala government gives subsidies for kerosene. (Mohamed also observes that kerosene is a polluting fuel, however, it supports only small-scale farmers with comparatively smaller boats.).

“The fisheries subsidies that Indian fishers get are minuscule when we compare with the West,” says Mohamed. India subsidises around \$174 million for capacity enhancement, in the form of fuel, boats, nets etc. The top three countries are — China (fisheries subsidies worth \$ 5,886 million), EU (\$ 2,036 million) and the USA (\$ 1,136 million). Mohamed is optimistic about “new regulations coming up, especially in terms of net size, mesh sizes and minimum sizes of fishes,” that should all help reduce bycatch, but he also notes that India is a huge country, and the regulations are difficult to implement properly.

According to him, the government should focus more on welfare subsidies — for education, housing, health etc. Fishermen are one of the most economically vulnerable groups in the country. In 2018, the average monthly salary of fishermen was reported to be Rs. 4,387.78 (~

\$59). As Dania and his peers at the Visakhapatnam harbour shared, that figure has stayed nearly the same in 2021. The fish meal industry and the fisherfolk There are no particular laws to regulate the FMFO industry. There is hardly any discrimination among the type of fishes delivered to these industries — be it fishmeal, which produces feed for industries like poultry, pigs, fishes etc, or fish feed, produced only for fishes, or fish oil. While only 6% of feed is imported, India exports about 25% of fishmeal.

Until 2020, 45-60 fishmeal companies were operating in India, the majority of which were located in Karnataka. Since the 1970s, the exports and capacity of the fishmeal plants have increased by 100 times. According to the Government of India, since 2015, 199 fish feed mills have been established in the country, with Uttar Pradesh (55) topping the list, followed by Maharashtra (42) and Madhya Pradesh (24). India's fish feed or aquafeed market has been valued at US\$ 1.20 billion (2017).

Though Hasan, the manager at the aquafeed company, mentions that there will be further growth in the fish feed industry, he also agrees, "The FMFO industry was considered a solace for fishermen as it purchased the trash and non-edible fish that came in with the catch. It has been noticed tons of fish, including juvenile and edible ones are being processed by the industry, resulting in the collapse of fish stocks and marine ecology, imbalances in food security and severe environmental issues."

Apparao and other fishermen have similar feelings that their fishing methods are not very sustainable, but they have limited choice. He has a message for the government. He says, "They should make sure our businesses are not unprofitable. Support us with subsidies but limit the grantees. Limit the boats that go to the sea.

Put moratorium limits and support us so that we leave the ocean undisturbed and can fish sustainably when we go back." While Apparao puts his demand in a strong voice, other fishermen surround him and agree with nods and whispers and soon disperse around the harbour.

**India: Fisheries is India's sunrise sector. Want to start fish farming? Learn sitting at home**

<https://en.gaonconnection.com/fisheries-is-indias-sunrise-sector-want-to-start-fish-farming-learn-sitting-at-home/>

"India is one of the largest fish producing countries in the world and shares 7.58 per cent of the total global production. The importance of fisheries sector can be gauged from the fact that it contributes 1.24 per cent to India's Gross Value Added (GVA) and 7.28 per cent (2018-19) to the agricultural GVA. Known as the country's sunrise sector, fisheries has shown impressive growth with an average annual growth rate of 10.88 per cent during the last few years. Despite high production, fish consumption in the country remains low.

Average per capita fish consumption in India is 9 kilograms (kg) per annum against the global per capita fish consumption of 16 kg. The World Health Organization (WHO) recommends consuming 12 kg fish in a year. Fish is rich in protein and contains easily digestible high-quality proteins and healthy fats. It is also a unique source of essential nutrients, including iodine,

vitamin D, and calcium and long-chain omega-3 fatty acids. Keeping these things in mind, the Indian government is trying to promote the fisheries sector. Last year, the country produced 12 million metric tonnes (mmt) of fish, of which only 40 per cent came from the oceans and the rest was sourced from fish farming and inland water bodies.

### Freshwater aquaculture

Fish farming or aquaculture is a simple farming technique to grow the fish in confined conditions in a pond. For successful fish farming, good quality fish seed should be stocked in well-prepared ponds having five to six feet water. These fishes are to be then fed daily with pellet feed or oil cake-based mash feed and reared for about 8-10 months. After this, the fishes can be harvested. Average per capita fish consumption in India is 9 kilograms (kg) per annum, sold to the consumers with a decent profit margin.

The choice of the fish and the scale of operation depends on the market demand in the locality. Freshwater aquaculture in India has evolved from a state of homestead activity in few pockets of eastern Indian states during the 1950s to the present state of a vibrant enterprise that has spread all over the country. The total inland fish production had witnessed a phenomenal increase from the mere 0.75 mmt in 1950-51 to 10.4 mmt in 2019-20.

Indian major carps such as rohu, catla and mrigal and catfishes are the important fish species cultured in the country. States like Andhra Pradesh and West Bengal developed their expertise in aquaculture and these two states produce about 40 per cent of the total inland fish production and exports to different parts of the country. The future of Indian aquaculture development is expected to be in the northern and eastern states where the water is plenty and largely unutilised.

### Pradhan Mantri Matsya Sampada Yojana

To tap the immense potential for development of fisheries and for providing focused attention to the sector, the Government of India launched the Pradhan Mantri Matsya Sampada Yojana on September 2020. This scheme will ensure an estimated investment of Rs 20,050 crore up to the year 2025. This national programme aims to increase the fish production in the country to 22 mmt by 2024-25. It also proposes to double the export earnings from the present Rs 46,662 crore (2019-20) to about Rs 100,000 crore by 2024-25.

According to Bhubaneswar-based ICAR-Central Institute of Freshwater Aquaculture (ICAR-CIFA), at present the fisheries sector suffers from a post-harvest loss of about 20-25 per cent. The Pradhan Mantri Matsya Sampada Yojana aims to reduce it to less than 10 per cent. This institute is the premier research institute in India which undertakes research on basic, strategic and applied aspects of freshwater aquaculture.

It has five regional centres. Meanwhile, the mean productivity level of the existing aquaculture ponds in the country remains as low as three tonnes per hectare, which can be easily increased to five tonnes per hectare through adoption of scientific freshwater aquaculture practices, informs the Institute of Freshwater Aquaculture. The Pradhan Mantri Matsya Sampada Yojana is expected to generate 1.5 million additional employment opportunities in the country's fisheries

sector, while the fish consumption in the country is also increased to 12 kg per capita from the present 5 kg per capita.

### Overcoming COVID challenges and learning fish farming from home

Capacity building is very important for increasing the adoption of scientific technologies at field level and large number of fish farmers should be trained on specific technology modules on scientific aquaculture. But, there are several existing challenges. Many state governments do not have enough humanpower to provide technical advisory services to the farmers. The Krishi Vigyan Kendra network, which has the 700 plus centres across the country, has only about 120 fishery scientists working.

This results in a poor dissemination of technologies to the farmers from the research institutes. The COVID-19 pandemic has further worsened the situation as farmers could not attend the training classes in the research institutes and update their skills. To address this issue, ICAR-CIFA has developed an Android mobile app — Matsya Setu — to disseminate the aquaculture technologies to the farmers through online mode.

Like any other commercial online course apps, this virtual fish farming app has species-wise/subject-wise self-learning video modules, where renowned aquaculture experts explain the basic concepts and practical demonstrations on breeding, seed production and grow-out culture of commercially important fishes. At present, the lectures are in English and Hindi language. But, content in other regional languages is under preparation and will soon be uploaded on the app, informs ICAR-CIFA.

### DIY: Fish farming

The self-learning video modules on the Matsya Setu app are divided into small video chapters for the convenience of the learners. Some of the available courses on the app include Entrepreneurship Opportunities in Aquaculture, Aquaculture for Beginners, Carp Seed Rearing, Freshwater Prawn Farming, Magur Farming, Murrel Farming, Pabda farming, Freshwater Pearl Farming, Fish Health Management, etc.

To motivate the learners and provide a lively learning experience, quiz/test options are also provided for self-assessment. Upon successful completion of each course module on the Matsya Setu app, an e-certificate is auto-generated. Learners can also interact with subject experts. To solve any queries raised by the learner, there is an option to submit the questions in the video chapter itself. Appropriate, specific advisories by experts are sent to the app as push notifications.

The Matsya Setu app has been developed as a deliverable of an innovative project titled ‘Capacity Building of Knowledge Intermediaries and Primary Stakeholders through Virtual Learning Approach’ sanctioned to ICAR-CIFA in 2018. With the funding support obtained, a Digital Outreach Center has been established with studio facilities to record the lectures of the experts and post-production setup. During the COVID-19 pandemic period, with the help of the centre, the institute has conducted various virtual training programmes and reached out to more

than 10,000 farmers across the country.

### **India: Fisheries Policy: Will Fight Against Privatisation Tooth and Nail, Say Fisherfolk Groups**

<https://www.newsclick.in/Fisheries-Policy-Fight-Privatisation-Tooth-Nail-Fisherfolk-Groups>

"The Union Budget's proposals seek to push big time privatisation across sectors, from railways to the national ports. One sector, where privatisation is sure to impact livelihoods in a big way is fisheries and marine farming, wherein the Centre proposes to develop five major fishing harbours – Kochi, Chennai, Visakhapatnam, Paradip, and Petuaghat -- as hubs of economic activity. "We will also develop inland fishing harbours and fish-landing centres along the banks of rivers and waterways," Finance Minister Nirmala Sitharaman said in her Budget speech.

Inland fisheries include all rivers, canals, floodplain lakes, high altitude lakes, ponds, wetlands, tanks, reservoirs, brackish water, all saline and alkaline affected areas of the country. However, not only the Budget proposals but the draft Fisheries Policy 2021, for which the window of suggestions invited closes this week, have not gone down well with fisherfolk who fear that all resources of inland fisheries, like rivers, canals, or ponds, would eventually be leased out to private parties, hitting the livelihoods of lakhs of people dependent on the marine sector. Across India, fisheries associations have, therefore, been protesting the Budget proposals as well as the proposed reforms in the draft Fisheries Policy 2021.'

Fishermen's unions and associations have been highlighting that the Central government's proposed policy has looked at the industry only from a profit-making commercial point of view, aimed at generating corporate interest in the seas, pushing fisherfolk to the brink of poverty. They fear that the policy would pave the way for the collapse of traditional fishing methods and reduce state autonomy as well.

According to the notification, the government will take control of all resources of inland fisheries like rivers, canals, or ponds, which will be leased out to private parties. As a result, these common resources will no longer be will have limited rights and control over natural resources, pushing them further into doing migrant labour, say some experts. The draft policy aims to "enhance fishing" in all these areas, including high-altitude lakes in the north and north-eastern parts of India, and wetlands and reservoirs in protected areas.

The policy also proposed to reduce the jurisdiction of states to 12 nautical miles, beyond which control will lie with the Centre, said critics of the policy, hinting at yet another move toward centralisation of power. The proposed policy document states, "Government of India is responsible for the development, management and regulation of fisheries in the EEZ waters beyond 12 nautical miles and up to 200 nautical miles (370 km).

Therefore, it is imperative that the Center effectively manages and regulates this common property resource for its sustainable and responsible utilization in close collaboration with States." Critics hold that this will lead to diversion of power in the hands of the Centre, which will further enable activity in this region by private players as the draft policy states that, "states

will develop comprehensive leasing and licensing policy for all public water bodies with due priority to local fishing communities and their cooperatives, fisheries professionals /trained entrepreneurs while respective agencies may continue to retain trusteeship/custodial rights of these resources. Traditional and small-scale fishers will be restricted to these territorial waters, with new licencing laws and heavy capital limiting their reach.

Speaking with NewsClick, Olencio Simoes, of Goenchea Ramponkarancho Ekvott, a Goa-based traditional fishermen's association, said: "This is a betrayal of what has been asked of the government from the past 20 years and we shall fight it to the nail. Marine and inland fishing is being clubbed together, to show that there are no fishermen in the marine sector, the privatisation attempts are ignoring the traditional fishermen.

They are focusing on deep sea fishing, motherboard fishing, It looks like an attempt to displace this fishing community of India to promote mechanised fishing." The draft policy further combines all components of the Indian fisheries sector into a single document, which the government claims will lead to an environment for increasing sectoral investment, double exports, and incomes of fishermen.

However, Jackson Pollayil of Kerala Swathanthra Malsyathozhiali Federation, said: "If we go deep into the draft policy, we have objections. We are against promoting commercial ports. We are against corporate culture since it would affect traditional fishermen. Trawling ban is used to impose as per the monsoon timing. Now the government has decided to impose a trawling ban at the same time across the states.

This is unscientific. It affects traditional fishermen, it is about giving an upper hand to players, who do not understand our communities or our work." In recent years, fish production in India has had an average annual growth rate of 7%. The share of the fisheries sector was 1.03% of India's gross domestic product (GDP) in 2017-18, and the sector has been one of the major contributors of foreign exchange.

### **India: Fisheries sector provides nutrition and food security to a large population**

<http://www.fnbnews.com/Top-News/fisheries-sector-provides-nutrition-and-food-security-to-a-large-population-66013>

#### "Introduction

The fisheries sector has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap and nutritious food, at the same time it is an instrument of livelihood for a large section of economically backward population of the country. Fishery sector occupies an important place in the socio-economic development of the country. "Fisheries is a fast-growing sector in India, which provides nutrition and food security to a large population of the country besides providing income and employment to more than 28 million people.

Fisheries sector has been recognized as a 'Sunrise Sector' and has demonstrated an outstanding double-digit average annual growth of 10.87% since 2014-15. The sector has reached record fish production of 142 lakh tons in FY 2019-20 and has immense potential for growth. Moreover, it has been instrumental in sustaining the livelihoods of over 28 million people in India especially for marginalized and vulnerable communities and has contributed towards encourage socio-economic development. India is the second largest fish producing country in the world accounting for 7.56% of global production and contributing about 1.24% to the country's Gross Value Added (GVA) and over 7.28% to the agricultural GVA.

Fisheries and aquaculture continue to be an important source of food, nutrition, income and livelihood to millions of people. Export earnings from the Fisheries sector has been Rs.46,662.85 crores during 2019-20. The sector provides livelihood support to about 280 lakh people at the primary level and almost twice the number along the value chain and the annual average growth rate in the Fisheries sector has been 7% over the last few years.

Fish being an affordable and rich source of animal protein, is one of the healthiest options to mitigate hunger and nutrient deficiency. The sector has immense potential to double its exports, it is essential that sustained and focused attention is given to the fisheries sector through policy and financial support to accelerate its development in a sustainable, responsible, inclusive and equitable manner.

#### Schemes and Programs

a. Pradhan Mantri Matsya Sampada Yojana (PMMSY) The Cabinet on 20th May, 2020 approved the Pradhan Mantri Matsya Sampada Yojana (PMMSY) at a highest ever total investment of Rs. 20,050 crores comprising of (i) Central share of Rs. 9407 crores, (ii) State share of Rs 4880 crores and (iii) Beneficiaries contribution of Rs. 5763 crores for its implementation within a period of 5 years from FY 2020-21 to FY 2024-25 in all States/Union Territories. PMMSY was initially announced in the Union Budget for FY 2019-20 and subsequently announced as part of the COVID-19 Relief Package (AtmaNirbhar Bharat Package) of the Government of India. PMMSY was launched by the Hon'ble Prime Minister on 10th September 2020.

The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying issued the Administrative Approval and the Operational Guidelines of PMMSY to all the States/UTs on 12th June 2020 and 24th June 2020 respectively. During 2020-21, Proposals from Thirty four (34) States/UTs (except West Bengal, Chandigarh) and other organizations at a total cost of Rs. 2881.41 crore (Rs. 2746.86 crore under CSS + Rs. 134.56 crore under CS) involving central share of Rs. 1089.86 crore (Rs. 955.26 crore under CSS + Rs. 134.56 crore CS) have been approved and 1st installment of Central share of Rs. 585.68 Crores (Rs. 500.08 Crore under CSS + Rs. 85.60 Crore under CS) have been released.

The activity wise achievement made is as under: During 2021-22, As on date the Proposals from sixteen (16) States/UTs for developmental projects and 22 States/UTs under Livelihood and Nutritional Support during fishing ban/lean period component with a total project cost worth of Rs. 2600.54 crore involving central share of Rs. 845.31 crore have been approved and 1st installment of Central share of Rs. 405.92 Crores and Rs. 176.27 crore as a committed liability

were released to various States/ UTs. The activity wise Achievements under PMMSY during the year 2021-22 till date is as under; i. Inland Fisheries: 2983 hectares of pond area for inland aquaculture, 676 Biofloc units and 1178 Nos of Re-circulatory Aquaculture Systems (RAS), 10,490 Nos of cages and 126 hectares pens in reservoirs and other water-bodies; 110 Nos of fish/prawn hatcheries, 79 hectares of pond area for Inland Saline-alkaline culture were approved. ii. Marine Fisheries: 101 deep sea fishing vessel, 260 up gradation of existing fishing vessels, 1,353, Bio-toilets in mechanized fishing vessels; 890 nos of open sea cage for fish culture; 2 nos Small Marine finfish hatcheries, 642 hectares of pond area for brackishwater aquaculture and 3 nos of brackishwater hatcheries were approved.

iii. Fishermen Welfare: 974 Nos replacement boats and nets for fishermen; Livelihood and nutritional support for 6,58,462 fishers' families for conservation of fisheries resources during fishing ban/lean period and 19 nos Extension and support services (MatsyaSevaKendras). iv. Fisheries Infrastructure: 127 Nos. ice plant/cold storages, 117 Nos fish feed mill/plants; 4660 units of fish transportation facilities viz., refrigerated (67) and insulated trucks (373), auto rickshaws (783), motor cycles (1893) and bicycles with ice box (1304); 957 units of fish retail markets (81) and fish kiosks including ornamental kiosks (876) and 13 value added enterprise units have been sanctioned so far. v. Aquatic Health Management: 4 nos, Disease diagnostic centre and quality testing labs, 2 Mobile centres and testing labs and one Aquatic referral labs have been approved. vi. Ornamental Fisheries: 273 Nos of Ornamental fish rearing units and 37 Nos of Integrated Ornamental fish units (breeding and rearing) have been approved. vii. Seaweed Cultivation: 23,000 nos rafts and 41,000 nos monoline tubenet approved for seaweed cultivation.

viii. Development In North East Regions: Total Project cost of Rs. 122.50 crore were approved with a central share of Rs. 59.75 crore. There are 23 nos Hatcheries, 421.76 ha area for Integrated Fish Farming, 29 nos Re-circulatory Aquaculture System (RAS), 115 nos of Ornamental Fisheries units, 290 Nos of Biofloc units, 300 ha Construction of new ponds and 39 nos Feed mills were approved. ix. Other Important Activities: Sagar Mitras: 368 Nos and 19 units Matsya Seva Kendra. b. Implementation of FIDF: In order to address the infrastructure requirement for fisheries sector, the Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying during 2018-19 has created dedicated fund namely Fisheries and Aquaculture Infrastructure Development Fund (FIDF) with a total funds size of Rs 7522.48 crore.

FIDF provides concessional finance to the Eligible Entities (EEs), including State Governments/Union Territories and State entities for development of identified fisheries infrastructure facilities through Nodal Loaning Entities (NLEs) namely (i) National Bank for Agriculture and Rural Development (NABARD), (ii) National Cooperatives Development Corporation (NCDC) and (iii) All scheduled Banks. Under the FIDF, the Department of Fisheries provides interest subvention up to 3% per annum for providing the concessional finance by the NLEs at the interest rate not lower than 5% per annum. Loan lending period under FIDF is five years from 2018-19 to 2022-23 and maximum repayment period of 12 years inclusive of moratorium of 2 years on repayment of principal.

Under the FIDF, so far 156 nos proposals to the tune of Rs. 5954.96 crore have been received from various eligible Entities (EEs) including State Governments and Union Territories. These proposals have been received from a total of 20 States/UTs namely Andhra Pradesh, Tamil Nadu, Maharashtra, J&K, Telangana, Mizoram, West Bengal, Assam, Lakshadweep, Gujarat, Uttar Pradesh, Odisha and Haryana, Himachal Pradesh, Manipur, Andaman and Nicobar, Kerala, Tripura, Goa and Bihar. The Tripartite MoA is executed between the (i) concerned (loan availing) State Government, (ii) NABARD and (iii) Department of Fisheries (DoF), Ministry of Fisheries, Animal Husbandry and Dairying, GOI funding the State/UTs Projects under FIDF by NABARD. However, so far, only 8 States Governments namely Tamil Nadu, Gujarat, West Bengal, Andhra Pradesh, Karnataka, Kerala, Maharashtra, Haryana and Goa have signed the Tripartite Memorandum of Agreement (MoA) for availing the initial concessional finance.

The Central Approval and Monitoring Committee (CAMC) constituted under FIDF has approved projects to the tune of Rs. 3783.46 crore with Project cost restricted for interest subvention under FIDF for Rs. 2304.37 crores. c. Kisan Credit Card (KCC) The Hon'ble Finance Minister announced Rs.2 lakh crore concessional credit boost to Rs.2.5 crore farmers including fishers and fish farmers under Kisan Credit Card (KCC) Scheme as a part of Atmanirbhar Bharat Package. Thus, Department of Fisheries in collaboration with all the States/UTs took up a special drive several times to saturate the issuance of KCC to fishers and fish farmers.

Further, Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying, Shri Parshottam Rupala launched the Kisan Credit Card (KCC) campaign to cover fishers and fish farmers on 15th November, 2021. The said campaign will run from 15.11.2021 to 15.02.2022 and will seek to bring majority of fishers and fish farmers under coverage of institutional credit. Fishermen can be classified into two types, viz., Marine fishers and fish farmers (Aquaculturists), Aquaculture which required heavy capital investment was still nascent in the country and traditional marine fishers did not require too much capital as per their current practices.

Under this scheme and under PMMSY, DoF was working with State Governments and fishers/fish farmers to make them aware about the best practices and encouraging them to scale up their activities. This would help farmers enhance their income and also lead to higher credit offtake. As on date, a total of 6,08,820 of KCC applications received from fishers and fish farmers. Out of that, 70,818 KCCs have been issued and about 4,80,965 lakh applications are with the Banks at various stages for issuance of KCCs.

And sum of Rs. 1038.60 Crore has also been disbursed to various KCC card holder beneficiaries against the KCC issued. Budget Announcements: a) Announcement of Seaweed Park in Tamil Nadu The initiative intended under Budget announcement would link and promote Seaweed farming and the seaweed-based industries together to bring out full-fledged expansion of this sector.

Further, One Stop Park for entire seaweed value chain will link all the activities, farmers, processors, buyers, exporters, importers, retailers together for arriving at an optimum output and thereby maximizing value addition, minimizing wastage, increasing farmers income and creating employment opportunities and this Will be developed on a hub and spoke model for which Government would invest about Rs 100 crores for establishing the seaweed park.

The possible area of Collaboration is being identified by State Government of Tamil Nadu after the detailed deliberation and discussion with the stakeholders and Government of India, for further submitting the comprehensive model for the Multipurpose seaweed park at the earliest.

b) Announcement of Development of 5 Major Fishing harbours as hub of economic activities 5 major fishing harbours – Kochi, Chennai, Visakhapatnam, Paradip, and Petuaghat – will be developed as hubs of economic activity with world class infrastructure and amenities, Seamless and quality cold chain and Hygienic handling, reduce post-harvest losses for which around 600 crores would be spent.

In this regard, Preparation of DPRs and Impact Assessment Study wherever required will be completed by 30th Sept, 2021 followed by sanction of the Projects by 31st December, 2021. Other Key initiatives/ Highlights: i. Sri Pratap Chandra Sarangi, Hon'ble Minister of State for Fisheries, Animal Husbandry, laid the foundation stone of the project on promotion and scaling up of Open Sea Cage Culture at Balasore coast, Odisha on 10th January, 2021.

Chief Executive, NFDB and both the Joint Secretaries from the Department were present in the event. Subsequently, Hon'ble Minister of State for Fisheries, Animal Husbandry & Dairying, Shri Sarangi inaugurated a training-cum-awareness program on Fisheries and Aquaculture with special focus on PMMSY was organised jointly by Department of Fisheries, Govt of India, National Fisheries Development Board, Hyderabad and Department of Fisheries, Govt of Odisha on 11-01-2021 for the benefit of the fish farmers of Odisha state.

During the program all the 30 District Fisheries Officers of Govt. of Odisha along with 50 farmers each (1500 farmers), all the 07 Krishi Vigyan Kendra with 30 farmers each (210 farmers), 650 farmers enrolled under Aqua One Centres (Funded by NFDB), more than 1000 Shrimp farmers, Farmers and hatchery operators of Odisha, CIFA scientists and technical personnel etc. participated in the webinar. ii. Hon'ble Minister of Fisheries, Animal Husbandry & Dairying, Shri Giriraj Singh laid the foundation stone for establishment of Aquatic Animal Quarantine Unit (AAQU) and Disease Diagnostic Laboratory (DDL) at Padappai, Chennai on 21st January, 2021.

The aquatic quarantine facility would play a major role to safeguard of farming sector from the ingress of diseases and to minimize the risk associated with the introduction of live aquatic animals. Hon'ble Minister also attended various programmes organised by Coastal Aquaculture Authority(CAA), Central Institute of Brackishwater Aquaculture(CIBA), Central Marine Fisheries Research Institute (CMFRI), Central Salt & Marine Chemicals Research Institute (CSMCRI) and Tamil Nadu State Fisheries Department during his visit from 20th to 24th January, 2021. iii. Hon'ble then Minister of Fisheries, Animal Husbandry & Dairying, Shri Giriraj Singh visited Goa during 5th-7th February 2021 to discuss the development of fisheries sector with Government of Goa including development of fishing harbour/landing centre, seaweed cultivation, mariculture activities under PMMSY in the State of Goa.

Further, Hon'ble Minister also announced a series of interventions under PMMSY for taking up in Goa till 2024-25. During his visit, he has also visited various scientific Institutes such as National Institute of Oceanography (NIO), Fishery Survey of India, Goa Base, Goa University'

NCPOR and discussed strategies for making Goa as one of marine fisheries export hubs in the country. iv. The Hon'ble Minister of Fisheries, Animal Husbandry and Dairying launched "Matsya Setu" App on 6th July, 2021. Matsya Setu App has been developed with the funding support of National Fisheries Development Board (NFDB), Hyderabad. It is a self-learning App with species-wise/subject-wise online course modules explained by renowned aquaculture experts.

It would enable aqua farmers and entrepreneurs to learn the advancements in the aquaculture technologies and better farm management practices at their convenience. Upon successful completion of each course module, an e-certificate can be auto-generated. v. The Department of Fisheries and its subordinate organizations celebrated the National Fish Farmers Day on 10th July 2021. The day was also celebrated as NFDB Foundation Day. During the occasion, Hon'ble Union Minister for Fisheries, Animal Husbandry and Dairying has launched the social media/radio jingles and slogans for popularizing and promoting domestic fish consumption across the country as a health food

vi. On 15th July, 2021, Hon'ble Union Minister for Fisheries, Animal Husbandry and Dairying chaired a meeting with Hon'ble Members of Parliament of Lok Sabha from coastal areas to discuss the draft Indian Marine Fisheries Bill, 2021 as a part of fulfilling an assurance in Lok Sabha. Hon'ble Union Minister also had detailed consultations with Hon'ble Members of Parliament of Rajya Sabha from coastal states/UT and Hon'ble Members of Parliament of Lok Sabha from coastal areas on the revised draft of Indian Marine Fisheries Bill, 2021 from 26th - 28th July, 2021.

The suggestions made by Hon'ble MPs were incorporated in the draft Bill. Further, consultations on the draft Bill were also held with fishermen associations and marine fisheries experts and their views and suggestions were obtained. vii. National Fisheries Development Board, Hyderabad signed a Memorandum of Agreement (MoA) with M/s Oriental Insurance Company Ltd (OICL) on 14th July, 2021 for implementation of Group Accident Insurance Scheme (GAIS) under Pradhan Mantri Matsya Sampada Yojana. Besides, a tripartite Service Level Agreement (SLA) between NFDB, OICL and M/s Providence Insurance India Pvt. Ltd (Insurance Intermediary) was also signed on 14.07.2021 for smooth coordination and monitoring for implementation of Group Accident Insurance Scheme (GAIS).

viii. The Department organized a webinar on "Major Disease Problems in Freshwater Aquaculture and its Management" on 28th August, 2021 under my chairmanship as a part of Azadi ka Amrit Mohatsav. Officials of Department of Fisheries, GoI, States/UTs, faculty from State Agriculture and Fisheries Universities, entrepreneurs, aquaculture farmers, hatchery owners, representatives from aquaculture industry, etc. participated in the webinar. ICAR Central Institute of Freshwater Aquaculture made a presentation on major disease problems in freshwater aquaculture in India and their management.

ix. Shri Parshottam Rupala, Hon'ble Union Minister for Fisheries, Animal Husbandry & Dairying launched the River Ranching Programme in Ganga River at Brijghat, Garh Mukteshwar, Uttar Pradesh on 8.10.2021. Simultaneously the program was conducted in States of Uttarakhand, Odisha, Tripura and Chhattisgarh. A total of Rs.8.85 lakh fingerlings were

ranching on 8.10.2021 in three river systems namely Ganges, Brahmaputra and Mahanadi. During October, 2021, a total of 76.91 lakh fingerlings have been reared nationwide. This is expected to boost the fish population in these rivers. x. As part of Azadi Ka Amrit Mohatsav celebrations, the Department of Fisheries organized a webinar on ""Fish for Health and Fish for Wealth"" on 20th October, 2021 and it was well attended by participants comprising Officials from Department of Fisheries (GoI) and States/UTs, faculty from State Agriculture Universities, entrepreneurs, aquaculture farmers and fishers from across the country.

Dr. B.K. Das, Director, Central Inland Fisheries Research Institute (CIFRI), Barrackpore, West Bengal made a detailed presentation on Fish Health, emerging fish and shellfish disease in India, and its prevention and mitigation. xi. Dr. L. Murugan, Hon'ble Minister of State for Fisheries, Animal Husbandry & Dairying and Information & Broadcasting visited Lakshadweep during 30th October to 1st November, 2021 and inaugurated stocking of fishes in Marine Sea cage Farm at Agatti island, developed jointly with CMFRI, Department of Fisheries Lakshadweep, Department of Fisheries, GoI and NFDB by stocking of seeds of high value Pompano fish. He also launched, All-weather seaweed seed reserve cages at Kavaratti island.

This technology provides an opportunity for seaweed farming in deeper areas of lagoons and this technology is expected to create new employment opportunities for women in fisheries sector. xii. Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying, Shri Parshottam Rupala and Minister of State for Fisheries, Animal Husbandry and Dairying Dr. L. Murugan, jointly unveiled the Inaugural Plaque of Laxmanrao Inamdar National Academy for Co-operatives Research and Development, National Co-operative Development Corporation (LINAC-NCDC) a Fisheries Business Incubator Centre at Gurugram under PMMSY scheme on 16th November, 2021.

LINAC-NCDC Fisheries Business Incubator shall motivate young entrepreneurs to join the sector, leading to employment generation and boost Start-ups activities that will lead to further growth and development of the fisheries sector in India. xiii. Celebration of World Fisheries Day-2021: The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying has celebrated the 'World Fisheries Day' 2021 at Rail Auditorium, Bhubaneswar Odisha on 21st November, 2021. Hon'ble Union Minister for Fisheries, Animal Husbandry and Dairying, Shri Parshottam Rupala, Minister of State for Fisheries, Animal Husbandry and Dairying Dr. L. Murugan has graced the occasion.

Various State Fisheries Departmental Officers, fish farmers, fishermen, fish farmers, entrepreneurs, stakeholders, professionals, officials and scientists from across the nation has participated in the event. During the event, the awards were given to the best performing States for 2020-21 in the category of Inland, Marine, Hilly and North-eastern region, best district for Inland, Marine, Hilly and North-Eastern Region, Best Quasi Government Organization/ Federation/ Corporation/ Board in Inland, Marine, Hilly and North-Eastern (NE) Region. Besides, this awards were also presented under Best Fish Farmer (Inland, Marine and Hilly and NE Region), best Hatchery (fish, shrimp and trout hatchery), best Fisheries Enterprises, best Fisheries Co-operative Societies/Farmer Producer Organisations (FPOs)/Self Help Groups (SHGs), best Individual Entrepreneurs, best Innovation idea/Technology Infusion. Hon'ble Union Ministers also released the various publications of booklets, posters, Radio Jingles during

the event.

### **India: Fisheries sector records 10.87% growth**

<https://odishatv.in/news/national/india-s-fisheries-sector-records-10-87-growth-167331>

"The country's fisheries sector, which has seen double-digit average annual growth of 10.87 per cent since 2014-15, has recorded fish production of 142 lakh tons in FY 2019-20, which has become a new record, an official said. This record has given a strong signal that the sector has immense potential for growth, the official said. "

"Moreover, it has been instrumental in sustaining the livelihoods of over 28 million people in India especially for marginalised and vulnerable communities and has contributed towards encourage socio-economic development," the official added.

India is the second-largest fish producing country in the world accounting for 7.56 per cent of global production and contributing about 1.24 per cent to the country's Gross Value Added (GVA) and over 7.28 per cent to the agricultural GVA.

Fisheries and aquaculture continue to be an important source of food, nutrition, income, and livelihood for millions of people. Export earnings from the fisheries sector has been Rs 46,662.85 crore during 2019-20 with the sector providing livelihood support to about 280 lakh people at the primary level and almost twice the number along the value chain.

### **India: Fisheries subsidies: Hectic parleys likely at WTO meet to conclude the pact**

<https://www.thehindubusinessline.com/economy/hectic-parleys-to-begin-from-sep-1-in-wto-to-conclude-negotiations-on-fisheries-subsidies-pact/article36041676.ece>

"Hectic parleys will begin from September 1 among members of the World Trade Organization (WTO) in Geneva to iron out differences on a proposed agreement on fisheries subsidies, an official said. The aim is to conclude the negotiations soon so that the member countries can finalise the text on the pact before the 12th ministerial conference, to be held in Geneva from November 30, the official added. The talks would happen in two stages — from September 1 to September 12 and then from September 13 to October 8.

During the first stage, Ambassador Santiago Wills, Chair of the Negotiating Group on Rules, will hold consultations in various formats. Under this, member countries can meet the chair or hold discussions among themselves on key issues. From September 13 to October 8, intensive text-based negotiations would happen on substantive issues on which there are divergent views of the member nations.

The main aim of the second stage is to minimise differences and improve the negotiating text by making it more convergent. "The objective is to finalise a fully-agreed clean text, ahead of 12th ministerial conference," the official said. The agreement is aimed at disciplining subsidies with the overall objective to have sustainable fishing, eliminate IUU (illegal, unreported and

unregulated) fishing subsidies and prohibit subsidies contributing to overcapacity and overfishing.

Earlier meeting At the WTO's ministerial meeting on fisheries subsidies on July 15, Commerce and Industry Minister Piyush Goyal had stated that member countries still need to cover significant ground to make the negotiations text for the agreement balanced to meet the concerns of developing and Least Developed Countries (LDCs). India has time and again emphasised that it is keen to finalise an agreement on fisheries subsidies in the WTO as irrational benefits and overfishing by many countries are hurting domestic fishermen and their livelihood.

Goyal had pointed out that it is essential that big subsidy providers take greater responsibility to reduce their subsidies and fishing capacities, in accordance with the principles of 'polluter pays' and 'common but differentiated responsibilities'. According to him, the proposed agreement has to provide for current and future needs as the per capita fisheries subsidy given by most developing countries is minuscule compared to advanced fishing nations.

While developed nations are pushing for prohibitions on subsidies, India wants an equitable and balanced outcome as the country provides support to its small and marginal fishermen who depend on the sector for sustenance. Unlike rich nations which provide billions of dollars of subsidies to their fishermen, India's subsidy amounts to only about Rs.770 crore. The government provides subsidies on items like fuel and boats.

The 12th Ministerial Conference will take place from November 30 to December 3, 2021, in Geneva, Switzerland. The sector provides livelihood to about 16 million Indian fishermen and fish farmers at the primary level and about twice the number along the value chain. WTO negotiations on fisheries subsidies were launched in 2001 at Doha, with a mandate to clarify and improve existing WTO disciplines on fisheries subsidies.

### **India: Fisheries' body develops nano solutions to prevent biofouling in aquaculture nets**

<https://www.thehindubusinessline.com/economy/agri-business/fisheries-body-develops-nano-solutions-to-prevent-biofouling-in-aquaculture-nets/article34246740.ece>

"The Indian Council of Agricultural Research's arm Central Institute of Fisheries Technology (CIFT) has developed nanotechnology solutions to prevent the growth of unwanted organisms, also known as biofouling, in the polyethylene nets that are used for aquaculture in the seas. Biofouling, a recurring problem, is affecting the aquaculture sector significantly impacting fish production from aquaculture cages, leaving the sector concerned.

#### **Adverse effects**

Biofouling causes clogging of meshes and reduces the water circulation in cage nets, thus minimising the size of mesh opening. It leads to the blockage of food waste and anoxic conditions inside the cages, thereby reducing the survival rate and the health of fishes. It is also pointed out that biofouling of aquaculture nets also cause severe maintenance and operational problems and its management needs about 25 per cent of the total production cost, he said.

## Nano coating

CIFT's technology uses polyaniline and nano copper oxide. Aquaculture cages are fabricated primarily with high-density polyethylene (PE) webbings whose surface is to be coated with polyaniline and nano copper oxide and exposed in the open sea and estuarine environment. P Muhammed Ashraf, Principal Scientist at CIFT, said field exposure studies were conducted at Vishakapatnam (open sea) for six months by exposing two treated webbings. The results showed a significant biofouling resistance.

The study concluded that the nano copper oxide present in the matrix acted as a point source above the electron clouds of polyaniline, preventing initialisation of biofilm. The results highlighted the potential application of polyaniline to modify the non-polar surface of polyethylene to load active biocides to prevent fouling in cage aquaculture. From the field exposure studies, the results revealed a great potential for polyaniline with nano copper oxide against biofouling in aquaculture cage nets.

This technology has to be promoted further for commercialisation, he added. CN Ravishankar, Director, CIFT, said that India's fish demand would have risen to 18 million tonnes by 2030 and it requires an additional seven million tonnes in a decade. With the capture sector plateauing, most of this demand should be met by aquaculture, especially mariculture, which is expected to make a significant contribution in the fish supply in the country.

Fouling control is one area where there are not many easy-to-use technologies. This CIFT technology would greatly minimize fouling, which will have a cascading impact on the profitability of mariculture operations, he said.

### **India: Fishermen & farmers can avail loans upto Rs.3 lakhs to meet their working capital needs!**

<https://krishijagran.com/agriculture-world/kcc-fishermen-farmers-can-avail-loans-upto-rs-3-lakhs-to-meet-their-working-capital-needs/>

"According to the government, the Kisan Credit Card (KCC) program in the fisheries sector will assist fishermen and farmers in meeting their working capital needs. According to a government release, the Department of Fisheries, which is part of the Ministry of Fisheries, Animal Husbandry, and Dairy, hosted a webinar on the statewide promotion for the Kisan Credit Card (KCC) in the fisheries industry.

### Background & diversification of fisheries sector

More than 400 people attended the program, which was presided over by Secretary of the Department of Fisheries (DoF) Jatindra Nath Swain. He emphasized the history and diversity of the fishing sector in his inaugural address. He explained that the KCC facility in the fisheries industry is an attempt to assist fishermen and farmers with their working capital requirements. Its goal is to offer all farmers adequate and timely financial support.

## Encourage & expand aquaculture and fisheries in India

Swain asked state officers to monitor whether qualified fishermen and farmers are receiving full benefits from the KCC program on a regular basis. Also, if there are a bottleneck, contact the relevant banks to have it removed and the KCC approved as quickly as possible. He stated that the campaign will run from November 15, 2021, to February 15, 2022. The department is working to encourage and expand aquaculture and fisheries in India, both inland and marine, according to Sagar Mehra, Joint Secretary (Inland Fisheries).

As per the statement, the development of the KCC facility is intended to improve the quality of life for fishermen & Farmers. An open debate hosted by Sagar Mehra with fishermen, farmers, state fisheries departments; banks, cooperative societies, entrepreneurs, students, and scientists followed the presentation. The participants raised issues such as financial support for KCC, nodal arrangement for KCC, an online portal for KCC process, maximum interest on KCC related to fisheries, and other similar issues.

All their queries were answered & clarified on the spot. Benefits of KCC for fishermen & livestock farmers: 1. Under the scheme, instructions have been given to issue the KCC with a loan limit of up to Rs 1.60 lakh without any guarantor. 2. Those desirous of availing KCC with a loan limit above this upto Rs 3 lakhs will have to provide guarantors who have had undisputed KCC transactions in the past and also have a financial standing.

## **India: Fishermen want permits for bottom trawlers to enter Sri Lanka waters**

<https://www.newsfirst.lk/2021/04/15/indian-fishermen-want-permits-for-bottom-trawlers-to-enter-sl-waters/>

"Sri Lanka's Fisheries Minister Douglas Devananda in March 2021 proposed to offer permits for Indian fishermen to enter into Sri Lankan water for fishing. However, Tamil Nadu fishermen have now called for permits to be issued not only for small boats but for massive fishing trawlers as well. Tamil Nadu fisheries union chief N. J. Bose told reporters that both Indian and Sri Lankan fishermen have been fishing in both sides of the sea for centuries and it should continue without an issue.

"If permits are to be purchased, these permits should be made available for fishing trawlers as well," he said. On Tuesday (13), News 1st exposed how Indian fishing vessels illegally enter Sri Lankan waters not far from the Island of Delft, under the cover of darkness to pillage our marine resources. The Indian fishing vessels were using a fishing method banned in Sri Lanka, which is called Bottom Trawling.

Bottom trawling is an industrial fishing method where a large net with heavy weights is dragged across the seafloor, scooping up everything in its path, from the targeted fish to incidentally caught, centuries-old corals.

These nets are dragged by two large trawlers, equipped with powerful engines, larger than any fishing vessel used in Sri Lanka. Tamil National Alliance MP Selvam Adaikkalanathan speaking to News 1st the main reason for Indian fishermen to enter into Sri Lankan waters is that marine life in Indian waters is depleting rapidly. “News 1st spent 11 to 12 hours at sea to record evidence for Indians illegally fishing in Sri Lankan waters. We only spoke on Indian encroachment, however now there is evidence to prove it,” he said.

“Indian invasions are increasing by the day,” said Former Janatha Vimukthi Peramuna MP Ramalingam Chandrasekaran adding the politicians in Tamil Nadu only speak of the rights of Tamils in Sri Lanka when an election is taking place. He alleged Indian fishermen are pillaging Sri Lankan waters on the direct instructions of Indian politicians and officials. Ramalingam Chandrasekaran slammed the Indian side for their two-faced policies.

### **India: Fishers need better insurance schemes that also cover losses due to climate change**

<https://scroll.in/article/1007910/indias-fishers-need-better-insurance-schemes-that-also-cover-losses-due-to-climate-change>

"Rufino Possa, 52, a fisher from Uttan, a coastal village in north Mumbai, returned home on October 2, after 12 days at sea, four days more than he planned. The rough seas churned up by Cyclone Gulab towards the end of September meant that he could not find any catch. “Each trip costs us more than Rs 1 lakh, we cannot afford to come back without any catch,” he said. Possa, like others of the fishing community, is still to recover from the losses caused by the pandemic. But their problem is further aggravated by the frequent and intense cyclones and torrential rains that have been battering India’s coastline over the last few years.

When Possa and his 12-member crew now launch their boats, they are not sure they will return home safely. A few days ago, one of his friends lost a member of his crew at sea. The body was later found floating at a harbour in Palghar district, around 80 km north of Uttan. “I have been in the fishing business for the last 30 years but have never faced so much loss and damage at sea as I have in the last few years,” said Possa.

Unexpected summer rains this year also damaged Rs 2-lakh worth of fish he had put out to dry. Leo Colaco runs a fishing co-operative society in Uttan, the Uttan Machimar Vikas Society Limited. Its 115 members now frequently seek help with insurance claims, loans and subsidies, he said. “The fishing business has become even more precarious after these frequent weather events like cyclones and heavy rains,” said Colaco.

India’s 8,000-km coastline is a source of livelihood for almost 2.8 crore workers in the fishing sector, including those vendors, boat owners and operators, ‘ice breakers’ who ensure that the catch is kept iced, drivers and owners of vehicles used to transport the catch and so on. Among them, close to 67% live below the poverty line, according to the 2016 National Marine Fisheries Census conducted by the government-run Central Marine Fisheries Research Institute.

Unusual extreme weather events are being witnessed along India’s coast. For example, in May, a severe cyclonic storm Tauktae landed on India’s west coast though cyclonic storms are rarely

formed in the Arabian Sea and this can be traced to the warming of oceans, we reported in May. Coastal climate disasters can impact the livelihood of fishers in multiple ways – they not only cause death and injuries at sea but also loss of or damage to expensive fishing gear, large-scale decline in the haul, and damage to assets such as aquaculture farms, marine cages used in aquaculture, storage infrastructure and so on.

These losses are not covered under conventional insurance schemes. Currently, fishers have access to insurance against accidents, death and certain other kinds of losses. The Centre offers group accident insurance that provides coverage against accident or death at sea to entire fishing crews. Insurance is also available for total destruction or loss of fishing vessels from public insurance companies such as the New India Assurance Company Limited, Oriental Insurance Company Limited and United India Insurance Company Limited.

Some private insurers also compensate for loss of fishing gear at an extra premium. “There is an increasing loss of workdays, loss and damage of vessels, property and mortality on account of adverse climatic conditions,” said Adithya Pillai of Dakshin Foundation, a Bengaluru-based research organisation working on marine conservation and environmental sustainability. “This is not matched by the current levels of risk-coverage provided under these schemes.”

#### Need for measures

The agriculture ministry did introduce a weather-based index insurance scheme in 2003 but only to benefit farmers. In 2016, the Pradhan Mantri Fasal Bima Yojana or the PM’s crop insurance scheme began to cover crop losses caused by adverse weather, replacing the weather index insurance. However, there is no equivalent scheme for the fisheries sector. What can be done to help livelihoods impacted by disasters precipitated by climate change?

In a February 2021 report, the Food and Agriculture Organization of the United Nations asked national governments to come up with social security measures to help fishers recover from the Covid-19 pandemic and the exacerbated climatic events. “Income-support programmes and better social support systems help absorb systemic shocks like natural disasters, or Covid, that increase overall vulnerability and negative coping strategies,” said Pillai of Dakshin Foundation. “Insurance schemes need to be suited to the level of occupational risks, uncertainties and ability of fishers to provide collateral and pay premiums.”

Several western countries have designed a weather index insurance to cover climate risks such as excess rainfall or droughts that impact specific populations. In 2007, 23 countries in Central America and the Caribbean formed a Caribbean Catastrophe Risk Insurance Facility, a multi-country insurance instrument to cover the financial impact of natural hazards like tropical cyclones, earthquakes and excess rainfall.

The instrument also has a specific fisheries policy, the Caribbean Ocean and Aquaculture Sustainability Facility that insures fishing vessels, fishing equipment and fishing infrastructure against extreme weather events. Climate risk insurance is being promoted by organisations to support vulnerable communities and compensate them for unavoidable risks such as extreme weather events.

## Partial protection

Apart from one-time compensations provided under disaster relief funds, which we detail later, fishers also have access to accident insurance schemes provided by the Centre and state governments such as the Group Accident Insurance Scheme for Fishermen under the Pradhan Mantri Suraksha Bima Yojana. In 2020, the central government came up with another insurance scheme under the Pradhan Mantri Matsya Sampada Yojana that gives greater coverage between Rs 25,000 and Rs 5 lakh for accidental injuries or deaths of fishers.

However, such state and central schemes do not cover loss and damage caused by extreme weather events, said Shinoj P, a senior scientist at Central Marine Fisheries Research Institute. And, apart from accident risks, other big risks in the sector such as loss and damage to fishing vessels, gear and assets of fishers are only partially covered by private entities, he said. As we said earlier, India's coastline has been hit by successive disasters in recent years. In 2020, four cyclones hit different coastal parts of India: Amphan hit the east in May, Nisarga landed in Maharashtra in June, Nivar swept coastal south-east in November and Burevi impacted Tamil Nadu and Kerala in early December.

The frequency of cyclones in all oceans surrounding India has increased: both 2018 and 2019 recorded seven cyclones, higher than the annual long-period average (1961-2017) of 4.5, we reported in December 2020. Lynel Mallekar, 40, a fisher from Uttan, has had to deal with the impact of several such weather events. He had bought a new boat in 2019 but it has already undergone six or seven major repairs costing a total of Rs 4 lakh.

The boat itself cost him Rs 20 lakh. Though the vessel is insured, Mallekar could not recover the cost of repairs. "Vessel insurances in India cover only total loss, which means that only if your boat disappears can you claim Rs 1 lakh-2 lakh for a Rs 10 lakh-50 lakh loss," said Colaco, head of the fisher collective in Uttan, who has appointed an insurance clerk for the cooperative.

## Delayed payment

Apart from vessel insurance offered by public insurance companies, accident/death insurance schemes for fishers are largely covered under state and central insurance programmes. The Centre's Group Accidental Insurance Scheme for Active Fishermen covers life/disability risks of a fishing crew. Under this, the insured can seek Rs 2 lakh in case of permanent disability/accidental death and Rs 1 lakh in case of partial disability. Investigations into incidents to claim insurance are also time-consuming, said Colaco.

"Fishers rarely have time to pursue them," he said. Royden Dhokalkar, who lost his crew member in an accident at sea in January 2020, was sanctioned his claim of Rs 1 lakh a year and a half later, in June 2021. Local co-operative societies, like those run by Leo Colaco, have been instrumental in pushing for insurance claims. But the loss of life and damage to vessels is not the only risk fishers have to bear, said Narendra Patil, president of the National Fishworkers Forum, a union of small and traditional fishworkers.

“Equipment like large hooks, lines, traps and fishing nets are expensive and every fisher invests around Rs 1 lakh in a trip,” he said. “When storms hit or there is no catch, they return home with no income in hand and there is no support available for that.”

### Disaster relief

The Arabian Sea, as we said, no longer enjoys a relatively stable climate due to global warming. The three cyclones to impact it in 2020-'21 – Amphan, Yaas and Taukate – damaged over 14,000 boats and 78,000 fishing nets, as per the Inter-Ministerial Central Teams constituted by the government. “But such damage is rarely accounted for in insurance claims,” said activist Patil. Disaster relief programmes do offer financial assistance to those whose livelihoods have been hit but these are not in the nature of insurance.

“There are one-time compensation schemes specific to disaster management and mitigation, like relief and rehabilitation of coastal communities affected by floods and cyclones but there aren't insurance schemes that talk explicitly about climate risk and resilience in the fisheries sector,” said Pillai of Dakshin Foundation. “Additionally there are some private schemes that help cover damage to fishing vessels and gears, but these insurance schemes still have low levels of coverage.”

In Andhra Pradesh, each of the 1,09,231 registered fishers in the state benefited from a financial assistance of Rs 10,000. In April 2020, Andhra Pradesh also announced a one-time payment of Rs 2,000 benefitting 6,000 migrant fish workers working in Gujarat. That same month, in Tamil Nadu, a one-time financial aid of Rs 1,000 was given to 4,85,000 fishers and fish vendors who were members of the State Fishermen Welfare Board. In June and July 2020, the Kerala government distributed a one-time Covid relief payment of Rs 2,000 to every fisher.

Every worker in allied fields was paid Rs 1,000. One-time payments cannot sustain the community for long, said activist Patil. The National Fishworkers Forum had asked the central government to announce a monthly package that includes Rs 50,000 per month for boat owners, Rs 15,000 per month for the crew and Rs 10,000 per month for those involved in selling fish. It has also sought interest-free loans of up to Rs 5 lakh from national banks ahead of the new fishing season.

We sought comments from the Department of Fisheries under the Ministry of Fisheries, Animal Husbandry and Dairying on October 5 on why no climate risk insurance is being provided to fishers. We will update the article when we receive a response.

### Sustainable fishing

MA Sekar, who belongs to the fishing community of Tamil Nadu, and worked in the supply chain at the Marine Products Export Development Authority under the Ministry of Commerce and Industry, has been charting the changes in the sector. “Lately, European countries who import fish have been pressuring India for sustainable fishing,” he said. “So, schemes like Pradhan Mantri Matsya Sampada Yojana are introduced to push sustainable fishing.

But how can you promote sustainable fishing, without addressing the livelihood, labour conditions and labour rights of the fishing community?” “Unlike farmers who are supported through minimum support price, in the fisheries sector, the fishworkers are vulnerable to the [market] forces [and the influence] of corporates and middlemen,” he said.

In September 2020, the central Ministry of Fisheries, Animal Husbandry and Dairying came up with a group accident insurance under the Pradhan Mantri Matsya Sampada Yojana, a Rs 20,050-crore scheme including accident insurance for fishers. But fisher welfare is allotted only 8% of the funds compared to what aquaculture and related infrastructure get.

By September, only 1,585,149 fishers from seven states – Telangana, Odisha, Tripura, Himachal Pradesh, Punjab, Rajasthan and Sikkim – have been covered under the scheme with their state government paying their share of premiums. But large fish producing states like Andhra Pradesh, West Bengal, Gujarat, Maharashtra, Kerala have not yet paid their share of premiums, leaving the scheme in limbo.

“States like Maharashtra have not allotted adequate budget to the fisheries sector to be able to pay their due share of premiums,” said Colaco of the Uttan fishers collective. We contacted the regional director of Maharashtra State Fisheries Department for a response to Colaco’s statement. “The earlier group accident insurance scheme has been active in the state,” said Devare, regional director of Maharashtra state fisheries department. “The premium is divided equally between the Centre, state and beneficiary, but the benefits could not be given to the beneficiaries because they did not apply for the scheme.”

### Burdened by debt

Fisher Vijay Burkhav bought a new boat in 2020 for Rs 50 lakh. “The new boat is made of fiberglass, unlike the earlier one, which was made of teak wood and used to get damaged in high currents,” he said. But banks would not give him a loan to buy the vessel because he could not show a stable income. Burkhav ended up taking a loan from a private money lender which he says will take him at least 10 years to repay.

Fisherfolk normally take loans of up to Rs 1 lakh- Rs 2 lakh for purchases and repairs on the basis of their earnings from the previous fishing season, but with earnings dipping due to unpredictable weather changes, they cannot plan ahead for their businesses, said Colaco. To respond to the economic consequences of the pandemic, a number of states set up compensation measures for workers in the fishing sector.

Civil society organisations had protested after the Pradhan Mantri Kisan Samman Nidhi relief programme under the Union Ministry of Agriculture and Farmers Welfare initially excluded fishers. The fisher community has been dependent on informal players in the credit market – auctioneer-middlemen, third-party “shareholders” (those who invest in the fishing business on an informal basis) and private money lenders, according to a 2019 study by Central Marine Fisheries Research Institute.

These informal contracts end up becoming debt traps, the study said. “Fishers are resource-poor, they cannot afford premiums. How will they pay off huge loans?” said Shinoj of Central Marine Fisheries Research Institute.

Need for innovations

“The compensation given under disaster management rules is very nominal. For loss of Rs 5 lakh or Rs 10 lakh, the compensation is a meagre Rs 15,000-Rs 20,000,” said Kiran Koli, secretary of the Maharashtra Machhimar Kruti Samiti, a fisher’s collective based in the Konkan region of Maharashtra. Existing insurance schemes are not innovative enough to deal with the climate crisis, said Shinoj of Central Marine Fisheries Research Institute.

Activist Koli said he met Maharashtra’s industry minister Subash Desai and the relief and rehabilitation minister Vijay Wadettiwar on the need to insure fishers under innovative schemes such as the crop insurance scheme that covers loss and damage arising out of unforeseen circumstances. “They agreed but there is no action yet,” he said.

In the aftermath of the 2004 tsunami in Chennai, Bajaj Allianz General Insurance with the assistance of CARE India, a not-for-profit organisation working on health, education and women empowerment, developed Disaster Risk Insurance Product for Coastal Communities, an insurance scheme for damaged assets such as fishing gear, safety nets, partial damage to boats and so on.

Many fishers availed of these schemes, said Shinoj of Central Marine Fisheries Research Institute. “But in 2008, after cyclone Nisha, there was huge damage and the company had to pay all indemnities and suffered a financial loss as a result. The scheme is nonfunctional at present.”

The government had in 2020 introduced a draft National Fisheries Policy that provided insurance cover for fishing assets such as gear and craft. The intention was to “help the fishers in offsetting the losses in times of natural calamities and other acts beyond their control”, and comments were invited from stakeholders. But the policy has neither been finalised, or has an update been issued yet.

**India: Fishing in territorial waters: India against time limit on subsidy**

<https://www.thehindubusinessline.com/economy/india-against-time-limit-on-subsidy/article34744913.ece>

"India is against the proposed time limit on the subsidy ban exemption for low income fishers operating in territorial waters suggested in the draft text circulated by the chair of the negotiations committee on rules (fisheries subsidies) at the WTO. “India argued that the subsidy ban was primarily to check IUU (illegal, unreported, unregulated) fishing.

Since poor fishers in territorial waters (within 12 nautical miles of the shore) do not have a significant contribution to IUU fishing, the exemption should not be time-bound,” a Geneva-based trade official told BusinessLine. WTO members have intensified efforts to narrow

differences on how to curb harmful fisheries subsidies with the aim to sign an agreement at the Twelfth WTO Ministerial Conference (MC12) in Geneva this year beginning November 30.

#### 'Eliminating subsidies'

Based on the mandate from MC11 and UN Sustainable Development goals, negotiators in the WTO were given the task of securing an agreement on disciplines to eliminate subsidies for IUU fishing and to prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing, with special and differential treatment for developing and least developed countries integral to the negotiations.

Fisheries subsidies to be eliminated include many given by India such as subsidies to cover costs of fuel, modern fishing gear and fishing nets. India also has some welfare schemes which include providing monetary support to fishers during the monsoon season, when there is a ban on fishing, for multiple purposes.

“It is imperative that such subsidies for Indian fishers should continue as they are the very minimum that are needed to ensure that they are able to sustain their livelihood. If they are withdrawn, many fishers will be reduced to a state of poverty,” another official said.

The chair of the negotiating group on rules (fisheries subsidies) floated the first draft text last month where he proposed that low income, resource-poor or those engaged in livelihood fishing only from developing countries will be exempted from a ban on subsidy, but only for a limited period, which he suggested could be two years.

“India and a number of other developing nations supporting artisanal fishers, at the on-going series of meetings on fisheries subsidies, have said that a time limit should be done away with as livelihoods would need to be protected for a long time to come,” the Geneva-based official said.

#### 'Aquaculture producer'

Since India is the second largest aquaculture producer in the world and accounts for more than 6 per cent of global fish production, some members believe that exemptions offered to it should be lower than those given to countries with lower fishing.

But India's argument is that a cut in subsidies should be based on the “polluter pays” principle which basically means that those who have provided the highest subsidies leading to overfishing and over capacity, like several developed countries, should take on the highest cuts.

According to the latest data from the UN Food and Agriculture Organization, an estimated 34 per cent of global stocks are overfished compared with 10 per cent in 1974, meaning they are being exploited at a pace where the fish population cannot replenish itself. Declining fish stocks threaten to worsen poverty and endanger coastal communities that rely on fishing. Roughly 39 million people depend on capture fisheries for their livelihood.

#### **India: Fishworkers oppose passing of IMF Bill**

<https://www.heraldgoa.in/Goa/Fishworkers-oppose-passing-of-IMF-Bill/178044>

"The National Fishworkers' Forum (NFF) delegation consisting of Chairperson Narendra Paitil, General Secretary Olencio Simoes, Veljibhai Masani and Anil Vargise met the new Central Minister of Fisheries Parshottom Rupala at New Delhi to discuss serious flaws in the manner the Department of Fisheries, Delhi had drafted The Indian Marine Fisheries (IMF) Bill 2021.

In a press statement Simoes said that the Department of Fisheries, Delhi drafted IMF Bill without even considering the suggestions and objections of the concerned stakeholders or MPs in all coastal States of India. "The bill was eventually considered and passed during ongoing 17th Lok Sabha monsoon session, which has led to fear and anxiety among the fishing community in India and has led to protest in most coastal areas," he said.

Olencio further stated that the Assistant Commissioner Dr Sanjay Pandey and Joint Secretary Dr Jujjavarapu Balaji along with Rupala "gave us a patient hearing and promised us that they will go back to the drawing board and consider all the NFF objections in totality." NFF demanded that the bill should be deferred and not passed in the ongoing monsoon session unless the assurance given to them is fulfilled.

### **India: Food industry in North India – Synergies and challenges**

<http://www.fnbnews.com/Top-News/food-industry-in-north-india--synergies-and-challenges-66005>

#### "Introduction

India ranks second only to China in terms of food production. India is the leading producer of milk and also leads in the production of varieties of fruits such as mangoes, papayas, bananas and guavas. The food and grocery market is contributing 70% of retail sales. This explains the primary reason for the growth of India's food processing industry in the last few years. A Confederation of Indian Industry (CII) estimate claims that the sector may generate employment of nine million people-days and may attract US\$33 billion investment in the next 10 years.

The linkages between industry and agriculture in India are characterised by synergy leading to the growth of food industry in North India. The food processing sector includes the processing of fruits and vegetables, dairy, meat and poultry, food grains, fisheries and consumer foods (beverages, packaged food and water). The sector is fragmented into unorganised and organised sectors. The organised sector is small and consists of flour mills and processing units of fruits and vegetables, fish, meat, poultry and dairy.

The unorganised sector comprises flour mills, rice mills, pulse mills, oilseed mills, traditional food units, bakeries and processing units of spices, fruits and vegetables. Increase in disposable incomes in North India has led to growing preference for processed foods. The change in food habits of working class is another development. Availability of raw-materials like fruits and vegetables in abundance in North India incentivises the growth of food industry. Markets for

products related to meat, poultry, fisheries, milk products, beverages and grain processing are still underpenetrated and thus these markets offer immense scope for growth.

Commodity based food processing activities include primary processing of commodities like wheat, rice, sugar and spices. Value added food processing includes secondary and tertiary processing like that which is done for bakery items, milk products, honey and ready-to-eat/ready-to-cook products.

The share of commodity based processing is 66% of the overall food processing market while value-added processing is growing at a CAGR of 10%. Dairy sector, health foods, immunity boosting foods, organic foods, beverages and fruit juices, ready to eat products, convenience foods are the food products that are occupying top of the consumer's mind share in the North Indian market.

Challenges faced by the food industry in North India • Linkages between food processing industry and market are weak • Supply Chain is fragmented • Distribution costs have increased • Quality focus has dwindled • High wastage of produce at the farm level • Inadequate storage and cold chain facilities Smaller firms seldom have direct access to the markets. This makes them more vulnerable and financially deprived. Rather than focusing on needs of the market, food processing in North India is still production driven. This can lead to gaps in supply.

The way forward

Food processing sector of the country has the ability to attract an investment of around US\$33 billion in the next decade. The Government of India's efforts to boost growth in the food processing sector (reforms like 100% FDI in marketing of food products) and incentives at central and state government level will benefit the food industry. There is immense potential for growth in the food processing sector in the North Indian states like Jammu and Kashmir, Haryana, Punjab, Himachal Pradesh, Uttar Pradesh, and Uttarakhand.

Mega food parks and cold chain facilities are being established in North India. FMCG manufacturers have established processing facilities and these co-exist along with many small and medium sized food processing units. Newer methods of food processing used advanced technology need to be employed.

Food industry in North India must leverage available technologies to boost productivity and increase operational efficiency. There is increased clamor among consumers for food products with higher nutritional value. Consumers are becoming health conscious spurring the need for innovation.

There is shift in consumer preferences for instant or ready to eat foods and frozen foods that are easy to cook in a shorter time frame. Consciousness of need to maintain good health has increased the demand for food that is qualitative and nutritious. Growth in food processing industry can lead to favourable terms of trade and thus the North Indian market holds immense promise and potential. Changes in consumer behaviour have led to demand for better

infrastructure, setting up of cold storage units and sharpened focus on quality control.

### **India: France adopt roadmap for partnership in blue economy and ocean Governance**

<https://www.uniindia.com/story/India-France-adopt-roadmap-for-partnership-in-Blue-Economy-and-Ocean-Governance>

"India and France adopted the Roadmap on the Blue Economy and Ocean Governance as part of which they will set up a bilateral partnership whose scope will encompass maritime trade, ports, the naval industry, fisheries, scientific research and international law of the seas. The roadmap, adopted during the bilateral meeting between External Affairs Minister S Jaishankar and his French counterpart Jean-Yves Le Drian on Sunday, aims to enhance partnership in the field of blue economy by way of institutional, economic, infrastructural and scientific cooperation.

Both sides will ensure that the competent ministries and institutions are involved in the partnership, which will have an inter-ministerial dimension and include, as required, the private sector. As part of the Institutional pillar, the two aim to forge a common vision of ocean governance based on the rule of law. As part of this, India and France plan to organise an annual bilateral dialogue on the blue economy and ocean governance. The dialogue will play a driving role in the formulation, organisation and follow-up of cooperation projects in the four pillars of the partnership: (i.) institutional, (ii.) economic, (iii) infrastructures, (iv.) scientific and academic, an official statement said.

The NITI Aayog in India, and the Ambassador for Poles and Maritime Affairs in the MoFA in France will be contact points for coordinating the organisation of this dialogue and ensuring the involvement of competent ministries. Both countries are attached to international law of the sea and its compliance across all seas and oceans. To strengthen international law of the sea and adapt to new challenges, they will coordinate their positions in multilateral bodies and negotiations, on an international legally binding instrument under the UNCLOS on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ), among others.

They will hold discussions on the development and strengthening of marine protected areas throughout the world, particularly as part of the negotiations on the future biodiversity global framework. They will also enhance their coordination in view of the fifth session of the United Nations Environment Assembly in 2022 to support the initiation of negotiations for a global agreement on marine plastic waste and microplastic.

Each signatory will regularly involve the other in conferences, workshops and colloquiums on the blue economy and ocean governance that it is likely to organise. France reiterated its invitation for an Indian inter-ministerial delegation to visit France to meet the blue economy ecosystem as soon as the public health situation so permits. The Economic Pillar of the roadmap aims at making the blue economy a source of sustainable growth Both countries will make the blue economy a priority in the development of their economic exchanges.

They will facilitate contacts between economic actors, business heads organisations, technopoles and maritime clusters of the two countries, cross investments, as well as visa issuance to entrepreneurs active in the blue economy. The "Campus mondial de la mer" in France has proposed to make India the Guest of Honour of the Sea Tech Week in Brest from September 26 to 30, 2022, which will be an opportunity to boost industrial partnerships and blue economy innovations.

Given the emphasis on the theme of "Maritime transport: towards smarter and greener solutions" during the Sea Tech Week 2022, the two countries will work closely with their companies in shipping, port management, logistics, dismantling of ships, shipyards, naval equipment manufacturers and other marine manufacturing industries to contribute to the preparations for this event. Both countries can also work together to develop suitable projects to promote marine SMEs and naval construction and the reduction of marine emissions, as well as alternative and cleaner, low and zero carbon marine fuels.

The two sides noted the ongoing discussions between the French Development Agency (AFD) and the Department of Fisheries of the Government of India, with a view to establishing a programme to support the sustainable fisheries sector in India, and encourage their continuation. Projects under blue economy could help in sustainable management of fishery resources as well as aquaculture, eco-fishing ports, integrated coastal zone management, satellite observation and also build capacity of stakeholders through technical exchanges. Both sides are encouraging discussions related to green ports with the Indian Port Association to promote more sustainable connectivity in the Indo-Pacific region.

Given French expertise in aquaculture, France and India will work on commercial development of new farming technologies, joint development in the farming of marine organisms for food, and other products such as pharmaceuticals and jewellery. This could include joint development of brood banks, nucleus breeding centers, hatcheries and nurseries, feed supply, and joint studies for prevention of aquatic diseases. As part of the Infrastructure Pillar, both sides aim at cooperating on sustainable and resilient coastal and waterways infrastructure India is looking to develop its ports, with a focus on sustainable infrastructure, including eco-fishing ports.

In this regard, both sides will encourage sharing of knowledge and methodologies for upgrading current infrastructure, increasing their resilience to climate change, increasing port capacity, developing storage facilities, plug and play infrastructure in the ports, with a special focus on developing 'green and smart ports' equipped with sustainable dredging and ship recycling, which is also one of France's priority areas and involves a zero waste and circular economy approach. They will cooperate on developing domestic waterways, which is one of India's priorities in the field of infrastructure development.

This can include Infrastructure enhancement, fairway development, navigational aids, river information systems. As part of the Scientific and Academic Pillar, both sides aim at better knowledge of the ocean to innovate and protect. Towards this, India and France will enhance their scientific cooperation as well as exchanges of students and researchers. Physical and spatial oceanography, environmental impact studies, combatting marine pollution, knowledge and conservation of biodiversity and marine ecosystem and services, genetic biodiversity mapping,

generating a germplasm inventory, monitoring of fish stocks, fishing techniques, deep sea exploration technology, among others could be areas of strengthened cooperation. In addition, studying the impacts of ocean acidification, pollutions and extreme weather events; coastal risks and resilience can also be part of the scientific cooperation.

Collaboration between operational ocean forecasting centres in India (eg. INCOIS) and France (e.g IFREMER) is envisaged for ocean observations, ocean modelling and forecasting and related capacity building. India and France will remain fully committed to the Knowledge Summit, organised periodically by France and India to foster bilateral scientific cooperation.

Both sides will organize a workshop dedicated to marine science during the Knowledge Summit. France also wishes to swiftly send an expert group of scientists in India so as to meet the main oceanography institutes of India like the Indian National Centre for Ocean Information Services (INCOIS), National Institute of Ocean Technology (NIOT) and National Institute of Oceanography (NIO), as well as the National Centre for Sustainable Coastal Management. India welcomes such a visit, whose organisation it will facilitate.

IFREMER, the French national institute for ocean science and technology and India's Ministry of Earth Science have initiated contacts in order to deepen the cooperation potential, including as part of the Deep Ocean Mission. CNRS, the French National Centre for Scientific Research, is keen to collaborate in Marine biology and Biotechnology, announced as one of the major components of the Deep Ocean Mission proposed by the Ministry of Earth Sciences in 2021. India and France are pleased with the launch of the university and scientific cooperation programme GOAT (Goa ATLantic cooperation in Marine Science and Technology) signed in Brest on January 20, 2020, between the French actors of "Campus mondial de la mer" and the Indian Institute of Technology, Goa.

India and France wish to encourage student mobility in the blue economy sector and in marine science and technology. They call for the development of partnerships between higher education institutions. In order to encourage scientific partnerships in marine sciences, the Embassy of France in India will endeavour, from 2022 onwards, to grant five student mobility scholarships in this field. India will facilitate administrative aspects for the implementation of such partnerships.

India and France will seek private funding to establish an R&D Centre to support joint projects and will endeavour to spur and support projects on blue economy and knowledge about the ocean under the Indo-French Centre for the Promotion of Advanced Research (CEFIPRA/IFCPAR). India and France will encourage scientific cooperation between their research institutions and facilitate administrative procedures, such as visa issuance and authorisations necessary for those involved in research.

**India: French trade minister meets Piyush Goyal, discusses bilateral ties, India-EU trade negotiations**

<https://www.uniindia.com/story/French-trade-minister-meets-Piyush-Goyal--discusses-bilateral-ties-India-EU-trade-negotiations>

"French Trade Minister Franck Riester on Thursday held talks with Commerce Minister Piyush Goyal on taking forward the bilateral relationship as well as the India-EU trade talks. Riester, who is on a two-day India visit, also met Indian industry leaders and heard their views on how France can welcome more Indian companies.

During his talks with Goyal, they exchanged view on the ongoing WTO negotiations on fisheries and vaccines. In a tweet, the French minister said: "With my Indian counterpart Shri Piyush Goyal in Delhi to take our bilateral relationship further, continue EU-India trade negotiations, and exchange views on the ongoing WTO negotiations on fisheries and vaccines.

"The French Ambassador Emmanuel Lenain, said the two ministers today met in Delhi to review ways of boosting France and India's trade and investment relations. "They also discussed cooperation on reforming world trade and reshaping supply chains post pandemic." During his meeting with Indian industry leaders, Riester highlighted France's pro-business reforms, top European FDI destination status and its advantages as a gateway to the European market.

The French Minister also paid a visit to the design facility of French company IDEMIA, a global leader in smart solutions for identity security services, in Noida. IDEMIA specialises in smart solutions for identity security services.

With regard to the WTO negotiations on fisheries, India has opposed a move by developed countries at the World Trade Organisation (WTO) to scrap subsidies for fishermen, demanding a balance between current and future fishing needs of developing countries as well as effective special and differential treatment (S&DT) keeping in mind their developmental need.

India has proposed that countries which are engaged in distant water fishing beyond their natural geographical area should stop their subsidies for 25 years in areas beyond their exclusive economic zones and is also seeking a 25-year horizon for other countries to develop their own fishing sector.

Developed countries are against fisheries subsidies, estimated to be in tens of billions of dollars annually, which they say creates distortions in the global fish markets and leads to overfishing. Developing countries like India want to protect the subsidies for low-income, resource-poor fishermen for whom it is a matter of livelihood.

Riester, who is visiting Delhi and Bengaluru, will also reaffirm France's commitment to the Indo-Pacific, and further the positive French and European economic agenda for prosperity in the region, a French Embassy statement said on Wednesday.

The purpose of the Minister's trip is to consolidate the robust bilateral economic ties with India to meet the current challenges of the global economy. Given France and India's common goal to boost their strategic autonomy this visit seeks to enhance Indo-French cooperation in key industrial sectors."

## **India: Frozen prawn exports to the US declines**

<https://timesofindia.indiatimes.com/business/india-business/indias-frozen-prawn-exports-to-the-us-declines/articleshow/82121099.cms>

"India's frozen prawn exports to the United States declined during the calendar year 2020 to 2,71,831, tonnes from 2,86,902 tonnes of the previous year. However, the country retained the position as the largest exporter of frozen prawn to the US. India's Rs 47,000 crore seafood export (global) business owes its size to frozen prawn as it accounts for 51% of the quantity and 73% of the total dollar earnings.

Frozen prawn exports is a business pioneered by Kerala exporters - the very first container load of frozen shrimp from India was exported by Kochi-based exporter R Madhavan Nayar through Cochin Port on August 3, 1953, which marked the beginning of the modern seafood exports in India. While India suffered a decline in exports, other major competitors increased their quantity of exports – Indonesia, the second-largest exporter increased their exports to 1,60,744 tonnes from 1,33,163 tonnes of the previous year.

Similarly, Ecuador's exports grew to 1,25,818 tonnes from 82,869 tonnes of calendar year 2019. Vietnam, another major player also found a growth in their exports to the US, touching 65,459 tonnes in 2020, up from 55,859 tonnes of the previous year. However, three significant players in this sector suffered degrowth in their frozen prawn exports to the US – Thailand's exports came down to 40,510 tonnes in 2020 from 42,309 tonnes of the previous year.

Similarly, Mexico's exports came down to 25,654 tonnes from 29,547 tonnes of 2019 calendar year. And China's exports came down by half to 10,871 tonnes in 2020 from 20,079 tonnes of the previous year. According to the latest report from Globefish, part of the Food and Agriculture Organization of the United Nations, the harvests in India, Thailand, Malaysia and Bangladesh compared with 2019, which hints at the performance of leading players in the US market.

"Since November 2020, prawn farming in Asia entered the low production season period covering the northeast region of India, Viet Nam, Thailand, Myanmar, and Bangladesh. Ex-farm prices of prawn bottomed out during the fourth quarter of 2020 and have firmed up since, especially for large and medium-sized prawn," the report said.

Globefish noted that supply and demand forecast for 2021 is opaque. "Unfortunately, 2021 is overshadowed again by COVID-19. With increasing movement restrictions in North America, Europe, Asia and elsewhere, this year's supply and demand forecast remain opaque for the time being," it said.

### **India: Future Refrigeration India, aimed at spearheading the fuel transition in the seafood sector**

<https://www.thehindu.com/news/cities/Kochi/cift-awarded-green-refrigeration-project/article37814500.ece>

"The Central Institute of Fisheries Technology (CIFT) here has been awarded a project on "Future Refrigeration India", aimed at spearheading the fuel transition in the seafood sector. The

project named “INDEE+” is an umbrella project covering several dedicated schemes supporting the Indian refrigeration and air-conditioning sector in the transition towards cleaner and green technologies.

This project is coordinated by Norwegian University of Science and Technology, and the Indian partners are CIFT Kochi; IIT Chennai; BITS Pilani; and IISc Bengaluru, according to an official communication. This project intends to promote CO<sub>2</sub>-based refrigeration and heating systems and replace the current refrigerants with natural, clean and safe refrigerants. A two-day workshop on “Future Refrigeration India” was conducted at CIFT here on November 29 and 30.

### **India: Glacier collapse: A worrying sign of what’s to come**

<https://reliefweb.int/report/world/glacier-collapse-india-worrying-sign-what-s-come>

"A deadly flood in northern India, sparked by a cratering glacier, was not an isolated incident but the result of a rapidly warming planet, say experts. They warn the disaster, which has left over 140 feared dead, is a precursor of what is to come unless drastic measures are taken to slow climate change. The flood this week in the Himalayan state of Uttarakhand was caused by a glacier breaking away and falling into the valley, sending a surge of water downstream that engulfed villages and workers at a hydroelectric plant.

Data suggests that, in the coming years, global warming will cause mountain temperatures to rise twice as fast as the global average, whittling away glaciers and threatening communities in the Himalayas, and further afield. “Glaciers around the world are under siege,” said Matthias Jurek, a mountain ecosystem expert with the United Nations Environment Programme (UNEP). “Unless we can limit global warming, support monitoring, early warning, and adaptation measures, disasters like the one in Uttarakhand will, unfortunately, become more common.”

### **Saving glaciers**

UNEP and its partner organizations work with mountain communities and governments worldwide to increase resilience to the impacts of climate change. One of UNEP’s key partners in Asia is the International Centre for Integrated Mountain Development (ICIMOD), which, among other tasks, monitors ice coverage and glacial lakes in the high mountains in the Hindukush-Himalayas. In regions like the Himalaya, the problem of rising temperatures is three-fold: it leads to the melting of mountain glaciers, which can spark floods. It also decreases glacial coverage, which leads to a reduction in the long-term availability of water for people, agriculture, and hydropower.

Finally, as glacier cover diminishes and the area is replaced by water or land, the albedo – the amount of light that is reflected without being absorbed on a surface – also decreases. This could increase solar energy absorbed, leading to more warming. Glaciers are often referred to as the “water towers” of the world, with half of humanity depending on mountains for their water needs. The Tibetan Plateau alone is the source of 10 of Asia’s biggest rivers and provides water to 1.35 billion people, or 20 per cent of the world’s population.

The World Glacier Monitoring Service, a Switzerland-based organization that works closely with UNEP, monitors global glacial change. In the 1960s, its data showed, glaciers were largely in a steady state but since the 1970s glacial loss has increased rapidly, almost doubling every decade until present. They note that this ice loss “leaves no doubt about ongoing climate change.”

### Adaptation action

In the Paris Agreement, Member States committed to limit global temperature increases to well below 2°C, and preferably to 1.5°C, compared to pre-industrial levels. Slowing global warming would help save glaciers, but countries must also prepare mountain ecosystems for an inevitable increase in temperatures. The best way is through adaptation, in other words, introduce a change into the ecosystem that will help combat the impact of global warming.

Within the context of the Adaptation at Altitude programme funded by the Swiss Agency for Development and Cooperation, UNEP and partners are working on innovative solutions to adapt to a warming planet. “In mountain ecosystems, our ecosystem-based adaptation projects are restoring forests and shrubs on mountain slopes, which helps prevent both floods and landslides by holding the soil together and regulating the flow of surface water run-off,” said Jessica Troni, Head of the Climate Change Adaptation Unit at UNEP.

While ecosystem-based adaptation projects cannot stop glaciers from melting, they can significantly reduce the disastrous impacts. Further, they can help mountain communities to adapt to a warmer climate, for example by promoting drought-resistant crops. But it is not just melting glaciers that cause landslides and floods in mountainous regions.

In Nepal, for example, increased monsoon rainfall and a decrease in winter rain, a result of climate change, has led to crop losses due to droughts and floods, placing communities at risk from food insecurity. A UNEP-supported project, known as EbA South, is working to combat the impacts of unseasonal rainfall. The programme has planted over 840,000 seedlings.

These trees and their root systems act like sponges, absorbing water during intense rains and storing it for times of drought. “As global warming increases, crop losses and tragedies like the one in Uttarakhand are likely to become more frequent, making UNEP and its partners’ work on ecosystem-based adaptation all the more important in building the resilience of mountain communities to climate change,” said Jurek.

### **India: Government invites suggestions on blue economy policy**

<https://www.livemint.com/politics/policy/government-invites-suggestions-on-blue-economy-policy-11613551823459.htm>

"The Ministry of Earth Sciences (MoES) has rolled out the draft blue economy policy in the public domain, inviting suggestions and inputs from various stakeholders, including industry, NGOs, academia and citizens. The draft policy document outlines the vision and strategy that can be adopted by the government to utilise the plethora of oceanic resources available in the country. The document has recognised seven thematic areas: national accounting framework for

the blue economy and ocean governance; coastal marine spatial planning and tourism; marine fisheries, aquaculture, and fish processing; manufacturing, emerging industries, trade, technology, services, and skill development; logistics, infrastructure and shipping, including trans-shipments; coastal and deep-sea mining and offshore energy and security, strategic dimensions and international engagement.

India's blue economy is understood as a subset of the national economy comprising an entire ocean resources system and human-made economic infrastructure in marine, maritime, and onshore coastal zones within the country's legal jurisdiction. It aids the production of goods and services that have clear linkages with economic growth, environmental sustainability, and national security. The blue economy is a vast socio-economic opportunity for coastal nations like India to utilize ocean resources for societal benefit responsibly. With a coastline of nearly 7.5 thousand kilometers, India has a unique maritime position.

Nine of its 29 states are coastal, and the nation's geography includes 1,382 islands. There are nearly 199 ports, including 12 major ports that handle approximately 1,400 million tons of cargo each year. Moreover, India's Exclusive Economic Zone of over 2 million square kilometers has a bounty of living and non-living resources with significant recoverable resources such as crude oil and natural gas. Also, the coastal economy sustains over 4 million fisherfolk and coastal communities.

With these vast maritime interests, the blue economy occupies a vital potential position in India's economic growth. It could well be the next multiplier of GDP and well-being, provided sustainability and socio-economic welfare are kept center-stage. Therefore, India's draft blue economy policy is envisaged as a crucial framework towards unlocking country's potential for economic growth and welfare.

The MoES prepared the draft blue economy policy framework in line with the Government of India's Vision of New India by 2030. It highlighted blue economy as one of the ten core dimensions for national growth. The draft policy framework emphasizes policies across several key sectors to achieve holistic growth of India's economy.

The document recognizes the following seven thematic areas. 1) National accounting framework for the blue economy and ocean governance. 2) Coastal marine spatial planning and tourism. 3) Marine fisheries, aquaculture, and fish processing. 4) Manufacturing, emerging industries, trade, technology, services, and skill development. 5) Logistics, infrastructure and shipping, including trans-shipments. 6) Coastal and deep-sea mining and offshore energy. 7) Security, strategic dimensions, and international engagement.

### **India: Government is revamping aquaculture for a 'blue revolution'**

<https://saudigazette.com.sa/article/613544>

"All governments, at different points in time, have opted for a revamp in policies geared at increasing agricultural productivity. Mostly, these have included crop yield, animal husbandry and milk production. However, rarely ever has a government formulated a specific policy

keeping in mind the vast potential that the fisheries sector holds. Though the developmental journey for multiple governments has undertaken massive improvements in areas related to productivity and availability of food sources, the fisheries sector has remained untouched and neglected for long.

This apathy to blue revolution has changed considerably with India's first and biggest fisheries scheme called the Pradhan Mantri Matsya Sampada Yojana (PMMSY), with an outlay of Rs.20,050 crores over a period of five years on Sept. 10, 2021. PMMSY is designed to address critical gaps in fish production and productivity, quality control, adoption of advance technology, post-harvest infrastructure and management, modernization, innovation and strengthening of value chain, traceability, establishing a powerful fisheries management framework and fishers' welfare. While aspiring to consolidate the achievements of Blue Revolution Scheme, PMMSY envisages many new, unique and innovative scheme and vision for the sector.

Obviously, the scheme is part of the larger Blue Revolution that was undertaken by the government of India towards ensuring the growth of the aquaculture industry. Through design, India aimed at tapping the massive reserves of fish around the mainland of India as well as around islands. Additionally, the idea was to modernize the industry through new technologies and processes, which would transform the sector and double the income of the fishermen and fisherwomen involved.

With increased productivity, the assumption was that the post-harvest infrastructure would also get a solid boost with private market players also grabbing a foothold into the sector seeing its immense potential. Therefore, it is clearly not difficult to put the foot on the throttle in these areas resulting in an easy three times exports price-to-earnings ratio by the year 2022 which would lead to profits as well as food security for those families that are dependent on the livestock from these catches.

Though the fish production sector accounted for a meager 1.25% of the national economy in the year 2018-19, its share of the total agriculture production was about 8%. Over the years, especially since the Blue Revolution was embraced by the government of India, the growth rate of the sector has doubled from 5.2% to 10.8% in only four years. Quite simply speaking, the PMMSY has been geared towards achieving five goals: (a.) doubling the income of fishermen and fisherwomen, (b.) increasing the fish production to 2.2 crore tons per annum within a period of 5 years, (c.) reducing the loss in fish production from 20 to 10%, (d.) creating 55 lakh new employment opportunities, and (e.) doubling the exports of fish to Rs.1 lakh crores in next 5 years.

At the same time, the focus was on ensuring the development of the sector through sustainable means without infringing upon the environmental processes of the day. Therefore, the scheme has focused on developing the sector by engaging in sustainable, responsible, inclusive and equitable practices alone. One of the biggest factors towards achieving that has been the up-gradation of fishing vessels and breeding centers, putting in place bio-toilets and aqua-parks, developing aquaculture start-ups and coastal fishing villages.

Special thrust will be given for employment generation activities such as seaweed and ornamental fish cultivation. It emphasizes on interventions for quality brood, seed & feed and species diversification. Singular attention will be given on aquaculture in saline/alkaline areas, Sagar Mitras, FFPOs/Cs, Nucleus Breeding Centers, fisheries and aquaculture start-ups, incubators, integrated aqua parks, integrated coastal fishing villages development, aquatic laboratories network and extension services, traceability, certification and accreditation, RAS, Biofloc & Cage Culture, e-trading/marketing networks, fisheries management plans, etc.

With the sudden interest amongst the private players and government, the Research & Development in Aquaculture and Marine Biotechnology has begun attempting to explore the limitless possibilities of the fisheries sector. More than 122 deep-sea fishing vessels have been upgraded with 2755 bio-toilets being installed. On top of the same, about 53,000 rafts and monolines have already been disbursed to increase seaweed cultivation, which in turn is the most sustainable way of ensuring the survival of fish.

But the growth in volume of production need not mean the upliftment of those involved in the sector, and to ensure the same, the government of India has focused on the welfare of people associated with the sector along with increasing production. With the constant expansion in the Kisan Credit facilities over the last few years, the line of credit available to these fisher folk has quadrupled. Already, about 8 lakh individuals have benefited from the scheme with proposals worth Rs.3,000 crores from 34 states/UTs already approved until last month.

With increased production, the scheme has laid down a solid groundwork for development of the sector to ensure that the income of farmers increases along with the share of Indian aquaculture in the global market. It is only a matter of time that the hard work and vision translates to a massive production growth.

### **India: Government notified National Policy on Marine Fisheries 2017, to encourage fishing**

<http://www.fnbnews.com/Top-News/government-notified-national-policy-on-marine-fisheries-2017-to-encourage-fishing-64796>

"Government has notified National Policy on Marine Fisheries 2017 (NPMF 2017), to encourage marine fishing in the Indian waters. The overarching goal of the NPMF 2017, is to ensure the health and ecological integrity of the marine living resources of India's Exclusive Economic Zone (EEZ), through sustainable harvests for the benefit of present and future generations of the nation. The overall strategy of the NPMF 2017, is based on seven pillars, namely sustainable development, socio-economic upliftment of fishers, principle of subsidiarity, partnership, inter-generational equity, gender justice and precautionary approach.

These seven pillars are to guide the actions of various stakeholders in meeting the vision and mission set for the marine fisheries sector of the country. The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying is implementing a flagship scheme namely Pradhan Mantri Matsya Sampada Yojana (PMMSY), with an estimated investment of Rs 20,050 crore for a period of 5 years from financial year 2020-21 to 2024-25 in all States/Union Territories (UTs).

The welfare related activities supported under the PMMSY primarily include (i) insurance cover for fishers, fish farmers, fish workers, (ii) insurance for fishing vessels, (iii) livelihood support and nutritional support for socio-economically backward active traditional fishers during fishing ban/lean period,(iv) supply of boats and nets to traditional fishermen, (v) supply of safety kits for traditional and motorized fishing vessels, (vi) supply of communication and Potential Fishing Zones devices for motorized boats, (vii) support for acquisition of technologically advanced fishing vessels for traditional fishermen, (viii) Up-gradation of existing fishing vessels, (ix) Open sea cage culture, ornamental fisheries, seaweed cultivation for creating alternative employment opportunities to coastal communities, (x) development of integrated modern fishing villages, (xi) development of fishing harbours, landing centres, cold chain facilities, transport vehicles, marketing to facilitate the fishermen for smooth operation of fishing activities and augment financial returns.

Under the PMMSY, financial support is provided during the fishing ban/lean period in the form of livelihood and nutritional support for socio-economically backward active traditional fishers' families for conservation of fish resources. Under this component, Governmental financial assistance of Rs 3000 per enrolled fisher is shared in the ratio of 50:50 between Centre and general States, 80:20 between Centre and North Eastern and Himalayan States while 100% Central assistance for UTs.

Besides, the beneficiary contributes Rs 1500 annually and the total accumulated amount of Rs 4500 annually is disbursed to the enrolled beneficiary by the respective State/UT at the rate of Rs 1500 per month during the fishing ban/lean period. This information was given by The Minister of Fisheries, Animal Husbandry and Dairying, Parshottam Rupala in the Loksabha.

### **India: Government of India has published the Draft National Fisheries Policy 2020**

<https://indianlegal.icsf.net/en/indian-legal-instruments.html?fisheries=1>

"The 'Draft National Fisheries Policy 2020' [Draft NFP 2020] in 12 languages as uploaded by the Directorate of Fisheries, Government of India on their Website. Please note that the last date for commenting on the Draft NFP 2020 is January 30, 2021. The Drafts of NFP 2020 were uploaded on the Website on January 15, 2021.

### **India: Government will focus on increased credit flow to fisheries, Says India's Finance Minister in her budget speech**

[https://www.indiabudget.gov.in/doc/Budget\\_Speech.pdf](https://www.indiabudget.gov.in/doc/Budget_Speech.pdf)

"To provide adequate credit to our farmers, the Government have enhanced the agricultural credit target to `16.5 lakh crores in FY22. The Government will focus on ensuring increased credit flows to animal husbandry, dairy, and fisheries. I am proposing substantial investments in the development of modern fishing harbours and fish landing centres. To start with, 5 major fishing harbours – Kochi, Chennai, Visakhapatnam, Paradip, and Petuaghat – will be developed as hubs of economic activity.

We will also develop inland fishing harbours and fish-landing centres along the banks of rivers and waterways. Seaweed farming is an emerging sector with potential to transform the lives of coastal communities. It will provide large scale employment and additional incomes. To promote seaweed cultivation, I propose a Multipurpose Seaweed Park to be established in Tamil Nadu. We have launched the One Nation One Ration Card scheme through which beneficiaries can claim their rations anywhere in the country.

Migrant workers in particular benefit from this scheme – those staying away from their families can partially claim their ration where they are stationed, while their family, in their native places, can claim the rest. I am happy to inform you that One Nation One Ration Card plan is under implementation by 32 states and UTs, reaching about 69 crores beneficiaries – that's a total of 86% beneficiaries covered.

The remaining 4 states and UTs will be integrated in the next few months. To further extend our efforts towards the unorganised labour force migrant workers particularly, I propose to launch a portal that will collect relevant information on gig, building, and construction-workers among others. This will help formulate Health, Housing, Skill, Insurance, Credit, and food schemes for migrant workers.

### **India: Govt aims to increase fisheries exports to Rs.1 trillion by FY25**

<https://www.livemint.com/news/india/govt-aims-to-increase-fisheries-exports-to-rs-1-trillion-by-fy25-11628267962763.html>

"The Pradhan Mantri Matsya Sampada Yojana (PMMSY) is being implemented to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India with highest ever estimated investment of ₹20,050 crore for a period of five years with effect from the financial year FY21 to FY25 in all states and union territories.

It also aims to develop brackish water aquaculture, species diversification, value addition, disease monitoring and surveillances, certification, accreditation, traceability and labeling, branding of fish and fish products, training and capacity building among others.

"PMMSY primarily aims to harness the potential of fisheries sector in a sustainable and responsible manner and major activities supported towards sustaining the marine capture fisheries include promotion of sustainable and ecofriendly fishing methods and practices, promotion sea/ocean ranching, diversification of fisheries activities, providing need-based support to States/UTs for formulation and implementation of fisheries management plans, support for creation of post-harvest infrastructure facilities for preservation of fish quality with a view to reduce post-harvest losses, marketing, cold chain facilities and activities on enhancement of fisheries export competitiveness," Rupala said.

Under PMMSY, assistance is also provided for promotion of deep sea fishing, installation of Bio toilets onboard the fishing vessels for maintaining hygiene, prevention of pollution of sea and

oceans.

### **India: Govt allocated Rs 163.30 cr to 41 incubators under startup India Seed Fund Scheme: Piyush Goyal**

<https://www.freepressjournal.in/business/govt-allocated-rs-16330-cr-to-41-incubators-under-startup-india-seed-fund-scheme-piyush-goyal>

"The government on Wednesday said as of November 25 this year, Rs 163.30 crore has been allocated to 41 incubators selected so far under startup India Seed Fund Scheme. Commerce and Industry Minister Piyush Goyal in a written reply to the Lok Sabha said Rs 945 crore has been sanctioned under the scheme for years starting from 2021-22. "As of November 25, 2021, Rs 163.30 crore has been allocated (committed) to 41 incubators selected so far under the scheme," he said.

He also said as of October 2021, Rs 2,291.29 crore has been allocated by the ministry to the Small Industries Development Bank of India (SIDBI), the implementing agency, under the Fund of Funds for Startups (FFS) Scheme. A corpus of Rs 10,000 crore has been sanctioned under FFS Scheme, spread over 14th and 15th Finance Commission cycles. In a separate reply, Minister of State for Commerce and Industry Som Parkash said in the last seven years (2014-21), India has received USD 440.27 billion foreign direct investment (FDI).

Replying to a separate question, Minister of State for Commerce and Industry Anupriya Patel said that in September, India introduced a document at the WTO containing the 'Polluter Pays' principle for fisheries subsidies negotiations. "It proposes a moratorium on subsidies by distant water fishing nations for fishing and fishing-related activities beyond their Exclusive Economic Zone (EEZ) and also seeks reduction commitments on distant water fishing capacity by these nations," she said.

In these negotiations, she added that India has also sought policy space to support low income, resource-poor or livelihood fishing or fishing-related activities up to "our EEZ, to develop and modernize our fisheries sector and for expanding our fishing activities in the high seas".

### **India: Govt eyes seaweed cultivation in a big way to boost fishermen's income**

<https://www.dailypioneer.com/2021/india/govt-eyes-seaweed-cultivation-in-a-big-way-to-boost-fishermen---s-income.html>

"Though bestowed with more than 8,000 km coastline enriched with seaweeds (macro algae) which has huge potential as a sustainable food source and provide livelihood to coastal communities hit by climate change vagaries, India's share in global production is negligible at .01 per cent when compared to China and Indonesia which have grabbed 80 per cent of the market pie.

Now, keen to be not left behind, the Modi Government is leaving no stone turned and taking a series of measures like providing subsidy, capacity building and awareness through webinars and

interaction among others with the interested cooperatives and entrepreneurs to take up seaweed cultivation in a big way, business of which is projected to hit USD 26 billion by 2026. India's present seaweed value is estimated to be around just USD 500 million ie 50 crore and the officials feel that there is a huge opportunity to exploit the potential of the seaweed business.

To spur the sector, the government has already allocated Rs 637 crore for the cultivation of these nutrition-rich marine plants, as part of the Rs 20,050-crore central scheme Pradhan Mantri Matsya Sampada Yojana (PMMSY)—to be spent over the next five years, mainly as subsidy support. In fact, seaweed cultivation has been the pet project of Prime Minister Narendra Modi, who since his days as Chief Minister of Gujarat, had been stressing on its promotion for the fishermen and coastal communities looking to double their income by 2022 and boost the rural economy.

In this direction, to create awareness and deliberate on the strength, opportunities and challenges, an international webinar is being jointly organized by the Department of Fisheries, Union Ministry of Animal Husbandry, LINAC-National Cooperatives Development Corporation (NCDC), and NEDAC, Bangkok next week ie January 28, 2021.

At the webinar, the stakeholders including scientists, government officials and entrepreneurs from India and countries like Canada, Thailand, Philippines and Vitenam will share their views, brought on one platform and steps will be taken work towards forging alliances for promotion of entrepreneurship in the sector through cooperatives. At the same time, the webinar will identify bottlenecks at various levels and will aim at evolving options.

“Much of India's coast is ideal for seaweed cultivation with suitable tropical weather, shallow waters and a rich supply of nutrients. In total, as many as 841 species of seaweed thrive along the region, though only a few are cultivated. The seaweed is not only destined to be a food source, but also a source of biofuels, bio-fertilisers and other products like in pharma and cosmetic,” said Sundeep Kumar Nayak, MD of the NCDC. He said the webinar is the part of series of steps planned to promote seaweed cultivation among the cooperatives in the country.

While Dr. Rajeev Ranjan, Secretary of the Department of Fisheries from the Animal Husbandry Ministry will be the chief guest at the webinar, Manoj Joshi, Additional Secretary from Union Ministry of Food Processing will dwell on his Ministry's support for seaweed based food and Dr. Thierry Chopin, Prof of Marine Biology, University of New Brunswick, Canada will talk about ‘Seaweeds, a key component of Integrated Multi-Trophic Aquaculture (IMTA) providing important ecosystem services, which should be valued.’

The other topics that would be taken up during the webinar will be ‘Seaweed based Sagarika for farmers’ by Dr. US Awasthi, MD IFFCO, India, Dr. Blossom Kochhar, Chair, Blossom Kochhar Group, India will touch upon ‘Seaweeds in the cosmetics industry in India’. Others who will participate include Kavita Nehemiah, Snap Natural & Alginate, India, Dr. Nguyen Van Nguyen, Dy Dir, Res Inst for Marine Fish, Vietnam, Dr. Anicia Q Hurtado, University of the Philippines Visayas, Philippines, Prof Krishna R Salin, Director, NEDAC Bangkok and Dr. Atul Patne, Commissioner Fisheries, Gov of Maharashtra, India among others.

The key beneficiaries of this webinar will be seaweed farmers, budding entrepreneurs, youth, women and vulnerable communities. The webinar also aims at augmenting awareness about seaweed farming as a business and to come up with an actionable, time bound plan which will contribute towards attaining 'Atmanirbhar Bharat,' said Nayak.

It has been estimated that India can produce one million tonnes of dry seaweed providing employment to nearly 2 lakh fishers with an annual income of Rs 1 lakh per individual. Nayak further said that seaweed farming is one of the few sectors in developing countries that allow a certain level of flexibility besides tackling climate change threats.

As a result, women can work in this business and gain an independent income without neglecting their traditional household work. For instance, Tanzania has seen women emerge as leaders in the seaweed world, and they have even moved onto producing seaweed flour in addition to farming, he added.

As per the PMMSY guidelines, seaweed farming will be promoted in a mission mode and supported through financial, marketing and logistical support to ensure income and welfare gains to small fisher population especially women and fisherwomen headed households. Seaweed seed banks, nurseries, tissue culture units, processing and marketing units, etc. would be supported.

### **India: Govt geared up for promotion and development of seaweed cultivation business; Ropes in NCDC & Cooperative Sector**

<https://orissadiary.com/govt-geared-up-for-promotion-and-development-of-seaweed-cultivation-business-ropes-in-ncdc-cooperative-sector/>

"An International Webinar on Entrepreneurship Development on 'Seaweed Business by Cooperatives' was held on 28 January, 2021. It was jointly organized by Department of Fisheries, Govt. of India, LINAC-NCDC (National Cooperative Development Corporation), Department of Agriculture, Cooperation & Farmers Welfare, Govt. of India and NEDAC, an International organisation based in Bangkok. Sundeep Kumar Nayak, MD NCDC and Elected Chairman of NEDAC, Bangkok addressed the webinar, Prof Krishna Salin, Director, NEDAC Bangkok, coordinated the event.

Dr Rajeev Ranjan, Secretary, Department of Fisheries, Govt. of India was Chief Guest. Dignitaries who graced the webinar included Dr U S Awasthi, MD IFFCO, Sh. Manoj Joshi, Addl Secy of the Ministry of Food and Processing Industry, Dr. Thierry Chopin, Professor of Marine Biology, University of New Brunswick, Canada, Dr Blossom Kochhar, Chairperson, Blossom Kochhar Group, Dr. Nguyen Van Nguyen, DyDir, Res. Institute for Marine Fish, Vietnam, Dr. Anicia Q Hurtado, University of the Philippines, Visayas, Philippines, Dr. Atul Patne, Commissioner Fisheries, Govt. of Maharashtra among others.

Nayak informed that coastal countries are participating in the webinar to deliberate on the potential and challenges in the seaweeds farming. Experts from countries like Vietnam, Philippines and Canada among others participated in the event. Nayak also emphasised on efforts required for ties between Asia Pacific nations to boost the seaweed cultivation. The credit for

realizing the worth of industrial scale production of seaweed in uplifting the income of farmers goes to Dr Rajeev Ranjan, Secretary at the newly created Department of the Fisheries, Govt. of India. Ranjan stated that seaweed has the potential to transform the way of farming. With the current world production valued around USD 12 billion, it is estimated to shoot up to USD 26 billion by 2026.

Lamenting India's meagre share, Ranjan said the country's potential has been estimated at a million tonnes, a fourth of which in Tamil Nadu alone. Raised to that level, this vocation can give employment to 6-7 lakh people. Given that India is endowed with around 7,500 km coastline, the Government is all set to take it to industrial scale to help the coastal communities have a sustainable livelihood as well as combat climate change threats.

The Government has allocated Rs 637 crore for the cultivation of these nutrition-rich marine plants, as part of the Rs 20,050-crore central scheme Pradhan Mantri Matsya Sampada Yojana—to be spent over the next five years, mainly as subsidy support. Intensive efforts will be made by the implementing agencies to prioritize formation and promotion of FFPOs, support to cooperatives and women SHG's in the potential coastal areas in the country, under the scheme, said Dr Ranjan.

Manoj Joshi, Additional Secretary of the Ministry of Food and Processing Industry stressed on focusing on a few clusters, to begin with and ensure convergence of the schemes to scale up the production. He said his ministry is all for extending support to the seaweed based food and in fact already have a scheme Centrally Sponsored: PM Formalisation of Micro food processing Enterprises Scheme (PM-FME Scheme) for providing financial, technical and business support for upgradation of existing micro food processing enterprises.

On the similar lines, Dr. Atul Patne, Commissioner Fisheries, Govt. of Maharashtra, said that Maharashtra too has started taking step in this direction to harness the potential of seaweed. "State has a 720 Km Coastline comprising of 7 coastal districts. 12 Talukas from 4 coastal districts are primarily selected for seaweed cultivation in coordination with UNDP. Survey for the selection of suitable sites to cultivate seaweed need to be carried out by Central Fisheries Org. /Institutes immediately on priority," he said. Officials from NCDC presented a nationwide seaweed business scenario and role of NCDC in promoting seaweed business through Cooperatives.

### **India: Govt implementing Rs 20,050 Cr scheme for fish production**

<https://www.latestly.com/agency-news/latest-news-govt-implementing-rs-20050-cr-scheme-for-fish-production-3500757.html>

"The central government is implementing a flagship scheme 'Pradhan Mantri Matsya Sampada Yojana (PMMSY)' with the highest ever investment of Rs 20,050 crore in all states and UTs to increase fish production, the Lok Sabha was informed on Tuesday.

Union Minister for fisheries, animal husbandry and dairying Parshottam Rupala also said that the Centre has released Rs 2,577.49 crore for integrated development and management of fisheries

for a period of five years from 2015-16 to 2019-20 under the centrally sponsored scheme 'Blue Revolution: Integrated Development and Management of Fisheries'.

The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying is now implementing a flagship scheme 'Pradhan Mantri Matsya Sampada Yojana (PMMSY)' with the highest ever investment of Rs 20,050 crore with effect from the year 2020-21 in all the States and UTs, he said during Question Hour.

The minister said the 'Blue Revolution: Integrated Development and Management of Fisheries' was implemented for a period of five years from 2015-16 to 2019-20 and the scheme has ended on March 31, 2020.

Under the said scheme, central financial assistance of Rs 2,577.49 crore was released to the state governments and Union Territories for the development of fisheries and aquaculture."

### **India: Govt launches 3-month campaign to provide Kisan Credit Card to livestock, dairy, fishery farmers**

<https://www.financialexpress.com/economy/govt-launches-3-month-campaign-to-provide-kisan-credit-card-to-livestock-dairy-fishery-farmers/2369927/>

"The Centre on Monday launched a nationwide campaign to provide the Kisan Credit Card (KCC) to all eligible animal husbandry, dairy and fishery farmers in the country and is targeting to enrol around two crore people in the next three months. Union Minister of Fisheries, Animal Husbandry & Dairying Parshottam Rupala virtually launched the 'Nationwide AHDF KCC campaign' from November 15, 2021, to February 15, 2022. In the Budget 2018-19, the government had announced extension of the KCC facility to animal husbandry farmers and fishermen to help them meet their working capital requirements.

Addressing the event, Rupala said the campaign aims to provide KCCs to all eligible animal husbandry, dairy and fishery farmers in the country and ensure that they get institutional credit. The Department of Animal Husbandry and Dairying, Department of Fisheries and Department of Financial Services are organising this campaign. The circular conveying the detailed guidelines for organising this campaign has been issued to states on November 10.

The necessary instructions to banks as well as state government have also been issued by the Department of Financial Services. Speaking to reporters after the event, Department of Animal Husbandry and Dairying Atul Chaturvedi said there are 9-10 crore farmers estimated to be engaged in animal husbandry and dairy sector while there are 1.5 crore fishermen in the country. He said the Centre is targeting to provide KCC to around two crore eligible animal husbandry, dairy and fishery farmers during the three-month campaign.

Chaturvedi said the farmers can get a credit limit Rs 1.6 lakh on the KCC without any collateral. Jatindra Nath Swain, Secretary of Department of Fisheries, said the target is to provide to provide credit card facility to around 50 lakh fishermen in this campaign. In the absence of institutional credit, he said fishermen have to take credit from money lenders at a very high

interest rates. Debashish Panda, Secretary of Department of Financial Services, said, “In the last couple of weeks, we have had a series of meetings in the last couple how to step up the campaign in order to ensure that the targets set by the departments are achieved in the form of issuance of credit card to farmers across the country.”

The animal husbandary, dairying and fisheries sector has huge employment potential, he said, adding the sector plays an important role in enhancing farmers income. In the last one year, the government has achieved a lot of traction as far as the KCCs are concerned and the target of issuing about 2.5 crore credit card has been achieved. However, Panda said there is a need to do much more in the animal husbandry and fisheries sector. He stressed on making concerted efforts to collect applications at the ground level.

Panda said several meeting have been held with state government officials and bankers to make this campaign successful. Banks have been instructed to convert these applications into KCCs, he said, adding that banks have been asked to brand new cards exclusively for this sector. Panda said there would be no death of funds for this sector. He said the three departments would closely monitor this campaign in order to ensure that targets are achieved.

A Special Drive was organised last year, from 1st June 2020 to December 2020 31, for providing AHDF KCC to eligible dairy farmers of Milk Cooperatives and Milk Producer Companies. As an outcome over 14 lakh fresh AHDF KCC has been sanctioned, according to an official statement. “Livestock sector is crucial to the Indian economy today, comprising one third of the agriculture and allied sector GVA (gross value added) and having over 8 per cent CAGR (compound annual growth rate),” it added.

### **India: Govt working on SOP for Kisan Credit Cards for fisherfolks**

<https://www.onmanorama.com/news/india/2021/09/28/govt-working-on-sop-for-kisan-credit-cards-for-fisherfolks.html>

"Minister for Fisheries, Animal Husbandry and Dairying, Parshottam Rupala on Monday said his Ministry is working out the modalities of the Standard Operating Procedures (SOP) for inclusion of fisherfolks under the ambit of Kisan Credit Card (KCC). ""Insurance for fishermen in freshwater and marine fishing both is an issue that has been deliberated for long.

Another critical issue is that of extending facility of KCC to the fish farmers to meet their demands of working capital. We are working out the SOP for the same and I invite all stakeholders to send in their suggestions,"" Rupala said.

Rupala was addressing a virtual conference by ASSOCHAM, an apex chamber of commerce of India, on Fisheries and Aquaculture Industry on the theme of 'Strategic roadmap towards enabling Blue Revolution & Economic Growth.' He also spoke about how the ambitious Pradhan Mantri Matsya Sampada Yojana (PMMSY) has been striving to bring in change for the fish farmers and it can help increase exports.

He highlighted the features of PMMSY along with various schemes run by the government to promote and uplift the sector. Referring to an earlier speaker's suggestion of increasing the credit limit to beyond Rs three lakh under KCC, Rupala said, ""It is not a matter of whether Rs three lakh is less and needs more. For an ordinary fisherman, whose requirement often is Rs 25,000 or Rs 30,000, he often ends up going to a local sahukar and gets trapped into debt. KCC is meant for helping this kind of fisherfolks.""

The Minister also said, the availability of land for fish farming and a policy regarding the same are a long pending issue and there is a need to take a policy decision regarding the same. Rupala admitted that there is a dearth of post-harvesting infrastructure in the fisheries industry, and that there is a need of further investment into this field and said, ""We would definitely work out what all can be done under the PMMSY.""

ASSOCHAM said, the objective behind this virtual conference was to deliberate upon the issues which can improve the rate of growth in this sector and to record all the necessary steps to enter into a new era of fisheries & aquaculture to improve productivity along with a strong focus on the latest opportunities in the sector along with a focus on technology, marketing, finance, export and infra facilities.

The session was attended by major industry bodies of fisheries and aquaculture industry/leading industrialists, exporters, educationists, bureaucrats, FPOs, and other industry professionals.

### **India: Goyal, Riester review India-France trade relations, discuss WTO matters**

<https://www.thehindubusinessline.com/economy/goyal-riester-review-india-france-trade-relations-discuss-wto-matters/article65211460.ece>

"Commerce & Industry Minister Piyush Goyal and his French counterpart Franck Riester reviewed bilateral trade and investment relations and discussed ways to foster greater ease of doing business in a meeting in New Delhi on Thursday. The two Ministers also discussed the on-going talks on a India-EU FTA and the negotiations at the WTO on curbing harmful fisheries subsidies and improving access to Covid-19 vaccines and therapeutics. "With my Indian counterpart Shri Piyush Goyal in Delhi to take our bilateral relationship further, continue EU-India trade negotiations, and exchange views on the ongoing WTO negotiations on fisheries and vaccines," Riester tweeted after his meeting with Goyal.

The French Minister, who is in India on a two-day visit, also met representatives of Indian industry and discussed ways in which France can become a more attractive destination for investors. "Minister Franck Riester met Indian industry leaders & heard their views on how France can welcome more Indian companies. The Minister highlighted France's pro-business reforms, top European FDI destination status & its advantages as a gateway to EU market," French Ambassador to India Emmanuel Lenain tweeted.

The two Ministers stressed on the need for successfully negotiating the proposed India-EU FTA to give a further boost to bilateral trade and investments, a source following the matter told Business Line. India-EU negotiations on the FTA has not yet been able to pick up pace because

of lingering issues from the first phase of talks. Officials are, however, hopeful that talks would begin in full earnest soon.

“Riester and Goyal discussed WTO issues also, especially the on-going negotiations on curbing fisheries subsidies and ways in which access to Covid-19 vaccines and therapeutics could be improved,” the source said. The French Minister is also scheduled to go to Bengaluru, where he will visit Dassault Systemes, a company that provides businesses and people with collaborative 3D virtual environments to imagine sustainable innovations, according to a statement issued by the French Embassy in India on Wednesday.

He will visit the Indian company CENTUM Electronics, which has offices in France, providing precision micro electronics that are critical for applications in many sectors, including aerospace and defence. Riester will meet representatives from French and Indian tech ecosystems, brought together by French Tech in Bangalore, which creates global connections for innovation, the release noted. France is a significant trading partner with India in Europe, with total trade at \$11 billion in 2019-20 which slipped to \$9 billion in 2020-21 due to pandemic-related disruptions."

### **India: Healthy rivers, fish and fishers is theme for India Rivers Week 2021**

<https://www.onmanorama.com/lifestyle/news/2021/11/04/india-rivers-week-2021.html>

"Rivers, fish and fisherfolks - an equation that happily coexisted for centuries was disturbed due to ""development"", majorly over the last half-century. Once the free-flowing and unpolluted rivers had a healthy riverine ecosystem with a variety of fish and were devoid of greedy sand miners.

Then came the fragmentations caused by hydropower dams and barrages, diversion of waters for domestic, agriculture and industrial usage, massive pollution from human sewage, industrial effluents and last but never the least, the sand and boulder mining that has reached humongous proportions, says the India Rivers Forum.

The result is that the productive river-based capture fisheries have declined across the country, and this will be the theme for deliberations at this year's edition of 'India Rivers Week' celebrations, it said. Organised by the Forum, the series of five dialogues (second year to be held virtually) with a focus on the theme focusing on various aspects of River Capture Fisheries and the final dialogue focusing on Governance and Way Forward for this topic. These sessions will be held online between November 8 and 27, according to K.J. Joy from the organising team. "

"If you look at the environment or social impact assessment of any dam, hydropower project or diversion, there is never any credible assessment of the impact of the project on riverine fish or the fisherfolk, whose livelihoods would be affected by such projects. There has never been any compensation, leave aside resettlement or rehabilitation of the people so affected by the destruction of their fisheries livelihood," he said.

The Ganga e-flows notification of October 2018 that became possible only due to decades of struggle by people and advocacy groups, is not even based on assessment for the need to sustain

fisherfolk livelihoods. Even the National Resettlement and Rehabilitation Policy does not address the injustice heaped on the fisherfolk communities, he added. However, the demand for fresh-water and estuarine fish by a growing population is now met, to a considerable extent, by aquaculture and reservoir-based fisheries, most of the time, managed by bigger firms.

This has, further, marginalised the river-based fishers." "India Rivers Forum also believed that the fisheries departments and institutions who ought to have taken a lead role in championing the cause of river protection for freshwater fisheries have, unfortunately, taken to ex-situ aquaculture or reservoir seeding targeting just fish productivity with little bother or focus on need to maintain indigenous fish biodiversity in free-flowing rivers.

The five sessions of the India Rivers Week will discuss the challenges posed and how to find a bridge across these troubled waters to a future with ecologically sustainable river fisheries in free-flowing rivers, Joy added.

### **India: Hit by Covid, cyclone & high fuel price, country's fishing industry finds itself marooned**

<https://theprint.in/economy/hit-by-covid-cyclone-high-fuel-price-indias-fishing-industry-finds-itself-marooned/674064/>

"The fisheries sector in the country is grappling with mounting losses for the second consecutive year, as business continues to remain sluggish due to the Covid lockdowns in the key summer months. The demand and price drop due to the lockdown has been further aggravated by cyclone damage on either coast of the country, coupled with a rise in input prices such as fuel and transportation. "Each trip into the seas costs one boat about Rs 30,000-40,000 due to fuel, net and ice costs," said Kiran Koli, secretary of the Maharashtra Machhimar Kruti Samiti (MMKS), a fisherman's collective.

"The cost recovery has dropped to just Rs 5,000-7000. On the other hand, the price of fuel and other inputs is increasing every day leading to crores of losses to the sector," Koli added. "Last year, fishermen had to suffer heavy losses due to national lockdown, unseasonal rains, and cyclones. The previous year's loss was at least Rs 1,000 crore but the state government compensated us with just Rs 65 crore. A lot of women involved in the fish selling business had to pledge their gold and other ornaments to pay off their debts. The state government should pay at least Rs 25,000 to each fishing family."

#### **Hit by lockdown**

Stakeholders say that the lockdowns in the states have severely affected business. In Maharashtra for instance, under new Covid lockdown rules, business in wholesale fish markets has been restricted to until 11 am. This leads to an early shutdown of business in the market with a decline in trade. According to the fishermen, the restriction has disrupted the seafood supply from coastal areas of Mumbai and the Konkan region, leading to a fall in demand and prices. They now want Maharashtra to increase trading hours in wholesale markets to be extended to 2 pm each day.

“Trading hour restrictions are worse for business than even the fear of Covid. Earlier, big traders would reach seaside ports in the early hours to buy seafood in bulk,” said Prafull Bhoir, a representative of the Fishermen Sangharsh Samiti in Mumbai. “Thereon it would be taken to non-seaside markets in the next 2-3 hours, and finally to customers in villages, towns and local markets.” “Now, major markets close after 11 am, disrupting the cycle. The majority of fishermen and traders do not have freezing and storage provisions,” he added. “Usually, fresh fish is sold on the same day, not 2-3 days later.”

Due to this trading, interest has plunged leading to a dip in demand and prices.” Other fish traders in non-seaside cities echo the same concern, adding that to make matters worse, freight rates have increased. Mahesh Koli, a fish trader from Sangli, told ThePrint. “All local functions and celebrations have stopped, causing zero demand in business. The same is in dhabas and restaurants across cities and villages. Until demand from such commercial venues revives, business will be sluggish.”

“Even if we somehow bring fish to local markets and sell it at retail prices, it still means we don’t recover transportation costs, let alone get profits,” he added. “Now a customer can buy fish worth Rs 100/kg for just Rs 25-50/kg. Hence traders have restricted or stopped business. Even the sale of fish at Mumbai ports is one-tenth of what it is on usual days.” Mahesh added that people are also staying away from popular fish markets due to fear of crowds. “Consumer income has also decreased,” he said. “So why would anyone buy expensive fish such as Bombay Duck. Therefore, demand and price have also decreased significantly.”

No better on the east coast

The lockdown has diminished the possibility of profitable business in the fisheries sector on the east coast and other states as well. Dr. Kumaravelu, vice-chairperson of the National Fishworkers’ Forum (NFF) in Tamil Nadu, told ThePrint that commercial establishments remaining shut in the lockdown has severely affected their business. “Fishermen are not able to sell to the major source of income, which are restaurants and markets that are shut due to lockdown,” he said. He said that the annual ban on deep sea fishing has further hurt the sector. India imposes an annual ban from April 15 until 14 June on the east coast, and 1 June and 31 July on the west coast every year.

This year, however, the fisheries ministry has reduced the ban period on the east coast from 15 April to 31 May, and on the west coast from 15 June to 31 July. “The situation has become severe after the monsoon ban, as around 4.8 million people in the state who rely on fishing have been thrown out of jobs for more than a couple of months,” he said. “In Chennai’s major fish market of Kasimedu, around 150-200 tonnes of fish arrive on Sundays while 100-150 tonnes land up on weekdays. This has dropped to below 50-80 tonnes.”

“Popular produce in local markets also witnessed sudden and massive price drops. The prawn rate dropped to Rs 150/kg from the usual cost of Rs 600-650/kg,” he added. Similar sentiments are echoed by fishermen in neighbouring Andhra Pradesh. Vijay Reddy, a fish farmer in Krishna district, told ThePrint, “The supply chain of markets both from coastal and inland areas have

been disrupted. Fish farmers in the state have lost a lot of money due to lack of business and demand as access to markets in major metro cities such Delhi has been restricted.” “Pangasia or basa is one of the most popular varieties in Delhi and Punjab markets but its price has declined by more than half,” he added. “Several inland fishermen are not harvesting, fearing that Covid condition will worsen.”

Usman Seragai, the NFF secretary in Gujarat and owner of a seafood company, said it was a similar situation in the state. “Though fishing was allowed as an essential service during lockdown, vital infrastructures related to it such as transport and markets were heavily curtailed leading to less price recovery on the catch for fishermen even after paying increased input and transportation cost,” he said.

“For example, in the Kutch area, the price of Bombay Duck came down from Rs 4,500-5,000/40 kg to Rs 3,000/40kg. The price of Pomfret, another popular fish, dropped from Rs 950/kg to Rs 600/kg,” he added. “The lack of labour and other restrictions also dropped exports drastically. The enormous losses caused by sudden lockdown have pushed people employed in the fisheries sector into a vicious cycle of hunger, unemployment, and debt trap.”

#### Cyclone damage adding to woes

Frequent cyclones have also wreaked havoc on the already battered fisheries sector on either coast of the country. While Cyclone Tauktae affected the west coast throughout the latter half of May, Cyclone Yass rampaged through the east coast around the same time. According to the fishermen in Odisha, Cyclone Yaas, which made landfall in the state on 26 May, and the resultant floods have shattered the hopes of thousands of inland shrimp and fish farmers in districts such as Bhadrak, Balasore and Kendrapara among other coastal areas. Pranav Das, a fish and shrimp cultivator in Kendrapara, told ThePrint, “My shrimp farm of over 8 acres has been completely wiped away by the tidal wave and the floods caused by the cyclone.

It has caused me to lose at least Rs 60 lakh from the ponds. It will take me years to recover from the loss and the loans.” Allaya of the Odisha Marine Fish Producers’ Association told ThePrint that the government should provide the shrimp farmers with interest-free loans. “The shrimp farmers of Balasore, Bhadrak, Kendrapara, and Jagatsinghpur have incurred massive losses. First, it was Cyclone Amphan, then Covid and now, Cyclone Yaas,” he said. “The government should provide interest-free or low-interest loans to fishermen to recover from such huge losses caused by cyclones and floods.”

Usman Seragai said Cyclone Tauktae did similar damage in Gujarat. “In coastal areas around Una, such as Jaffarabad and Navabandar, over 1,000 boats of fishermen were either damaged or swept off in the cyclone,” he said. “Many vulnerable homes of fishermen were also blown off causing further losses to them.”

#### Inland fisheries sector worst affected

According to experts, the damage in the inland fisheries sector has been twice as much as the marine fisheries sector. The inland sector plays a vital role in providing dry fish, fish oil, and

fish as well poultry meal for domestic consumption as well as exporting products like Norwegian Salmon to other countries such as Chile and Norway. Debasis Shyamal, an NFF member in West Bengal, told ThePrint, “Boats and other infrastructure of small coastal and inland fishermen with little capital have been swept off by the cyclone. Smaller fishes or prawns in the inland sector were wiped off.”

“Even after lockdown, companies that buy material for fish oil or poultry meals are missing due to a dip in demand in their export and other domestic ends,” he added. To add more woes, the monsoon fishing ban has also kicked in. This period is normally utilised by fishermen to repair their boats but most say they have no capital for it. Satyajeet Jharve, a fisherman in Maharashtra’s Ratnagiri, said, “Every fisherman has taken a loan of at least Rs 1 lakh to recuperate losses and to maintain boats and other stuff.

However, with the current condition, we are uncertain whether we will be able to pay that back on time.” Even women workers in fisheries who are also a part of the sector in fish vending and other businesses have been adversely affected. Narendra Ramachandra Patil, chairperson of NFF, told ThePrint, “Livelihood of over 16 million fisherman and fish workers have been devastated by Covid and cyclones in the last two years. Women workers who form half of the workforce have been worse hit as they manage households with most of the sales business in the sector.”

### **India: How coastal inhabitants of the country make a living through seaweed cultivation**

<https://twocircles.net/2021dec23/444480.html>

"The maritime rural population living along the coastline of Gujarat (1600 km) and Tamil Nadu (1076 km) cultivate seaweeds for a living. With the help of certain technical proficiency, these people have made seaweed farming a successful venture and earn a decent earning of about Rs 15000 – Rs 20000 per month. Seaweed is one among several renewable marine resources. Around 1000 coastal inhabitants are using three techniques, namely floating bamboo raft, tube net and long-line methods for undertaking seaweed farming. Nevertheless, the first two methods are widely practised.

Farming takes about 40–60 days depending on species. It takes place mostly throughout the year except for the monsoon period when the sea is rough. India possesses as many as 434 species of red seaweeds, 194 species of brown seaweeds and 216 species of green seaweeds. Most of these seaweeds are reasonably important. *Kappaphycus alvarezii*, in particular, has been cultivated in the states of Tamil Nadu, and tails are successful in Gujarat, Andhra Pradesh, and Maharashtra.

However, fisher folks of Gujarat and Tamil Nadu are actively cultivating seaweeds compared to the other states mentioned above. Experimentation on seaweed cultivation began about fifty-eight years ago by the scientists of Council of Scientific and Industrial Research–Central Salt and Marine Chemicals Research Institute (CSIR-CSMCRI) in Bhavnagar, Gujarat. They provide technical proficiency including the ambient parameters required for cultivation with salinity between 25-30 ppt (grams per kilogram), surface seawater temperature between 28-32 degrees Celsius, good mixing of water during high/low tide cycle for sufficient availability of nutrients and dissolved oxygen.

Farming is recommended in intertidal areas where water is always present during low tide so that plants do not get exposed to direct sunlight and desiccation. Notably, the cultivation also creates natural habitat, which provides shelter, diet and breeding grounds to several marine taxa and thus is responsible for structuring marine habitats and providing ecosystem services. For the last eight years, Gohil Shakti Singh (35), belonging to the fish farming community at village Simar in Bhavnagar District of Gujarat, says his job is defined.

“A 2-inch sapling of seaweed has to be fastened on a 25-metre long rope in a gap of less than a foot. From then on, I have to navigate for half a nautical mile into the sea on a dinghy to drop the rope together with seaweed. It is kept for 30-40 days in the seawater, where it rapidly grows,” informs Singh. The fronds of alginophyte *Sargassum cinctum* were grown up to 15 to 52 cm in a 40 days growth cycle.

This success has given impetus to initiate farming of yet another important agarophyte *Gracilaria edulis* at Krusadai Island in Tamil Nadu. Economic importance of seaweed Red algae, *Gelidiella acerosa*, are the principal source for the production of bacteriological grade agar, which is economically important while *Gracilaria edulis* yields food-grade agar and *Gracilaria dura*, agarose. The techniques employed are simple, cost-effective, utilize readily available material, does not require specialized skills and can be practised at the individual farmer level by little training.

Nevertheless, species of brown algal genus *Sargassum* and *Turbinaria* are exploited from nature by alginic acid industries; cultivation of these is not felt necessary due to large quantities of biomass available. Talking to TwoCircles.net, Dr Vaibhav A. Mantri, Principal Scientist & Divisional Chair Applied Phycology and Biotechnology Division, CSIR-Central Salt and Marine Chemicals Research Institute, said, “The collectors are mostly women who collect the seaweeds for 10-12 days every month coinciding with low tides throughout the year.

While for farming it takes 40-60 days depending on species and it takes place mostly throughout the year except for monsoon period when the sea is rough.” The dried seaweeds are weighed (with about 30% moisture content permissible in commercial purchase) and sold to the dealers, who on the behalf of industry procure the biomass at a predetermined rate. The opportunities in the collection sector are limited and seasonal but for farming, they provide continuous remuneration.

“CSIR-CSMCRRI helps the seaweed cultivation self-help groups to have linkages with our licensees. We also through various state governments try to train selected people in processing the harvested biomass so the additional opportunities could be created under the ‘Empowerment model’,” the scientist added. In the model where fishermen can handle 45 rafts (one raft seeding and harvesting per day) for each cycle and it can produce 9000 kg biomass per cycle (considering 200 output per raft), as per the handling capacity of the individual, the production can be increased.

Challenges

The precaution needs to be taken like other crop plants for epiphytes and diseases, conservation of good and elite germplasm for subsequent seasons during monsoon. The selection of appropriate methods of farming is yet another deciding factor for success. To date, only *Kappaphycus alvarezii* has been commercially cultivated. “Seaweed with germplasm stops growing rather it gets decayed while the weed without germplasm is producing much better crops,” A.Jeyalakshmi, a seaweed farmer from Rameswaram admits over phone.

“The biggest challenge is the availability of adequate seed material for commercial activities, we have worked out on this and the new protocol has been developed for production of seed,” discloses Dr Mantri. The sector is currently operating as an informal industry and needs conscious efforts in the establishment of Self Help Groups (SHGs) and fisheries co-operative in all the coastal states and Union Territory and connecting them with the seaweed processing industry. At present, permission is required from several state departments to start commercial farming and the establishment of new entrepreneurs.

According to him, there should be a single agency, which should be granting permission to undertake commercial farming. The special use of coastal areas for seaweed farming and other activities needs clarity, for better utilization of space. Therefore, demarcation of specific cultivation areas along the coast and establishing a permanent anchoring system for undertaking commercial cultivation is essential.

Besides, the ban on the export of seaweed biomass needs to be removed. This ban should be only removed in the case of cultivated material as this would give impetus to farming rather than natural collection, which is an unsustainable practice. Since commercial seaweed farming is put to the vagaries of nature and cyclones, disease and rain are the common impediments that might impede the prospects of the farming business. The beneficiaries should be given crop insurance to keep the sustained interest of fishermen in this activity.

Research Institute’s role Council of Scientific and Industrial Research-Central Salt and Marine Chemicals Research Institute, Bhavnagar is the leading national institute working on seaweed cultivation and utilization, where Applied Phycology and Biotechnology formerly Algology division dedicated only to carry the research on this domain.

The first-ever seaweed cultivation experiments were conducted in India at Porbandar, Gujarat from November 10 – December 20, 1963, by Francisca Thivy the founder of the Algology division at CSIR-CSMCRI. “The institute takes pride in being the first to pioneer *Kappaphycus alvarezii* cultivation, heralding an era of commercial seaweed farming in India,” states Dr Mantri.

The institute has been imparting needed skills for farming for the last five decades. Given the fact that there is a low literacy level in the coastal rural area due to poor educational facilities coupled with meagre self-employability, seaweed farming is paving the way for young entrepreneurs and women fisher folks. According to Dr Mantri, one of the surveys carried out revealed that the monthly income of each member is about Rs.15000-Rs.20000. The study confirms improvement in the socioeconomic status of coastal inhabitants engaging in seaweed farming.

“These accrued benefits have attracted more participation from women fisher folks and offer opportunities for economic empowerment to women contributing positively toward reducing gender bias. Till today more than 5000 people have been sensitised for this activity across India and there are about 1500 fishermen in Tamil Nadu alone who have engaged in seaweed farming of which about 90% are women,” Dr Mantri told TwoCircles.net.

#### Positive effect on marine environment

Any new industry in the coastal area acts as a harbinger of economic growth, but also brings a lot of issues such as pollution. The farming of seaweed on the other hand is a non-polluting industry. It also on the other hand helps in reducing the pressure on natural harvest, which in turn aids conservation of natural resources.

When commercial cultivation takes place the niche environment is created, thus cultivation rates and biomass growth provide shelter, diet, habitat and breeding grounds to several marine taxa and thus are responsible for structuring marine habitats and providing ecosystem services. Nevertheless, one needs to be cautious as there would be a lot of trash material going to be formed due to old /used infrastructure. The proper disposal protocol needs to be developed for this to take care of issues by environmental activities.

#### **India: How India has approached customary international law**

<https://indianexpress.com/article/opinion/columns/how-india-has-approached-customary-international-law-7716742/>

"An important report on “India and international law” by the parliamentary committee on external affairs was recently presented to the Lok Sabha. Among other things, the report discusses how Indian courts have dealt with international law. The committee observed that India follows the principle of “dualism”, that is, international law does not automatically get incorporated into the domestic legal regime. An act of Parliament is necessary to transform international law into municipal law as recognised by Article 253 of the Indian Constitution.

However, the committee believes that the Supreme Court has digressed from the principle of dualism and moved towards monism by holding that customary international law (CIL), unless contradictory to domestic law, is part of the Indian legal regime even without an enabling legislation enacted by the Parliament. CIL refers to international law norms derived from a custom that is a formal source of international law.

India has indeed moved away from the principle of dualism towards monism by judicially incorporating not just CIL but also international treaties including those treaties that India has not signed. As regards customary norms, the Supreme Court in *Vellore Citizens Welfare Forum v. Union of India* held that CIL which is not contrary to the municipal law shall be deemed to have been incorporated in India’s domestic law.

This principle has been affirmed in subsequent decisions. The apex court in *Research Foundation for Science v. Union of India*, relying on the *Vellore Citizen case*, declared that the precautionary principle, an environmental law concept, is part of CIL and thus part of Indian law. Several facets of this judiciary-led transition from dualism to monism require elucidation. First, the apex court incorporating CIL as part of the domestic legal regime is consistent with the practice of other common law countries.

However, the sticky part is the ease with which CIL is accepted as part of Indian law. For instance, the Supreme Court's willingness to readily accept the precautionary principle as part of CIL flies in the face of international law debates where the acceptance of this principle as a customary norm remains contested. Determination of whether a particular provision indeed constitutes a binding customary norm under international law requires the double requirement of state practice (the actual practice of the states) and *opinio juris* (belief that the custom is part of the law). The apex court rarely conducts such an analysis.

Second, the apex court hasn't been consistent in incorporating CIL. In a 2021 case, *Mohamad Salimullah v. Union of India*, the court appallingly refused to rule against the deportation of Rohingya refugees to Myanmar despite the principle of non-refoulment being part of CIL. The principle of non-refoulment prohibits a country from returning refugees to countries where they face a clear threat of persecution.

But curiously the court did not incorporate this principle into Indian law. Third, international law-making is often critiqued for democratic deficit. Arguably, judicially incorporating international law without parliamentary scrutiny legitimises such a democratic deficit. Accordingly, judicial incorporation of international law is questioned because it amounts to the judiciary riding roughshod over the Parliament.

The committee too feels that this could become a bone of contention between the judiciary and the other organs of the state. Fourth, the bright side of judicial incorporation is the progressive development of law when the executive and the parliament for ideological or political persuasions fail to enact laws transforming a liberal international legal norm into domestic law.

India's spectacular failure to enact a refugee law incorporating the principle of non-refoulment is a classic example of this. The apex court squandered the terrific opportunity in the *Mohamad Salimullah* case to incorporate non-refoulment as part of the Indian legal regime.

The committee's recommendation that the executive should take note of the vacuum in domestic legislation on customary norms in international law and develop adequate domestic laws is an important one. However, this should not mean expanding domestic law that rejects binding customary norms in international law.

On the contrary, India should enact domestic laws that are harmonious with CIL. The judiciary, on its part, should demonstrate greater analytical rigour in interpreting and applying CIL as part of the Indian legal regime.

Full document is available at:

[https://eparlib.nic.in/bitstream/123456789/811608/1/17\\_External\\_Affairs\\_9.pdf](https://eparlib.nic.in/bitstream/123456789/811608/1/17_External_Affairs_9.pdf)

### **India: How overcrowding, antibiotics and other practices are affecting fish in farms**

<https://www.indiatimes.com/news/india/how-overcrowding-antibiotics-and-other-practices-are-affecting-fish-in-farms-across-india-535193.html>

"India is one of the largest freshwater fish producers in the world and the aquaculture sector is only growing. As per the National Fisheries Development Board (NFDB) data, about 14 million people were employed in the fishery and aquaculture sector and brought Rs 45106.89 cr export income in 2017-18.

But what happens inside these farms is far from ideal and at times even dangerous for both the fish and those consuming it. An investigation by animal rights group Animal Equality has exposes the cruel and illegal practices in the fishery and aquaculture sector and inefficient utilisation of precious resources like water and land.

#### **Grim observations**

The several fish and shrimp farms, hatcheries and fish markets from Feb 2019 to May 2020 in West Bengal, Andhra Pradesh, Tamil Nadu and Telangana, which are known for their fish production. "The objective of the study is to urge the government to introduce welfare measures for aquatic animals. Animal Equality has presented these findings to the Ministry of Animal Husbandry, Dairying and Fisheries along with a list of recommendations to reduce the suffering of fish. Some of these include adequate space allocation, making veterinary care mandatory, stunning fish before slaughter and stopping transport and sale of live fish.

The government introduced Draft National Fisheries Policy 2020 and to that we have urged them to include our recommendations stating that one of the objectives of the policy should be to avoid the unnecessary suffering of aquatic animals, which stems from the objectives of the Prevention of Cruelty to Animals Act, 1960.

Article 48 of the constitution states that animal husbandry should be organised on modern and scientific lines. Our recommendations are in consonance with both of these points." Amruta Ubale, Senior Director of Public Affairs at Animal Equality said. It found several glaring laxities of fish welfare standards and those working in these farms.

### **India: Huge potential to capture in domestic fisheries sector: Rupala**

<https://www.outlookindia.com/newscroll/huge-potential-to-capture-in-domestic-fisheries-sector-rupala/2168230>

"Fisheries, Animal Husbandry and Dairying Minister Parshottam Rupala on Monday said there is a huge domestic market to capture in the country's fisheries sector as he assured possible government support in reviving the sector. Addressing a virtual event organised by ASSOCHAM,

the minister said Pradhan Mantri Matsya Sampada Yojana (PMMSY)-- which was launched with an aim to bring Blue Revolution -- has started benefiting fishermen in the country. Many sub-schemes under the PMMSY are directly and indirectly benefiting the fishermen, an official statement said quoting Rupala as saying.

These schemes are aligned to double fish production, exports and thereby doubling fishermen income, he said. In the coming days, the sector is expected to generate employment for more than 50 lakh people across India, he added. Speaking on the occasion, Marine Products Exports Development Authority (MPEDA) Chairman K S Srinivas said the government is helping revive the sector by taking various timely measures.

It is the prime concern of MPEDA to provide unique solutions to the problems faced by the marine industry bodies, ensuring smooth and proper operation of the sector along with maintaining quality, he said.

Joint Secretary in the Fisheries Ministry Sagar Mehra said that PMSSY, which was launched in May 2020 with a budget of Rs 20,050 crore, is by far the largest investment in the fisheries sector. The strategy along with the concerted and collaborative efforts between the stakeholders and government is required to achieve ambitious targets under the scheme, he said.

### **India: INCOIS guides 9 lakh fishermen on potential sites**

<https://www.thehindu.com/news/cities/Hyderabad/incois-guides-9-lakh-fishermen-on-potential-sites/article37269542.ece>

"Hyderabad-based Indian National Centre for Ocean Information Services (INCOIS), under the Ministry Of Earth Sciences (MoES), which is involved in oceanic observations, research and advisories, is also directly in touch with stakeholders like the fishermen across the coastline.

Close to nine lakh fishermen are on the contact list for getting daily messages on their mobile phones on potential fishing sites and at what depths the catch is available with data based on sea surface temperatures, chlorophyll, sea currents and the likes.

“For more than a decade, we have been able to help the fishermen improve the economics of fishing with advisories giving precise location of fish availability. This not only ensures a better catch but the usage of fuel is also less as they need not sail deep in search, thus reducing the time and overall expenditure,” explained INCOIS director T. Srinivasa Kumar.

A commercially important fish like ‘tuna’ prefers a certain water clarity and certain level of oxygen for their body metabolism. So this helps in tracking their movements on the sea. Similar advisories are being developed for ‘hilsa’ variety too. The fish advisories are also put up on electronic display boards in fishing harbours in the respective local languages and on the websites, he said.

Local measurements

“Fishermen in each region across the coastline have their own unique depth calculations rather than metres. So, we give them information in local flavour measurements of ‘Phadham’ and ‘Barah’ for them to assimilate our advisories,” said Dr. Kumar. With regular ocean state forecasts, alerts on tidal wave heights, swells and so on, cautioning the fishermen, they are also assured of safety when they venture out.

#### Enhanced accuracy

Over the years with improved satellite imagery, telemetry studies and observations from various measuring instruments on sea, the accuracy of the advisories to the fishermen has been enhanced, including potential fishing prospects of species like ‘mackerel’ and ‘sardines’, said senior scientist and group director of Operational Ocean Services & Applied Research (OSAR) T. Balakrishnan Nair.

The country’s coastline is divided into 12 sectors covering all the islands and the mainland with daily advisories referring to 586 specific landmarks/locations on both east and the west coast, he said. INCOIS also studies the Algal Bloom in the north Arabian Sea, Kochi, Gulf of Mannar and Gopalpur and the coral bleaching phenomenon by monitoring temperature, colour and other indicators.

This is to give alerts and advisories as any change can directly affect the fishing activity and impact livelihood. The Coast Guard, Navy, Ports, Industry and voluntary organisations working with the stakeholders are also kept in the loop, added Dr. Nair.

#### **India: INCOIS prepares coastal vulnerability index**

<https://www.thehindu.com/news/national/telangana/incois-prepares-coastal-vulnerability-index/article38396960.ece>

"Indian National Centre for Ocean Information Services (INCOIS) has carried out coastal vulnerability assessment for entire Indian coast at states level to bring out an Atlas comprising 156 maps on 1:1,00,000 scales to prepare a Coastal Vulnerability Index (CVI).

From this CVI, it can be delineated that Gujarat's 124 coastal kilometers is going to get affected or 5.36%, Maharashtra 11 km or 1.22% and then Karnataka & Goa 48 km or 9.54%, Kerala 15 km or 2.39%, Tamil Nadu 65 km or 6.38%, Andhra Pradesh 6 km or 0.55 %, Odisha 37 km or 7.51% West Bengal 49 km or 2.56%, Lakshadweep Islands 1 km or 0.81%, Andaman Islands 24 km or 0.96km and Nicobar Islands 8 km or 0.97%.

While the maps determine the coastal risks due to future sea-level rise based on the physical and geological parameters for the Indian coast, the CVI uses the relative risk that physical changes will occur as sea-level rises are quantified based on parameters like: tidal range; wave height; coastal slope; coastal elevation; shoreline change rate; geomorphology; and historical rate of relative sea-level change, said senior scientist & Group Director T.M Balakrishnan Nair.

In an exclusive interaction, he pointed out that coastal vulnerability assessments can be useful information for coastal disaster management and building resilient coastal communities. A coastal Multi-Hazard Vulnerability Mapping (MHVM) was also carried out using parameters like sea level change rate, shoreline change rate, high-resolution coastal elevation, extreme water level from tide gauges and their return periods, he explained.

“These parameters were synthesized to derive the composite hazard zones that can be inundated along the coastal low-lying areas due to extreme flooding events. This MHVM mapping was carried for the entire mainland of India on a 1:25000 scale. These maps depict the coastal low-lying areas exposed to the coastal inundation,” said Dr. Nair.

INCOIS, which is an autonomous body under Ministry of Earth Sciences (MoES), has been issuing alerts on Potential Fishing Zone, Ocean State Forecast, Tsunami Early Warning, Storm Surge Early Warning, High Wave Alerts, etc., through dedicated ocean modeling, observations, computation facilities and the marine data center.

“Based on our observations, we are also providing technical solutions and advice to the respective State Governments and Union Territories to deal with coastal management,” the senior scientist, added.

#### **India: India-Norway Blue Economy model focuses on post-Covid economy recovery**

<https://economictimes.indiatimes.com/news/economy/foreign-trade/india-norway-blue-economy-model-focuses-on-post-covid-economy-recovery/articleshow/83425222.cms>

"Investing in the Blue Economy now can help countries out of the crisis, and make sure that the global community builds back better and greener. PTIRecently, a new India-Norway Integrated Ocean Management & Research Initiative has also been established, with the hope that it will help plan and improve the management of ocean resources Investing in the Blue Economy can help enable nations to address Covid crisis, and make sure that the global community builds back better and greener. This was the key theme at the fourth India-Norway Task Force on Blue Economy that met on June 9.

The task force was chaired by Norwegian Ambassador to India, Hans Jacob Frydenlund and Ratan Watal, Member Secretary, Economic Advisory Council to the Prime Minister (EAC to PM). “Blue Economy partnership is the cornerstone of the bilateral cooperation between India and Norway. Since the creation of the Task Force in 2019, our cooperation has expanded and deepened”, the Member Secretary, EAC to PM said at the Task Force meet.

The COVID-19 crisis has caused disruptions to ocean industries and coastal tourism globally, but the potential for growth and job creation is substantial. Investing in the Blue Economy now can help countries out of the crisis, and make sure that the global community builds back better and greener. “The Indo-Norwegian Blue Economy partnership is already contributing to this. In the last year, Norwegian companies have entered into new contracts with Indian counterparts, creating jobs and enabling transfer of green technologies,” Frydenlund said on the occasion.

Two key MoUs have also been signed in this regard -- one between the Norwegian university NTNU and DG Shipping, who will cooperate on establishing a Maritime Knowledge Cluster. And one between the Norwegian company Greenstat and the Indian Oil Corporation on setting up a Centre of Excellence on Hydrogen. Recently, a new India-Norway Integrated Ocean Management & Research Initiative has also been established, with the hope that it will help plan and improve the management of ocean resources, enabling an expansion of ocean industries without harming the environment.

“I want to commend the Government of India on its new Draft Policy Framework for India’s Blue Economy. The draft clearly shows how committed India is to combining production and protection in the Ocean, making it a perfect partner for Norway,” according to Frydenlund. At the June 9 meet, results after the third Task Force meeting in 2020 were also highlighted, especially on the inclusion of the private sector in joint initiatives, creating solid ground for public-private partnerships.

The parties agreed to enhance cooperation on green shipping, ocean research, fisheries, energy, marine and plastic pollution, and more. The meeting was represented from both sides with representatives from the Indian Ministries of Earth Sciences, Environment, Forest and Climate Change, Shipping, Tourism, External Affairs, Department of Fisheries, Director-General Shipping, and several institutions and business bodies.

From the Norwegian side, Innovation Norway, Ministry of Trade, Industry and Fisheries, Ministry of Foreign Affairs, Ministry of Climate and Environment and other official bodies, companies, business organisations and research institutions took part.

### **India: Insurance coverage for fisheries, aquaculture units abysmal in India, says FAO report**

<https://www.thehindubusinessline.com/economy/agri-business/insurance-coverage-for-fisheries-aquaculture-units-abysmal-in-india-says-fao-report/article65356310.ece>

"Given the low penetration of insurance products in the fisheries sector, the FAO World Review of Capture Fisheries and Aquaculture 2022 has suggested involvement of public and private insurance service providers to undertake proactive measures to turn the tide on fisheries and aquaculture insurance in India.

With weather playing truant in the fisheries sector, the involvement of insurance service providers should be encouraged for the overall competitiveness and efficiency of service delivery in the sector. The report assumes greater significance when occupational hazards to life and property of fishers and fish farmers are increasingly on the rise with the occurrence of frequent extreme weather events in recent times.

However, there is a general lack of awareness on insurance solutions among fishermen and aquaculture farmers. The insurance coverage for fishing vessels, coastal immovable property and aquaculture units is abysmal in India. Appropriate extension efforts by government agencies /NGO’s/aquaculture societies with due participation from the fishing community could bridge

the gap and facilitate marketing of insurance products at the grass root level.

### Bundling of schemes

Given the strong network of micro-finance institutions and self-help groups in the coastal regions, the report pointed out that bundling of disaster risk insurance packages with existing micro-credit schemes can be a viable option.

Shinoj Parappurath, senior scientist, ICAR-CMFRI, Kochi and the author of the India chapter of the report indicated that prohibitive cost of the policies currently on offer is one of the reasons for the low adoption of fishing vessels and asset insurance in the coastal region. Moreover, there are no options to pay premiums in instalments, or in a way that matches fish landing patterns.

However, innovative solutions whereby the payment of premiums linking with catch revenues or seasonal incomes could alter the way fishermen approach insurance packages. A similar scheme is operated by Matsyafed in Kerala whereby the interest on loans is paid back on a daily basis through deductions made on fishing revenue. Such a system can be emulated to collect insurance premium payments in instalments, the report said.

The FAO World review of capture fisheries and aquaculture 2022 has provided a comprehensive account of the present status of insurance in top 10 capture fisheries and aquaculture producers in the world. The India chapter gives interesting insights into the state of fisheries/aquaculture insurance and it presents a number of strategies and options to protect small-scale fishers from occupational hazards, particularly those arising from climate change-induced extreme weather events.

Mariculture, the future source of marine fish, also requires insurance coverage and to be viable in the long run. New insurance packages covering marine and inland cages, sea farming, brood bank/hatchery units and seaweed farming units should be introduced on a priority basis, the report said.

The World review of capture fisheries and aquaculture insurance 2022 is available at: <https://www.fao.org/3/cb9491en/cb9491en.pdf>

### **India: ISRO-ICG developed tech, Indian satellites prove crucial in saving lives at sea**

<https://www.wionews.com/india-news/isro-icg-developed-tech-indian-satellites-prove-crucial-in-saving-lives-at-sea-395337>

"In an air-sea coordinated operation, the Indian Coast Guard(ICG) rescued a distressed fishing vessel 'RSN-TWO' and its seven crew, on Thursday. The vessel was off Tillanchong Island, nearly 350 Km south of Port Blair. This mission highlighted the significance of a home-grown satellite communication device that helps fishermen in distress, by alerting the concerned authorities. The Maritime Rescue Co-ordination Centre (MRCC) Port Blair received an unregistered DAT (Distress Alert Transmitter) alert around Wednesday noon.

As the DAT was unregistered, its data was unavailable with the ICG, hence the details were sought from the fisheries department. On learning that the said vessel was 'RSN-TWO', which left Port Blair earlier in the week for fishing, ICG tasked ship C-422 from Kamorta, besides ship Vishwast and Dornier aircraft for Search and Rescue. On locating the boat off Tillanchong island and establishing contact, early on Thursday, it was learnt that the boat had machinery failure.

AN ICG team that boarded the distressed vessel provided basic necessities and first aid, following which attempts were made to rectify the defect. Due to the non-availability of specific spares the on-site repair was not possible, also considering the inclement weather conditions, the distressed vessel was towed for passage to Kamorta, by ICGS Vishwast. Jointly developed by the Indian Space Research Organization (ISRO) and Indian Coast Guard, the DAT (Distress Alert Transponder) is a low-cost and effective satellite transmitter built for fishermen.

At a press of a button, this device transmits distress alerts to the Search and Rescue Authorities through the INSAT series of satellites. The Indian Coast Guard has been emphasizing that fishermen must carry the DAT device and also register it for effective, timely search and rescue. The Indian National Satellite (INSAT) system is one of the largest domestic communication satellite systems in the Asia-Pacific region with multiple operational communication satellites placed in Geo-stationary orbit.

Established in 1983 with the commissioning of INSAT-1B, it initiated a major revolution in India's communications sector and sustained the same later. According to ISRO, the INSAT system with more than 200 transponders in the C, Extended C and Ku-bands provides services to telecommunications, television broadcasting, satellite news-gathering, societal applications, weather forecasting, disaster warning and Search and Rescue operations.

### **India: Italian Marines compensation: Centre says yet to get Rs 10 crore from Italian govt**

<https://www.indialegallive.com/top-news-of-the-day/news/italian-marines-compensation-kerala-india-italy/>

"The Central government on Monday informed the Supreme Court that a transfer for compensation amount has been initiated by the Italian Government, but they were yet to receive it, during the hearing of a case, in which two Italian marines had allegedly shot two Indian fishermen off the coast of Kerala in 2012.

The bench of Chief Justice S.A. Bobde, Justices A.S. Bopanna and V. Ramasubramanian, said, "We will keep it for next week, that is what we told you last week, we know how fast you are"! The CJI asked the Centre, "You are supposed to deposit the money, where is the money?" To which, Advocate Rajat Nair, appearing for the Centre, submitted that the transaction has been initiated by the Italian government.

The court had said that the case will be closed, only after hearing the victim's families and once the adequate compensation is paid to them. The Supreme Court had directed the Solicitor General to provide the bank account details of the Indian government within 3 days in which the Italian government will transfer the money. The case pertains to February 15, 2012, when two

Indian fishermen returning from a fishing expedition near Lakshadweep islands onboard fishing vessel St Antony were gunned down by two Italian marines on board oil tanker Enrica Lexie.

The incident occurred around 20 nautical miles off the coast of Kerala. Shortly after the incident, the Indian Coast Guard intercepted Enrica Lexie and detained the two Italian marines— Salvatore Girone and Massimiliano Latorre.

An SLP was filed in the Supreme Court by the Marines, challenging a Judgement of the Kerala High Court, which held that the State had the jurisdiction to try these marines. Earlier on April 9, the apex court had refused to pass any order on the Centre's plea seeking closure of the case.

The court had said that the case will be closed, only after hearing the victim's families and once the adequate compensation is paid to them. The SC had directed the SG to provide the bank account details of the Indian government within three days in which the Italian government will transfer the money.

### **India: Japan partnership: Trade and beyond**

<https://www.cnbctv18.com/views/india-japan-partnership-trade-and-beyond-8957701.htm>

"Asian heavyweights India and Japan are strategic partners with a common interest of promoting peace, security, stability, and prosperity in the world and especially in the Indo-Pacific region. India and Japan share essential values such as political liberalism, the market economy, the rule of law and democracy. Over the years, Japan has been one of the most important economic partners for India's development. It has been extending bilateral loan and grant assistance to India since 1958 and is the largest bilateral donor for India.

Japan's Official Development Assistance (ODA) supports India's efforts for accelerated economic development particularly in priority areas like power, transportation, environmental projects, and projects related to basic human needs. The Delhi Metro is a shining example of successful India- Japan cooperation through the utilisation of Japan's ODA.

More recent illustrations of this cooperation are—the Mumbai-Ahmedabad High-Speed Rail, the Western Dedicated Freight Corridor (DFC), the Delhi-Mumbai Industrial Corridor with twelve industrial townships, the Chennai-Bengaluru Industrial Corridor (CBIC) etc. All these megaprojects on the anvil are poised to transform India in the next decade. Japan's ODA commitment in FY 2018-19 was at the historic highest amount of JPY 537.4 billion.

### **India- Japan trade**

The India-Japan Comprehensive Economic Partnership Agreement (CEPA) signed on February 16, 2011, aimed at eliminating tariffs on 90 percent of Japanese exports to India, such as auto parts and electric appliances, and 97 percent of imports from India, including agricultural and fisheries products, until 2021. The CEPA with Japan is among the most comprehensive trade agreements that India has entered with any country.

However, post the signing of CEPA, even as trade between India and Japan grew from US\$ 13.1 billion in 2010 to 17.6 billion in 2019, India's exports to Japan have remained at the same level in 2019, as they were in 2010. In fact, India's exports which witnessed growth during the period 2011-13, and peaked at US\$ 7.3 billion in 2013, have since then declined to the pre-CEPA levels. India's major exports to Japan comprise petroleum products, followed by organic chemicals, fish and aquatic invertebrates, natural or cultured pearls, precious or semi-precious stones and machinery and mechanical appliances.

Imports, on the other hand, have increased by around 53% from US\$ 8.3 billion in 2010 to US\$ 12.7 billion in 2019. India's top import items from Japan are machinery and mechanical appliances, followed by electronics, iron and steel, plastics, and copper and its articles. Consequently, India has been persistently running a trade deficit with Japan, which has worsened by more than two-fold from US\$ 3.5 billion in 2009 to US\$ 7.9 billion in 2019.

Reflecting the sharp rise in imports from Japan, sectors which present the largest trade deficit for India in 2019 are machinery (deficit of over US\$ 3 billion), electrical and electronic equipment (deficit of around US\$ 1.2 billion), iron and steel, plastics, copper and its products etc.

Thus, even though the total trade between both countries has almost doubled in the last 12 years, the widening trade deficit is a matter of concern for the long-term sustainability of bilateral trade relations. India's export potential It is important to note that, among the major items in Japan's import basket, India has achieved a relatively healthy share (of more than 3 percent) in Japan's global imports of only three product categories viz organic chemicals, natural or cultured pearls, precious or semi-precious stones, and fish and other aquatic invertebrates.

However, in the case of the other leading items in Japan's import basket, India's share is still marginal. India has an untapped export potential of US\$ 3.2 billion with Japan. There is significant potential for India's exports in categories such as mineral fuels and oils, electrical machinery and equipment, machinery and mechanical appliances, optical, photographic equipment, pharmaceutical products, articles of apparel and clothing, etc, according to an India Exim Bank research.

#### Reviewing the CEPA

Taking note of the lopsided growth in trade, India has recently called for reviewing CEPAs with both South Korea and Japan, in order to check the increasing trade deficit with these countries. While India has already completed eight rounds of negotiations with South Korea for reviewing the CEPA, discussions with Japan for a revision are going on. Indian exports to Japan are presently affected by a number of issues, which include both tariff, and Non-tariff Barriers like Technical Barriers to Trade (TBT) and Sanitary and Phytosanitary Measures (SPS).

An India Exim Bank study titled "Study on Non-Tariff Measures" points out that in Japan, the average tariff on products of export interest to India are 7 percent, which is higher than the simple average (4 percent) of the tariff of the country as a whole. This is despite the fact that India has a CEPA with Japan. Tariffs on products of Indian interest for exports to Japan like dairy products, cereals and preparations, rice, leather and footwear are very high. Thus, in the

subsequent CEPA review negotiations, India can seek for tariffs reduction in these product categories. Other higher tariffs are imposed on clothing and some food products, and hence may also be reconsidered in the negotiations. In order to achieve a target of US\$ 5 trillion economy, India should aim to increase its exports to US\$ 1 trillion. In this direction, it is imperative for India to utilise its trade agreements to its maximum advantage.

### Beyond bilateral trade

However, the potential for India and Japan's relation extends beyond the sphere of bilateral trade and investments. India and Japan have aimed at coordinating India's "Act East" policy and Japan's vision of a free and open Indo-Pacific. Thus, post the 2016 India-Japan summit, the leaders of the two countries had expressed their intention to "work jointly and cooperatively with the international community to promote the development of industrial corridors and industrial network in Asia and Africa".

This had given birth to the idea of the Asia-Africa Growth Corridor (AAGC), which is a megaregional program aimed at improving ties between Asia and Africa, bringing economic prosperity and encouraging sustainable development by building institutional and industrial corridors and networks for capacity enhancement, encouraging free and seamless movement of people, trade & investment, energy and enhancing partnership for infrastructure.

India has put in place important policy measures as also institutional frameworks to create an enabling trade and business environment with Asia and Africa. But since India itself is a developing country, it faces the challenges of resource constraint for developing large-scale inter-continental infrastructure. On the other hand, Japan's complementary role in Africa is through its strong Official Development Assistance (ODA) programme in the continent.

A 2017 Japan External Trade Organization (JETRO) survey had shown that Japanese companies operating in India have a significant interest in the African market, which they see as the most significant future destination. India could be a good springboard for Japanese companies to enter the African market because it is geographically closer to Africa, enjoys strong historic and cultural ties with the continent with its business and diaspora networks, and shares similar market characteristics and product needs.

Therefore, as a common partner of Asian and African countries, India is positioned to play a crucial role in the AAGC. In doing this, India stands to improve its own integration into the global value chains of production. Thus, both India and Japan stand to benefit from this collaboration.

India could enhance its exports of manufactured goods, while Japanese companies based in India could take advantage of Indian business networks in Africa to enter African markets. Japanese companies could then enjoy large economies of scale by expanding their business in the continent. India and Japan have an important role to play, regionally and globally, in the coming decade. Stronger trade integration between the countries would serve to enhance this partnership further in the 'New Asian Era'.

## **India: Key concerns at WTO's 11th Ministerial conference**

"Aggregate measurement of support (AMS) Agriculture is a key issue for India and the majority of its population. But developed country subsidies, in particular the AMS (Aggregate Measurement of Support) are hurting farmers in India. We support the proposal by India on eliminating the AMS and strongly urge you to push on this, while making it very clear that the development subsidies we get cannot be touched as these represent an important tool to support farmers in developing countries.

More than 100 developing countries support us in this endeavour. Billions of small farmers stand united to end unjust and unethical subsidies being given by developed world. Therefore, Sir, you are requested to set agenda in order to put pressure on developed countries to eliminate AMS as it brings large disparities between developed and developing countries. Rich countries get more subsidy entitlements because of AMS and can also concentrate subsidies on a few products which get large subsidies such as rice, wheat, dairy products etc.

We demand elimination of AMS while defending the development box of subsidies/input subsidies (as suggested by Australia, New Zealand etc). That cannot be brought under subsidy reduction talks as it is S&DT. Now 100 countries are supporting India's position on AMS (India China proposal).

### **Permanent solution of public stockholding**

We demand permanent solution on public stockholding, which has to be allowed without limits. We do not accept very difficult compliance conditions, including those set out under the Peace Clause which makes it almost impossible to use. This decision needs to be taken by December Ministerial as has been agreed. Therefore, you are requested to facilitate a permanent solution by Buenos Aires ministerial as the Peace clause is difficult to use. It has to be specifically triggered. US still sued China even with Peace Clause.

The permanent solution has to be better than the peace clause. The demand for exemption of these subsidies (i.e. Put them under Green Box) is correct and we stand by that stand (the G-33 proposal). In particular cannot have the onerous notification requirements which make it impossible to use. We cannot have more onerous notification requirements than the developed countries have for Green Box. We denounce the effort by EU, Brazil etc to divide the developing countries and LDCs.

### **Special safeguard mechanism**

Every country has the right to adopt special measure in order to curb sudden surge in supply of agricultural produce, to safeguard the interest of the farmers, by increasing tariff. An agreement on these SSMs is pending for many years, which needs to be pushed to protect our farmers against surge in import of agricultural produce. Therefore, we demand earliest conclusion for SSMs, which should not be linked with further market access (tariff cuts). The market is already distorted by developed country subsidies and standard barriers. The developed countries already

enjoy the Special Agricultural Safeguard (SSG) which is very simple to use. Then, why not SSM for developing countries?

### Fisheries

There is a proposal to push rules on fisheries subsidies at the December Ministerial. While we support sustainable fishing and think big industrial fishing needs to be discouraged, we are extremely worried that the current proposals being discussed will actually allow developed countries to continue with their subsidies while banning subsidies that are for small scale informal fishing in developing countries. The special and differential treatment which our fisher folk urgently needs is not at all visible or actionable in the current proposals.

Our organisation has had close connections with small scale fishers in India and has been fighting for their cause against mechanised deep sea fishing and therefore, it would be detrimental to the interests of traditional fisherman. If we agree to current proposals, as they can affect their lives and livelihoods. It is better to reject bad outcomes than to try to improve them without doing thorough research on the implications. Such discussions can be taken up later.

### Investment facilitation

Proposals on investment facilitation that are being pushed in the negotiations, is a matter of great concern. We know very well from the history of the WTO that what starts off as simple 'facilitation' can end up as crucial commitments on investor protection and market access. India is trying to revise its approach on investment protection as it faces millions of rupee damages in investment lawsuits.

To take up an additional commitment in a multilateral forum on investment may pose a major problem at this point in time. We support our government's position of totally rejecting any negotiations on investment, 'facilitation' or otherwise as it has done in Geneva this year.

### E-commerce

E-commerce is a complex and unknown area where the entire future of the country is potentially impacted. It can restrict future economic policy making and curb the government's ability to regulate giant e-companies. It is not in best interest of our country to give away a critical raw material like data for free to large corporations in the west to profit from affecting future manufacturing policy space; and allow the WTO to decide on rules shaping key policies on health, agriculture, finance.

Losing all tariff revenue on e-commerce as well as the regulatory control it exerts over imports is also unthinkable for a country like India. When we do not know how and what future e-technology will develop and what regulation it will need, the question of freeing up regulation in this area should not even arise at this juncture. Therefore, Do not allow opening of mandate at WTO. Do not allow permanent waiver of customs duties on e-trading as e-trading is growing fast, more and more digitised goods, and even physical manufactured goods can come in as China wants duty waiver even on manufactured goods ordered online for Alibaba.

In the future even software can come in and threaten domestic manufacturing through 3-D printing. E-commerce is not just about trading. It has more impact on manufacturing. Data is the new raw material for the 4th industrial revolution. It is the new oil. E-commerce proposals ask for free flow of data. Entire e-economy is controlled by huge monopolies; a few giant corporations control the data, the technology. They want uninhibited access to data, and no regulation.

The argument that it will benefit SMEs is limited. SMEs will benefit for a short while but will be at the mercy of the corporations and will have to accept prices and terms set by these giant corporations who own the platforms. We want to enjoy access to these services but with regulation and ensure these services continue to remain beneficial for us. So most important to remember, we do not know how the e-economy and the technology there will evolve so cannot give up regulatory space.

E-commerce proposals challenge regulatory space of at least 13 ministries of Government of India, including finance, labour, trade, industry, agriculture, health and so on. We support Indian representative for taking a right approach in WTO about not allowing e-commerce in the agenda in the Ministerial Council 11 WTO.

We know any commitment on e-commerce will be of great impact for our retailers, especially small retailers in India many of whom are already adversely affected by mostly MNCs run e-trading portals. Inclusion of e-commerce in WTO negotiation will severely impact the retailers as well as customs duty revenues and therefore government spending.

Concerns have been expressed at various levels with regard to the impact of e-commerce rules on policy areas, not only on commerce but on India's manufacturing policy which will face competition from duty free entry of digitized, digitisable, and even physical manufacturing goods. China is pushing interests of 'Alibaba', which seeks duty free access for its manufactured goods into our markets using the e-commerce route.

Apart from China, which has its own interest, e-commerce rules are being pushed by the American giant e-corporations who are advancing their demands through Japan. These rules seek to free up all regulation on their activities through provisions such as free data flows, no disclosure of source code and so on. Why should India give up its sovereignty and national policy space to these corporations, which seek to maximize their profits?

India also needs to retain control over its public data and private data of its citizens and not hand it over to corporations for excessive profit making. In addition, the full implications of e-commerce rules in trade agreements are as yet not clearly known or understood. The technology in this field is moving very fast which makes it difficult to estimate the full impact of such commitments especially for a developing country like India at this point. It is not the correct time to make such binding commitments in trade agreements.

**India: Kisan Credit Card in fisheries sector to help fishermen meet working capital requirement: Centre**

<https://www.zeebiz.com/personal-finance/news-kisan-credit-card-in-fisheries-sector-to-help-fishermen-meet-working-capital-requirement-centre-174450>

"The government on Friday said the facility of Kisan Credit Card (KCC) in the fisheries sector will help fishermen and farmers in meeting their working capital requirement. The department of fisheries under the Ministry of Fisheries, Animal Husbandry and Dairying organised a webinar on 'Nation-Wide Campaign on Kisan Credit Card (KCC) for Fisheries Sector' on Thursday, an official statement said. The event was presided over by Jatindra Nath Swain, Secretary, Department of Fisheries (DoF), and attended by more than 400 participants.

In his inaugural address, Swain highlighted the background and diversity of the fisheries sector. He said the facility of KCC in the fisheries sector is an attempt to help the fishers and farmers to meet their working capital needs. It is aimed at providing adequate and timely credit support to all the farmers. Swain said the campaign is currently being organised from November 15 to February 15, 2022.

He requested states/UTs to regularly monitor the progress of saturation of eligible fishers and fish farmers under KCC and take follow up action with the concerned banks for removing shortcomings and ensuring early sanction of KCCs. Sagar Mehra, Joint Secretary (Inland Fisheries), said the department has been making efforts to encourage, and expand aquaculture and fisheries in both inland and marine sectors in India.

The extension of the KCC facility aims to expand the access to institutional credit facilities to achieve socio-economic transformation of the lives of fish farmers and fishermen, the statement said.

### **India: Kisan Credit Card: KCC to be given to all fish farmers**

<https://krishijagran.com/agriculture-world/kisan-credit-card-kcc-to-be-given-to-all-fish-farmers-in-india/>

"The government is looking for ways not just to help farmers but also fishermen in the country. Hence it has extended the benefit of the Kisan Credit Card (KCC) to the fish farmers in India. Now like the Annadatta's, fish farmers will be able to increase their business by taking a loan through KCC. In order to get KCC, fishermen can go to their nearest bank and apply for it.

Only about 58 percent of Farmers taking benefit of KCC: 1) Let me tell you that even after so many years of the launch of the Kisan Credit Card scheme that aims to provide loans at low rates, all the farmers of the country have not yet registered. 2) As per data, only about 58 percent of farmers have been taking advantage of Kisan credit cards. Whereas 42 percent of farmers are out of this scheme and still take loans from moneylenders at huge interest rates. 3) Now the government wants livestock/dairy farmers and fish farmers to avail themselves of the benefit of the Kisan Credit Card.

With KCC, fish farmers will get loans at a cheap rate of interest. The interest rate for loans up to Rs 3 lakh taken on KCC is, by the way, 9 percent. But the government gives a subsidy of 2% in this. In this way, it comes to 7 percent. But on timely return, there is a further discount of 3%. In this way, its rate remains only 4 percent for honest farmers. These fish farmers can take KCC: 1) Kisan Credit Card Inland fisheries and aquaculture fishermen 2) Fish Farmers (individual and group / partner / crop / tenant farmers) 3) Self-Help Groups, Joint Liability Groups, and Women Groups.

Eligibility for fish farmers to apply for KCC: 1) Any person associated with farming, Pisciculture, and animal husbandry, even if he cultivates on someone else's land, can take advantage of this. 2) To apply for Kisan Credit Card, the age of the beneficiary should be between 18-75 years. 3) If the age of the farmer is more than 60 years then a co-applicant will also be required. 4) If the age of the farmer is less than 60, the bank employee will check the eligibility of that farmer whether he is eligible for it or not. 5) Fish farming beneficiaries should have the necessary licenses for fish farming and fishing-related activities like ponds, tanks, open water bodies, raceways, hatcheries, rearing units.

6) He/ She must be the owner of any one of the fisheries-related activities as any other state-specific fisheries and allied activities. How to get Kisan Credit Card: 1) You have to go to the website of the bank from which you want to make a credit card and go to the Kisan Credit Card section of that bank.

Download the application form and take a printout. Fill this form carefully. 2) Submit the farmer application and required documents to the nearest bank branch. The loan officer will share the required information with the applicant. After this, the card will be dispatched as soon as the loan amount (limit) is approved.

Government grants for fish farming: The government is also providing grants to farmers to open fish farming businesses. Under the Matsya Sampada Yojana, there is a provision to give different grants according to the category. Under the scheme, a subsidy of up to 30 percent of the cost amount and up to 25 percent for other categories will be given to women belonging to Scheduled Castes, Scheduled Tribes, and all categories. A bank loan can be given to the beneficiary up to 60 percent of the cost amount and the remaining 10 to 15 percent amount has to be invested by the beneficiary.

### **India: KPMG India calls for PPP model to spur food processing**

<http://www.fnbnews.com/Top-News/kpmg-india-calls-for-ppp-model-to-spur-food-processing-in-india-63921>

"KPMG India sees that Government partnership with private players through appropriate PPP models may be considered to ensure a faster scale up of quality infrastructure in the food processing sector. The pandemic has given rise to a new normal with sustainable food chains, growing preference for healthy food and localised food supply with increased trade

barriers. Hence a focussed approach with collaboration from diverse stakeholders is required for catalytic growth of the industry.

An inter-ministerial committee led by MoFPI and consisting of various ministries may be constituted to bring various stakeholders together in a co-ordinated manner, noted KPMG in its report titled, 'Indian food processing industry – growth opportunities post the Covid-19 pandemic'. In the post Covid-19 era, there is likely to be a surge in non – tariff measures including stringent Sanitary and Phytosanitary Measures (SPSs) and Technical Barriers to Trade (TBT) by major economies to ensure food safety against transmitted chemicals and diseases.

Significant shift from non-sustainable food systems to environmentally sustainable food systems across the entire value chain for food processing will be seen. Demand for foods perceived to be healthy such as organic food and related products is likely to increase significantly. Adoption of traceability in food products is likely to witness a steep rise.

Localisation of food supply is likely to gain prominence as an emerging and increasingly credible concept. Recognising the essence of food security and shortages, adoption of Information and Communication Technologies (ICTs) such as Artificial Intelligence (AI) and Big Data to improve on-farm handling, post-harvest, storage and transportation processes is likely to gain traction in future.

Resilience needs to be strengthened from production of traditional crops to storage, transportation, processing and preparation. Food processing industry is one of the mainstays of the global economy with a value addition of \$ 1.7 trillion. The Indian processed food market is expected to grow to US\$ 470 billion by 2025 from \$ 263 billion last year. The post Covid-19 world looks promising for India's food processing industry and provides the country with an opportunity to calibrate its strategy and gears up to capture new markets.

The industry is expected to move towards an organised structure. PM FME Scheme is providing impetus to this by formalising the unorganised micro players in food processing industry. There is significant potential for enhancing exports from India to the top 10 food importing countries of the world where India has a limited presence.

Major segments of potential include fisheries, meat and marine and dairy. Government of India can support the exporters by negotiating Free Trade Agreements (FTAs), lowering Non-tariff barriers (NTBs) and expeditious implementation of Remission of Duties and Taxes on Exported Products (RoDTEP) scheme.

Production Linked Scheme (PLI) Scheme is likely to encourage players in food processing industry to enhance their processing capacities and meet the demand for rising challenges. To enhance competitiveness and meet the hygiene needs at a scale, the players specially MSMEs will require high quality testing and certification infrastructure.

A coordinated approach is the need of hour taking into account opportunities in regional preference in domestic market, exports and quality management systems. National Single Window Clearance System and Project Development Cell are a step in the direction for a

coordinated approach. Inter-Ministerial Body led by MoFPI and with participation from APEDA, MPEDA, FSSAI supported by a Food Processing Council can prove to be a catalyst for industry development at segment/product level, tapping value added exports and addressing issues and challenges.

### **India: Launches real-time fishing vessel tracking and seafarers' help system**

<https://www.thehindubusinessline.com/economy/logistics/india-launches-real-time-vessel-tracking-and-seafarers-help-system/article33970821.ece#>

"India launched a real-time vessel tracking system that can help seafarers and fishermen in the times of need. Apart from tracking Indian vessels globally, it can also track foreign vessels within 1,000-km of India's coastline. To be operated by DG Shipping, the system is termed Sagar-Manthan: Mercantile Marine Domain Awareness Centre (MMDAC) and can organise help in case of emergency. India is sharing this system with Sri Lanka and the Maldives, said Anil Devli, CEO, Indian National Shipowners Association.

The MMDAC facility also has elements of security, for which DG Shipping collaborates with the Indian Navy, said Amitabh Kumar, DG-Shipping. This was launched by the Prime Minister Narendra Modi at the inauguration of Maritime India Summit. "Mega ports with world-class infrastructure are being developed at Vadhavan, Paradip and Deendayal Port in Kandla. Domestic waterways are found to be a cost effective and environment friendly way of transporting freight. We aim to operationalise 23 waterways by 2030," said Modi.

"The Eastern Waterways Connectivity Transport Grid for regional connectivity with Bangladesh, Nepal, Bhutan and Myanmar will be strengthened for effective regional trade and cooperation," said Prime Minister Modi. Addressing another session, Shipping Minister Mansukhlal Mandaviya said that India is looking to develop water-based connectivity with Nepal, Bhutan and Myanmar, on the lines of what it has done with Bangladesh.

### **RO-RO projects**

To boost ease of living, Ro-Ro (Roll-on/Roll-o), and passenger ferry projects and 16 water-dromes to enable sea-plane operations are being developed. Steps are also being taken to introduce urban water transport systems in key States and cities such as Kochi, Mumbai, Gujarat and Goa. To ensure that work relating to the maritime sector does not happen in silos, PM said that the Ministry of Shipping's ambit was widened and it will strive for excellence in maritime shipping and navigation, education and training for the mercantile marine, ship-building and ship-repair industry, ship-breaking, fishing vessels industry and floating craft industry.

The Ministry of Port Shipping and Waterways has created a list of 400 investable projects, said the PM adding that these projects have an investment potential of Rs.2.25-lakh crore. Anne H Stevensen, DG and CEO, Danish Shipping, a trade body of Denmark, wondered how seafarers could be prioritised for Covid-19 vaccination so that they are safe. The biggest challenge as Covid-19 hit was not falling cargo volumes or low trade but the inability to take care of key assets — sea-farers, she added.

## India: Macroplastics and microplastics in the Ganges

<https://india.mongabay.com/2021/10/tracking-rivers-the-highways-of-plastic-waste/>

"In an effort to identify plastic accumulation and leakage hotspots along the Ganges river, a recent project in three north Indian cities found that roughly 10–25% of all the plastic waste generated was littered and was not routed into recycling or appropriate waste disposal channels. This litter, which is either generated in or accumulates in the different cities' hotspots is a major source of plastic leaking into the riverine system in the area, especially during the rainy season. Much of the litter was multilayer plastic packaging, disposable bottles and cutlery, nylon sacks, and polythene bags.

The CounterMEASURE project by the United Nations Environment Programme (UNEP) with funding from Japan, launched in 2020 to track and survey the leakage and movement of plastic waste in Asia and the Pacific, particularly in Ganges and Mekong rivers. In India, the project has been deployed in Haridwar, Agra, and Prayagraj (also known as Allahabad) along the Ganges to identify plastic accumulation and leakage hotspots – places within and around the cities where a higher than normal amount of plastic piles up and eventually enters the river.

In each city, physical surveys of geographical areas were combined with data from GIS (Geographical Information System) mapping to chart out land and drainage topologies and human land-use patterns, outlines a report published by the National Productivity Council (NPC) in partnership with the United Nations Environment Programme (UNEP). Surveys and clean-up drives then provided information on plastic litter, which was combined with the physical survey data to gain an understanding of the plastic accumulation and leakage hotspots within each city.

The clean-up drives to assess plastic litter were held in select hotspots. "Each clean-up session at a hotspot required at least 40–50 volunteers and safai karamcharis from the local municipality to work for an entire day to collect, segregate, and pack the plastic waste for further analysis at our laboratories," said Amit Jain, Technical and Plastic Pollution Consultant at UNEP India for the project CounterMEASURE at the NPC.

The clean-up drives were conducted in a scientific manner with clearly marked grids and turned out to be good learning opportunities for those involved, said an NPC team member. "At one of our clean-up drives in Agra near the Yamuna river, we needed 40–50 gunny bags to hold all the waste collected," she added. Haridwar, the second-largest city in the northern state of Uttarakhand generates close to 11 tonnes of plastic waste as untreated waste and litter on a regular day.

The city, regarded as a holy place in the Hindu religion, may generate more than twice this amount of plastic waste during festivals, found the CounterMEASURE project. Much of this plastic waste is either directly dumped at the Ganges ghats (embankments on the banks of the Ganges where pilgrims bathe and offer prayers) or is illegally dumped at vacant sites. The project identified 17 leakage hotspots in Haridwar including areas such as vacant lots, slums/areas with open drains, and sluice valves at barrages. In the neighbouring state of Uttar

Pradesh, in the city of Agra, an estimated 10–30 tonnes of plastic waste from 9 hotspots make their way into the Yamuna river, which is a major tributary of the Ganges.

Much of this leakage seems to occur from riverside slums where garbage collection is poor, and plastic waste enters the river through open drains. A significant amount of the plastic in the river also consists of thin plastic sheets (used in sweet shops) or comes from the industrial sector as trimmings of synthetic leather and synthetic rubber from the footwear industry. Meanwhile in Prayagraj, about 500 kilometres from Agra, roughly eight tonnes of plastic litter per day are estimated to leak into land and riverine ecosystems.

A majority of this is household plastic waste often dumped in open areas, many of which are in flood zones. The leakage scenario in Prayagraj appears to be the most diffuse of all three cities with almost 100 hotspots identified across the city limits.

### World's water bodies turning into plastic soup

Plastics are now found in almost every ocean, sea, river, wetland and lake on the earth. Even remote areas like the alpine lake Sassolo in Switzerland, which is hundreds of kilometres away from any human habitation, have been contaminated by plastics. The first ever report of plastic in the oceans has been traced to 1965 when an old-fashioned metal box used to monitor plankton snagged a plastic bag off the coast of Ireland. However, the issue of marine plastic litter truly came into the spotlight with the discovery of the Great Pacific Garbage Patch in 1997. This patch stretches across 1.6 million square kilometres, and contains plastic not only on its surface, but all through the water column and on the ocean floor.

Research has shown that rivers are like highways that transport 0.4–4 million metric tonnes of plastic from human inhabited land into the oceans. A recent study, published in April this year, states that roughly 1000 rivers account for 80% of all the riverine plastic waste that flows into marine environments. While previous research from 2018 identified ten of the largest rivers in the world as the top plastic waste carriers — including the Indus, Brahmaputra, and Ganges from India — this new study reports a more complicated picture. It finds that smaller rivers that pass through heavily populated areas can often carry more plastic than larger rivers.

As of now, much of the data on plastic waste in water bodies is from marine environments as research has mostly been focused on plastic pollution in the oceans. Research on fresh water bodies has lagged behind; consequently, little is known about how plastic leaks into and is transported by riverine systems. In 2018–2019, one of the first expeditions to assess the full extent of plastic waste carried by the Ganges was undertaken by an all-women crew of scientists and engineers in India and Bangladesh.

The Sea to source: Ganges River expedition, backed by the National Geographic Society, was at that time the world's first ground-truthing effort to verify the quantum of plastic load that a freshwater body carries to the sea and substantiate theory as well as models proposed in research. Macroplastics and microplastics in the Ganges In addition to the plastic litter, another source of plastic pollution in the Ganges is ghost fishing gear — abandoned, lost, or discarded nets and other plastic equipment used by the fishing industry.

A 2020 study on riverine plastic pollution from fisheries, which included sampling sites along the length of the Ganges from the Bangladesh coast to the Himalayas in India, found higher levels of waste fishing gear near the sea. This is probably due to higher levels of fishing activity and downstream accumulation of the fishing gear in these areas, indicates the study. It is widely known that the nets, ropes, string, floats and line, which comprise the ghost fishing gear can entangle and kill freshwater animals such as Gangetic dolphins, turtles, and smooth-coated otters.

The leakage hotspot analyses and work on ghost fishing gear, however, only expose the tip of the plastic waste iceberg in the Ganges as they deal solely with macroplastics – plastic pieces that are larger than 5 mm in size and usually clearly visible to the naked eye. Macroplastics entangle, choke, and kill millions of aquatic animals every year; macroplastics floating on ocean surfaces may also affect surface temperatures and optical properties of water columns and through them, cause unanticipated climate change effects. Besides these effects, macroplastics cause further issues by fragmenting into smaller pieces known as microplastics.

Microplastic particles are smaller than 5 mm in size and are either generated from macroplastic disintegration or manufactured as microbeads (less than 1 mm in size) that are used in biomedical devices and personal care products like face washes, scrubs, and tooth pastes. These tiny pieces of plastic, however, have big impacts. Microplastics are often hotbeds of antibiotic resistance as they support the formation of layers of adherent microorganisms. They may also be vectors of heavy metal contamination in ground and surface water systems.

In addition, microplastics are ingested by a wide variety of aquatic life forms including plankton, fish, and molluscs. These particles have infiltrated the entire marine food web, and eventually also end up in humans. While microplastics are known to harm aquatic life, their effects on humans are still being studied. A study in April this year, used water samples from 10 sites along a 2575 km stretch of the Ganges to estimate microplastic contamination in the river. The results indicate that Ganges surface waters contain 0.026–0.051 microplastic particles per litre (or 26–51 particles per cubic metre); roughly 90% of these were plastic fibres, while the rest were plastic fragments.

Based on the water flow rates at different sites, the study estimates that combined with the flow from the Brahmaputra and Meghna rivers, the Ganges probably releases 1–3 billion microplastic particles into the Bay of Bengal. Another study from 2019, by ICAR-Central Inland Fisheries Research Institute, reports that 100–400 microplastic particles per kg of river sediment were present in samples collected across 7 locations in the lower and estuarine reaches of the Ganges; a majority of the microplastics were composed of polythene terephthalate (used to make PET bottles) and polyethylene.

Similar studies on the Indus and Brahmaputra rivers as well as the Alaknanda (a tributary of the Ganges) indicate that hundreds to thousands of microplastic particles are present in river sediments and water. Different systems, similar results; but are they comparable? Besides the Ganges and its tributaries, several other freshwater systems in India have been investigated for the presence of plastic pollution. Clean-up drives on the Karamana river in Kerala have shown

that macroplastics make up 80% of the trash found in the river and along its banks; most of this comes from household waste and litter.

Another study on the Netravathi river—which originates in Kudremukh in Karnataka and flows through the major pilgrimage centres of Dharmasthala and Subrahmanya to empty into the Arabian sea—concludes that the river is contaminated with microplastics from its source to its sink. On an average, hundreds of microplastic particles are found in every cubic meter of water and kilo of sediment from the river. Much like what was found in the Ganges and its tributaries, most of these microplastics are fibres released from garment washing or bits of polyethylene and PET.

A study on the Sabarmati river found hundreds of microplastic particles per kilo of river sediment. Investigations on the Adayar and Kosasthalaiyar rivers in Chennai indicate that they may be responsible for discharging 11.6 trillion microplastic particles into the Bay of Bengal. The same study also indicates that remote mountain rivers with low anthropogenic influences (the Muthirappuzhayar River that flows along the Southern Western Ghats) may contain microplastic particle levels as high as 0.2 particles per litre (or 200 particles per m<sup>3</sup>). Similar investigations in the Vembanad lake in Kerala as well as the Red Hills lake and Veeranam lake in Tamil Nadu have found microplastic particles in both water and sediment samples.

While the presence of microplastics in India's fresh water systems is alarming, the levels of microplastics in most of these systems are fairly low, especially when compared to those of the Pearl river in China (which contains 10,000–20,000 microplastic particles per m<sup>3</sup> of water). However, the values of microplastic particles from these different systems may not be comparable, warns an NPC team member from the CounterMEASURE project. “As of now, there is need for commonly adopted standardised methods for all the groups working on microplastics across the world”, she says.

Sampling methods and analysis systems vary widely in most of the published studies on microplastic abundance in water bodies. Many studies only look at microplastics in surface water or in sediments, but rarely in the entire column from surface water to sediment. Some studies use microscopes to detect microplastic particles, whereas others use FTIR (Fourier Transform Infrared Spectroscopy), a technique which can detect smaller microplastic particles than microscopes.

“We are finding microplastics in our seas, our rivers and lakes, ground water, and even drinking water sources. But there's no harmony between researchers' efforts when it comes to work on microplastics”, says the NPC team member. “There is scope for connects to be made between scientists, and a need for mutual sharing of knowledge if we are to tackle this huge problem of microplastics contaminating the natural world.”

**India: Marine exports from India risk damage as China imposes non-tariff barriers**

[https://www.business-standard.com/article/economy-policy/marine-exports-from-india-risk-damage-as-china-imposes-non-tariff-barriers-121102500628\\_1.html](https://www.business-standard.com/article/economy-policy/marine-exports-from-india-risk-damage-as-china-imposes-non-tariff-barriers-121102500628_1.html)

"Outbound shipments of marine products from the country are facing non-tariff barriers in China, causing concerns for Indian exporters, people aware of the matter said. At a time when exporters are battling twin challenges of container shortage and high freight costs, Covid-19 testing on the imported seafood consignments at the Customs and local authority-level in China has exacerbated the uncertainty over the last two months.

Containers are being held up at Chinese ports that has resulted in exporters incurring heavy demurrage charges. In addition, Chinese importers not making payments towards cleared consignments is also a major issue, they said. "China has introduced an examination system, which is not there anywhere in the world. Besides, time to test the products has also increased substantially, resulting in delay in clearance of consignments.

This has also resulted in damage to the products," a source said. While Chinese authorities have expressed concern after detecting 'dead nucleic acid remnants' on the outer packing material of seafood products, Indian exporters and government officials said that the seafood industry is strictly following all Covid-related protocols. They added that no other country has pointed out such concerns with respect to imports of marine products.

"Detection of nucleic acid in material does not mean that it can cause any illness as it is not the whole virus. Scientific evidence clearly states that nucleic material of Covid-19 virus, even if present, cannot cause any disease to human beings. Besides, test reports have not been provided by the authorities," another official said. Indian officials have been asking Chinese customs authorities to stop testing the imported seafood consignment for Covid-19 nucleic material.

China is one of the key markets for India as far as marine exports are concerned. India exports a fifth of its marine products to China. It is also the single market for items such as ribbon fish, croaker and other low-value fish. Blocking exports of such items is hurting the fishing community on the west coast of India. India exported shrimps worth \$4.42 billion in the previous fiscal year.

During April-August, marine products worth \$503 billion were exported to the neighbouring country. It is learnt that apart from India, the United States, Canada and Australia have also raised the matter at the World Trade Organization (WTO). They have resisted conditions imposed by China on the detection of Covid-19 in cold chain foods.

### **India: Marine exports register growth of 35 per cent during April-December 2021**

<https://www.aninews.in/news/national/general-news/marine-exports-register-growth-of-35-per-cent-during-april-december-202120220130171125/>

"The export of marine products registered a growth of 35 per cent to USD 6.1 billion during April-December 2021 (provisional) as compared to USD 4.5 billion during the same time period in the year 2020. As compared to April-December 2019 (USD 5.5 Billion) and April-December 2014 (USD 4.4 Billion), exports of Marine Products registered a growth of 12 per cent and 38 per cent respectively. As per a press release from the Ministry of Commerce and Industry, in the month of December 2021, exports of marine products touched USD 720.51 Million, registering a

growth of 28.01 per cent over USD 562.85 million logged in December 2020. The overall exports of marine products in the last Financial Year (March, 2020-April, 2021) was USD 5.96 Billion.

With USD 6.11 billion scaled during the first three-quarters of FY 2021-22, the sector is very likely to exceed the all-time high of USD 7.02 billion exports achieved in FY 2017-18, despite the impact of the COVID-19 pandemic since January 2020, adds the release. The top 5 export destinations in April-November 2021 (latest available, share per cent in bracket) are USA (44.5 per cent), China (15.3 per cent), Japan (6.2 per cent), Vietnam (4 per cent) & Thailand (3 per cent).

Frozen shrimps constitute the major share in India's marine products exports items with 74 per cent share in value terms (USD); Frozen Fish (7 per cent), Others (6 per cent) and Frozen Squid (5 per cent) constitute the other major items in the Marine Products exports basket in FY 2020-21. Other categories included primarily Surimi and Surimi analogue (imitation) products, added the release.

Several exports promotion schemes for Fisheries have been implemented by the Marine Products Export Development Authority (MPEDA), a statutory body set up in 1972 under the Ministry of Commerce & Industry for the promotion of the export of marine products from India. 'Prime Minister Narendra Modi launched the Pradhan Mantri Matsya Sampada Yojana (PMMSY) in May 2020 with an array of 100 diverse activities.

With a budget of Rs. 20,050 crore, it is by far the largest investment to bring about Blue Revolution through sustainable and responsible development of the fisheries sector in India. PMMSY, being implemented over a period of 5 years from FY 2020-21 to FY 2024-25 in all States/Union Territories, has set a target of Rs. 1,00,000 crore fisheries export, additional 70 lakh tonnes fish production, and generation of 55 lakh employment in the years to come.

### **India: Maritime concerns with the 'big fish'**

<https://www.dailypioneer.com/2021/columnists/maritime-concerns-with-the---big-fish---.html>

"China happens to be the largest fishing nation producing approximately one-fifth of the global catch. Apart from freshwater fish, a vital part of the Chinese exports also come from the oceanic fish found in the deep sea. Interestingly, as per available reports, no fish are left in the South China Seadue to overconsumption. On the other hand, India occupies the second largest position (6.3 per cent) in producing fish that sustain 14,500,000 fishers.

China does eye these fish not only for its domestic consumption but also for exporting them to support its fisheries sector. Beijing's illegal, unreported and unregulated (IUU) fishing in other countries' Exclusive Economic Zone (EEZ) has so far been overlooked. According to the 2020 FAO report, ""The State of World Fisheries and Aquaculture"", in 2018, China reported about 2.26 million tonnes from its ""distant-water fishery"" but provided details on species and fishing area only for 40 % of its ""distant water catch""..

Thus, it has not divulged 60 per cent of its catch from the "distant waters" data. A significant part of this 60 per cent probably comes from its illegal fishing in the Indo-Pacific region, Eastern Indian Ocean and the Arabian Sea in particular and is at the economic cost of other nations.'The IUU Fishing Index', a civil society organisation headquartered in Geneva, ranked China first in its 2019 index.

China heavily subsidises to the extent of 94 per cent of its fishing trawlers to encourage shipping in the international waters. Further subsidies and tax benefits on selling the "distant water" catch to the foreign markets apart from various medical benefits in case of injuries while fishing provides enough incentives to its people to carry out fishing activities. It comes as no surprise that China has the world's largest fishing fleet. Beijing's illegal "fishing vessels" are equipped with state of the art 'catch and pack facilities' and are commonly sighted in the Eastern and Western Indian Ocean near the Andaman and Nicobar Islands, apart from the Arabian Sea.

The 572 islands of Andaman and Nicobar witness the Chinese fishing trawlers carrying out illegal fishing as most of the islands are uninhabited. The Chinese trawlers make their way through the Coco and Greater Coco Islands and fish in the dark pitch hours, assuming that the Indian Coast Guard and Navy would not be alert.

The presence of the Chinese trawlers in the Indian Ocean, Arabian Sea and Bay of Bengal is a violation of India's sovereignty, as the fishing zones of these seas and ocean comes under India's EEZ, a rule well outlined by the UNCLOS in Article 56. The issue holds relevance to the national security narratives because of the following factors. First, it jeopardises India's maritime security by fishing in India's EEZ.

Secondly, overfishing, especially in the regulated months when breeding happens, affects the marine environment. Moreover, India's economic and cyber security can be exposed to sabotage. From a geopolitical perspective, these "civilian" trawlers violate India's EEZ as People's Armed Forces Maritime Militia (paramilitary forces) accompanies them in the guise of civilian fishermen.

These fishing vessels do not keep their automatic identification systems transmitter/responder activated, which is a mandatory requirement by the international agencies for fishing. Reports of 2020 suggest that around 450 such research vessels and fishing trawlers had entered various sectors of the Indian Ocean Region. The role of Chinese maritime militia in fishing camouflage is well established. It was recognised by the PLA Daily in 2014 when it quoted that, "Putting on camouflage, they qualify as soldiers; taking off the camouflage, they become law-abiding fishermen".

The PLA controls these "fishermen", and their objectives overlap with the Chinese Communist Party (CCP) agenda of "ocean grabbing", a method of fishing in which the small fishers of the victim countries are denied the marine resources of their own EEZ. As these trawlers have space for storing live ammunition, a condition made mandatory for being called "Chinese fishing trawlers" and are equipped with sophisticated intelligence and surveillance systems, they amount to incremental strategies of asymmetrical advantage in order to have a gradual maritime foothold in the water bodies surrounding India.

It blurs the distinction between combatants and non-combatants, a necessary condition for hot pursuits in UNCLOS and the International Humanitarian Law (IHL). As a thumb rule, civilian trawlers cannot be carrying either the elite irregular forces, live ammunition or surveillance mechanisms. Chinese trawlers have provisions for all three. Besides that, fishing trawlers can potentially be used for trafficking drugs and arms from the Arabian Sea. The nexus of China, Pakistan and the Taliban poses serious drug trafficking issues for India. Maritime security is hence at threat because of IUU.

Militarisation of the Chinese artificial islands either in the SCS or in Feiyuehu Island can provide its militia with the possible support to accomplish the agenda of the CCP. In such a case, can the Chinese trawlers or research vessels then speak for its "right of innocent passage"? An objective of the Chinese trawlers and militia is to regularise the Chinese presence in the "distant seas" to project power that helps Beijing in both peacetime and wartime. Maritime security and the freedom of high seas thus are hence strongly co-related with Chinese illegal and unregulated fishing.

China's illegal and unregulated fishing amounts to economic plunder of a nation's resources as they deplete the fishery resources can result in food and employment deprivation of the people of the coastal areas of India. The fishing industry provides employment to three critical sectors- catching, processing and marketing and contributes 1.07 per cent to the country's GDP. Fishes and Prawns are an essential source of protein in India's coastal areas. The demand for 'blue food' has increased due to an increasing population worldwide and in India.

Any food resource depletion would increase prices and affect the fiscal budget. Adverse effects on any of these sectors can hinder rural development and food security, thereby having the potential to cause social unrest. From an environmental security perspective, the coral reefs near the Andaman and Nicobar Islands constitute a part of the world heritage and should be protected from the perils of IUU. Further, the use of LED lights and squid jigging equipment can eventually result in overexploitation leading to a scarcity of fish. There have been reports that illegal fishing is also done by dynamite blasts as well as bottom trawling.

The Indian government also bans such materials and hence it requires more stringent measures by the necessary agencies. With an active policy of fusion of military and civilian facilities, Beijing's shipping trawlers can also damage India's undersea cables and cyber security. Adopting the Marine Fisheries (Regulation and Management) Bill of 2019 and the National Fisheries Policy of 2020 have introduced novel measures such as the mandatory requirement for trawlers to have suitable transponders and communication systems.

Nevertheless, Chinese IUU has not stopped and still poses a danger to the maritime security of India and other coastal states. In the above context, both Quad and European Union's future Indo-Pacific policy have included IUU as an agenda for cooperation. Its strategic frustration related to Quad and AUKUS, apart from the EU's Indo-Pacific policy, is also related to its future control of its IUU, apart from its expansionist policies.

**India: Matsya Setu 2.0 app to boost freshwater fisheries**

<https://www.financialexpress.com/economy/matsya-setu-2-0-app-to-boost-freshwater-fisheries/2452405/>

"In an initiative to bring inland fisheries trade under a single digital platform, the government will soon launch a mobile app whereby farmers, wholesale buyers, suppliers of feed and equipment and other members of the value chain will be able to share information on market prices and availability of produce.

Matsya Setu 2.0, an android mobile app developed by ICAR-Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar, with funding from the National Fisheries Development Board, Hyderabad, has features to facilitate trade in freshwater fisheries based on geographical location of the stakeholders.

"This app focuses on freshwater fisheries trade, where aqua farmers get access to price information and availability of suppliers based on geographical locations," Saroj Kumar Swain, director, CIFA, told FE. The app is likely to be formally launched next month and will cater to the B2B (business-to-business) segment of the trade.

Currently, information about prevailing wholesale prices of freshwater fish is scattered and patchy. Matsya Setu 2.0 will help farmers with real-time information on prices. India's fish production was 14.2 million tonne in 2019-20. Inland fisheries have a 74% share of total fish production, while the rest is contributed by marine fisheries.

The app will also have online courses, wherein experts on aquaculture demonstrate breeding, seed production and information about commercially important fish like carp, catfish, scampi, murrel, ornamental fish and pearl farming.

It will be an upgraded version of the Matsya Setu app launched in July 2021, which provided freshwater aquaculture technologies to farmers. In the first version of the app, information about management practices to be followed in maintaining soil and water quality, feeding and health management in aquaculture operations was provided.

An official said the fisheries sector is considered a 'sunrise sector' and has witnessed average annual growth of 10.87% since 2014-15. "There has been a definitive shift in fish production from marine fisheries to inland fisheries, primarily because of rapid growth of inland aquaculture," the official said.

The Pradhan Mantri Matsya Sampada Yojana, a scheme to bring about the 'blue revolution' is being implemented from 2020-21 to 2024-25, with an investment of Rs 20,050 crore. The Centre has allocated Rs 1,879 crore towards the scheme in 2022-23, while `1,200 crore was allocated under revised estimates in 2020-21. India is the second-largest fish producing country in the world, accounting for 7.56% of global production in 2020. The sector contributed about 1.24% to the country's gross value added (GVA) and over 7.28% to the agricultural GVA in 2020-21."

**India: Mega projects! Sagar Mala Project for India's 7,517 km long coastline**

<https://thelogicalindian.com/humaninterest/sagar-mala-project-ports-31395>

"India is one of the most rapidly growing economies globally, with an average Gross Domestic Product (GDP) of over 7 per cent. The Sagarmala programme is the flagship programme of the Ministry of Shipping to promote port-led development in the country through harnessing India's 7,500 km long coastline, 14,500 km of potentially navigable waterways and strategic location on key international maritime trade routes. The central vision of the Sagarmala Programme is to reduce logistics costs for EXIM and domestic trade with minimal infrastructure investment.

The Union Cabinet approved the Sagarmala project in 2015, and the Ministry of Shipping prepared and released a National Perspective Plan (NPP) in April 2016. According to the information that the Press Information Bureau (PIB) released in March 2020, 500 projects had been identified at the cost of Rs.3.55 lakh crore. About 143 projects that amounted to Rs.0.88 lakh crore are already complete, 190 projects worth Rs.2.12 lakh crore are in progress, and the remaining 167 projects are expected to be completed by 2035.

Central Line Ministers, State governments or maritime boards are responsible for the implementation of the projects. On the inauguration of the Sagarmala Development Company, union minister Nitin Gadkari said that the project would be a game-changer and the biggest project in the country's history. The company was inaugurated under the Company's Act, 2013, and had the initial authorized capital of Rs.1,000 crore.

The Sagarmala project is also supposed to focus on port-led industrialization, promotion of cruise tourism, port connectivity enhancement, the establishment of multi-modal logistics parks, coastal community development projects and the degradation of the fisheries sector. Only 6% of cargo goes through waterways. The 7,500 km long coastline of India transports only 6 per cent of the cargo through waterways, compared to 55 per cent through the road and 35 per cent through the rail network. India incurs an annual logistical cost of 19 per cent, whereas neighbouring China bears it at 12 per cent.

Nitin Gadkari also mentioned that India's exports would increase by one and a half times if we could bring down the logistical cost at 12 per cent. The project envisages developing new ports along the Indian coastline. The Sagarmala project is essentially India's push for a blue economy. The project also envisions the development of inland waterways, intensifying fisheries and developing new economic zones. A report titled 'Blue economy:

An ocean of livelihood opportunities in India' mentioned that one of the major fallouts of the COVID-19 pandemic is the loss of livelihoods. The report also mentioned that significant sectors likely to provide and host opportunities for people are ocean-based sectors, including fisheries, shipping, tourism, deep-sea mining, offshore energy resources, marine research, ocean conservation, and ocean sciences.

A Plan for maintenance and repair needs to be on the cards. India has needed a maritime re-invention for a while now; however, the project came into being when the national leaders realized that the country lacked the high quality of international trade through the coastal line

due to the lack of infrastructure facilities. Compared to Asian and East Asian countries like China, South Korea, and Japan, shipping goods through Indian ports was way higher.

After India completes the development of a viable coastal network, we should start shipping bulk quantities of products like coal. While it is indeed a step forward to develop the country's maritime capabilities, India should simultaneously prepare a plan B for the maintenance and repair of shipping vessels.

The entire onus of the project on the government's already overloaded shoulders would be a bit too much to ask for; therefore, a public-private partnership model can come into play. However, the allotment of port projects must solely be based on a company's capacity of fulfilling its promises.

### **India: MoES plans first coastal spatial mapping initiative for sustainable ocean activities**

<https://indianexpress.com/article/india/moes-to-perform-first-ever-coastal-spatial-mapping-towards-sustainable-future-of-oceans-7215680/>

"Indian and Norwegian ocean scientists will soon embark on a first-of-its-kind coastal mapping initiative to assess the scope of developing sustainable activities supporting industry, fisheries, tourism and similar ocean-centric activities. The five-year programme, Marine Spatial Planning (MSP), is one of many initiatives planned between the two countries. Last year, the Ministry of Earth Sciences (MoES) had inked an MoU with their Norwegian counterparts for the Indo-Norway Integrated Ocean Initiative.

In the first phase of this pilot project, MSP is planned for Puducherry and Lakshadweep. Leading the project are experts from Chennai-based National Centre for Coastal Research (NCCR), who have started initial sampling work at Puducherry. Since these sites are on either coast and have diverse requirements, the scientific teams are exploring all possibilities for multiple sectors. India has a vast coastline measuring over 7,517 km.

Nine coastal states and 1,382 islands are dependent for their livelihoods on the Arabian Sea, Bay of Bengal and Indian Ocean, and 95 per cent of India's trade is handled via these seas. India has initiated the process to improve its usage of ocean and marine resources through its proposed Blue Economy Policy 2020 to be developed by the MoES. "MSP is an important component of India's Blue Economy and it is common for countries with such a policy to undertake MSP.

In this project, experts will perform high resolution mapping of coastal locations and territorial water. The assessment will help understand the scope of industries and activities which can be proposed here alongside protecting marine life and biodiversity in the region," M Rajeevan, Secretary, Ministry of Earth Sciences, told The Indian Express. Blue Economic policy will steer and enhance ocean-centric activities, including tourism, fisheries and fish processing and other industries, along both the coast and territorial waters, experts said.

In the absence of such an economic policy, ocean resources could be exploited due to unplanned and unscientific developmental works, the MoES Secretary added. Once the mapping is

complete, expected within three years from commencement, the scientific teams shall present a report proposing suitable and sustainable activities for these two sites. NCCR had previously studied the coasts of Chennai, Goa and Kutch and suggested coastal management plans.

India will spend an estimated Rs 8-10 crore per year for the present MSP whereas the Norwegian team will extend technical knowledge, offer guidance and share human resources required for the mapping and planning. The United Nations Development Programme and the World Bank, too, have expressed their keenness to partner with the MoES in this initiative.

Ministries of Environment, Forest and Climate Change, Trade, Industry and Fisheries, Tourism, Shipping, Fisheries, Animal Husbandry and Dairying along with state governments of Tamil Nadu and Lakshadweep UT are involved in this inter-ministerial project.

### **India: MoU pushes for farming, fisheries ops & income**

<https://www.dailypioneer.com/2021/india/mou-pushes-for-farming--fisheries-ops---income.html>

"In a first step towards setting up of the Farmers Produce Organisations (FPOs) and Fish Farmer Producer Organisations (FFPOs) in the Union Territory Lakshadweep, the island administration and National Co-operative Development Corporation (NCDC), have inked a pact to scale up farming operations of the agricultural and coastal communities for better access to quality input, technology, credit and market through economies of scale.

The MoU was signed recently by Sundeep Kumar Nayak, Managing Director of NCDC on behalf of the apex finance entity under the Union Agriculture Ministry with A Anbarasu, Advisor to Lakshadweep Administrator in the presence of UT Administrator Praful Patel. As part of the collaboration, among various activities, the NCDC would also appoint Community based Business Organisation (CBBO) to promote FPOs and FPPOs by collaborating with them in a holistic manner, said Nayak.

The NCDC will provide handholding to these organizations for next five years to help them realise a better price of their farm produce and make them self-reliant in the long term, he added. On his part, Anbarasu welcomed the initiative saying that the collaboration will bring innumerable benefits in the region. "This will ensure employment and entrepreneurship skills among farmers and fishermen in the island.

One out of seven persons is a fisherman here engaged in coastal activities like fisheries, seaweed business and coconut trade besides farming. This is a good beginning and we are looking forward to forming entities of the farmers and fishermen for their benefits besides all round development of the community." Setting up the FPOs and FFPOs is the part of the Narendra Modi Government's scheme of bringing more and more small and marginal farmers on a big platform as a joint entity for which budgetary support of `4,496 crore by 2024 has been allocated.

Aim is to form and promote at least 10,000 new FPOs by that period across the States. Currently, there are over 3,000 FPOs in the country, considered to be quite low given the fact that the total marginal and small farmers, having landholding size of up to five acres, account for over 85 per

cent of total farmers in the country. Besides, as per the pact, the NCDC and Lakshadweep administration will also work together on areas such as animal husbandry, dairy, agriculture, food processing, rural finance and women issues through cooperative principles in the island.

### **India: MoU Signed Between IITG, Brahmaputra Board & CWC to understand the fury of Brahmaputra River**

<https://www.sentinelassam.com/topheadlines/mou-signed-between-iitg-brahmaputra-board-cwc-to-understand-the-fury-of-brahmaputra-river-520409>

"How to live with the Mahabahu (the Brahmaputra)? This single question has made the Brahmaputra Board, the CWC (Central Water Commission) and the IIT-Guwahati to get into a huddle for understanding the fury of this mighty and only river of India having a male name. It is also a means to find permanent ways for tackling of the floods and erosion caused by the river across Assam annually.

On December 9, 2020, the Brahmaputra Board, CWC and IIT-Guwahati signed the MoU (Memorandum of Understanding). IIT-Guwahati has been roped in for the mission to analyse the quality of water, sand and sediment of the river to seek solution to erosion. The mission that set in motion on December 23, 2020 with a rafting expedition – 'Brahmaputra AmantranAbhiyan' (BAA) – from Tuting in Arunachal Pradesh will conclude on January 21, 2021 at Assamerlga in Mankachar district on the Indo-Bangladesh border. The rafting team comprises personnel from the NDRF (National Disaster Response Force) and experts from the North East Space Application Centre, besides academics from IIT-Guwahati.

Each mentioned group of the team started collection of samples of their interest soon after the explorers entered Assam from Pasighat on December 31, 2020. The IIT academics are collecting samples of sand and rock from the river to study the riverbed. It will further aid in ascertaining the sizes and strengths of the sand granules. These studies will lead to an understanding of the heavy erosion regularly caused by this river; and also in finding out its solution.

The IIT team also aims to ascertain "for what purposes the sand and sediment of the river base can be used. A prime objective is to ensure whether the sand and sediment of this river can be used for construction of the proposed national highways on both banks of the Brahmaputra," said an engineer of the Brahmaputra Board. The team members are also studying the fish habitats along the entire stretch of the Brahmaputra.

The expedition is marked by as many as 30 halts – studded with riparian cultural nites by the local artistes — from Aruanchal Pradesh to Mankachar. The team reached Tezpur on Sunday when the video of the theme song of the expedition composed by Dr Prof. Arup Kumar Sarma was released by the Secretary of the Union Ministry of Jalshakti, UP Singh.

### **India: MPEDA calls for value addition in fish exports to double producers' income**

<https://www.thehindubusinessline.com/economy/agri-business/mpeda-calls-for-value-addition-in-fish-exports-to-double-producers-income/article36467823.ece>

"KS Srinivas, Chairman, Marine Product Export Development Authority (MPEDA), has emphasised the need to focus on value added fish exports, to double producers' income. He said that India has taken a new approach to the presently laid fish exporting system by establishing its position as the lion's shareholder in fresh fish export to overseas markets.

Covid, sluggish overseas markets, hit India's seafood exports in 2020-21 Srinivas was speaking at the online inaugural function of the four-day-long international virtual training programme on 'Value Chain Management in Fisheries' organised by ICAR-Central Institute of Fisheries Technology (ICAR-CIFT) in collaboration with the New Delhi-based African-Asian Rural Development Organisation (AARDO).

The MPEDA chairman also expressed concern over many issues in fish exports, such as lack of access to suitable technologies, modern machineries, skilled manpower, improved market infrastructure and high-end technology development. He appreciated the role of CIFT in this regard, especially with the development of cutting-edge technologies and capacity building measures to promote value addition in fisheries.

#### Online training programme

The online international training, which is being attended by 74 participants from 23 AARDO member countries, comprising 34 from 9 Asian countries and 40 from 14 African countries, is the second of the series of training that CIFT is entrusted with for the present year.

Indian seafood exports hit the Great Wall at Chinese ports CIFT Director Ravishankar CN stressed the importance of fisheries sector in ensuring nutritional security and also the need to reduce post-harvest loss in the fisheries sector by developing better cold chain facilities.

AARDO Secretary General, Manoj Nardeo Singh, pointed out that many developing countries have failed to maximise the value of fish owing to constraints such as large-scale post-harvest loss and challenges in production, distribution and marketing, This has created an alarming situation in aquaculture value chain, he said adding that the programme may give an impetus to the effort to bring a balance in value chain management system.

#### **India: MPEDA, NCDC ink MoU for promotion of marine exports**

<https://www.daijiworld.com/news/newsDisplay?newsID=804357>

"The Marine Products Export Development Authority (MPEDA) and the National Cooperative Development Corporation (NCDC) have inked a memorandum of understanding to synergise their various programmes in the interest of export-oriented capture and culture of fisheries and allied sectors for bringing better value to the stakeholders.

The MoU was signed by K.S. Srinivas, Chairman, MPEDA and Sundeep Kumar Nayak, Managing Director, NCDC, here. ""We have identified ample scope for working jointly in the interest of export promotion of marine products for bringing better value to the stakeholders

through a variety of activities, including export focus, in line with the policies of the government," said Srinivas.

Under the MoU, MPEDA and its societies and NCDC will jointly formulate programmes to provide technical know-how to cooperatives to upscale infrastructure created for primary production and post-harvest management in the marine products export sector.

The MoU also envisages MPEDA and its societies and NCDC to work in close tandem to showcase to the Indian and global market, products, technologies, processes, knowledge and services by the stakeholders through a variety of modes as may be identified by them from time to time.

Both the parties also agreed to the setting up of a Joint Coordination Committee (JCC) composed of representatives from MPEDA and NCDC. MPEDA, under the Union Ministry of Commerce and Industry, is the nodal agency for promotion of marine products exports sector through a range of activities while the NCDC is a development finance institution set up by the Centre for planning and promoting programmes for the production, processing, marketing, storage, export and import of agricultural produce, foodstuffs, industrial goods, and livestock on cooperative principles.

### **India: National fishworkers forum firm in opposing cage fishing planned along 200 sq km of Goa coast**

<https://www.thegoan.net/goa-news/national-fishworkers%E2%80%99-forum-firm-in-opposing-cage-fishing-planned-along-200-sq-km-of-go-a-coast/66304.html?fbclid=IwAR1x02roCm-I9AJbLC26nU5CkcbQFnxN6dEkQBQhKnpzSNFFCrP8R-jGQgg>

"While opposing the Sagarmala project planned across the country, and lodging its objection to the new ports proposed to be built along the country's coast, the National Fishworkers Forum (NFF) has further resolved to oppose tooth and nail cage fishing planned along the 200 sq km of Goa coast. Newly-elected NFF General Secretary Olencio Simoes has asserted that the Rs 400 crore fishing package plan for Goa by the Union Minister is not for the Goan fishermen, but for the fish farmers, who will be mostly industrialists.

The General Body of National Fishworkers' Forum being held here on Saturday elected Olencio Simoes as the new General Secretary of the Forum. As a young leader belonging to Goa, working for the fishworker community since more than a decade, the Forum believes that he will take forward the legacy of earlier leaders and will take the work of the organisation to new heights.

The members elected Jackson Pollayil from Kerala Swathanthra Matsya Thozhilali Federation, as the Treasurer of NFF. Ramakrishna Tandel from Maharashtra Machimar Kriti Samiti has been elected as the Vice President of NFF. The Forum discussed in detail regarding the issues affecting the fish workers across the country and has decided to hold consultations across the communities across India, mobilising the stakeholders and making them aware of how various new policies will affect their lives and livelihood.

It was observed that the new policies are leading a path towards occupying the coast and its resources, which will in a way, dispossess the fish workers from their habitations. “National Fishworkers’ Forum will be making efforts towards creating a Coastal Rights Bill similar to that of the Forest Rights Act, which intends to protect the rights of the fish workers and coastal ecology,” informed NFF Chairperson Narendra R Patil.

He said the NFF has passed resolution against all Sagarmala plans planned across India and opposed all new ports to be built across India, which will be detrimental to the fish workers. “It has been also decided to look at the implementation of the Pradhan Mantri Matsya Sampada Yojana at all the coastal states.

The draft new Blue Economy Policy 2020, has once again been brought without any consultations with the community and have given far less time to respond apart from no translations in local languages. Members from 8 coastal states attended the meeting with the resolution to meet in Tamil Nadu this December,” he added.

Olencio said that the Rs 400 crore fishing activity planned for Goa by the central minister is not for fishermen of Goa but for fish farmers who will mostly be industrialists. “We will strongly oppose cage fishing in 200 sq km planned in Goa,” Olencio warned.

### **India: National Fishworkers Forum urges MPs to defer Indian Marine Fisheries Bill, 2021**

<https://www.thehindubusinessline.com/economy/agri-business/national-fishworkers-forum-urges-mps-to-defer-indian-marine-fisheries-bill-2021/article35460189.ece>

"The National Fishworkers’ Forum (NFF) has opposed the proposed Indian Marine Fisheries (IMF) Bill, 2021, saying that it is fundamentally against the interest of traditional marine capture fishers, fish workers and fisherwomen. The Bill, which is going to be tabled in the current session of parliament, is curtailing the right of marine capture fishers, said Narendra Patil, Chairperson, NFF, urging parliamentarians of both the houses to defer the Bill until the concern of lakh of fish workers across the country are adequately addressed.

The new Bill has definitely created confusion among fishers rather any than clarity in coastal States. While a law to regulate fishing activities in the Indian EEZ and protect the rights to resources of small-scale fishers is needed, the manner in which the Bill and its previous versions have been rushed during the pandemic period excludes the fishing communities from consultation and decision-making.

India to protect subsidies for small fishers Exclusion and non-participation The entire drafting process of the IMF Bill 2021 has been non-participatory (traditional fishers were not consulted or included in the drafting process) and the Bill was not even translated in the regional language, Patil said. Further, the English version of the bill was available on the Department of Fisheries’ website for a few days only and suddenly taken down.

The approach of the Government is a strategic exclusion and non-recognition of traditional fishing communities. It is essential to develop consultation mechanisms with the fishing community to fine tune and improve the provisions of the Bill, Patil said, adding that there should be wider consultations with all related draft policies and legislations.

India committed to conclude WTO fisheries pact Olencio Simoes, general secretary, NFF, said that the Bill, in addition, provides powers to authorised officers to control post-fish landing processing and trading activities which will impact the lives and livelihoods of traditional fish vending fisherwomen across the coastal States.

There is lack of clarity in many clauses and the Bill supersedes the states and other government rules vis-à-vis fishing in their coastal territorial waters. Opposing various sections, NFF demanded that the Bill should be withdrawn and redrafted in consultation with traditional fishers since it dispossesses the customary rights over fisheries and denies the right to life and livelihoods of the marginalised fishers.

Spatial and temporal closures should be notified in consultation with State governments and Union Territories, fishing communities on the basis of current scientific information and advice, he said.

### **India: National marine turtle action plan launched**

<https://orissadiary.com/national-marine-turtle-action-plan-launched/>

"Considering the need to have a conservation paradigm for marine mega fauna and marine turtles, the Ministry of Environment Forest and Climate Change (MoEF&CC) has released 'Marine Mega Fauna Stranding Guidelines' and 'National Marine Turtle Action Plan' in New Delhi today. Speaking at the virtual launch event the Union Environment Minister said that both floral and faunal diversity including the marine biodiversity is the beauty of India and we need to conserve it with best possible action and interventions.

India has rich marine biodiversity along a vast coastline of over 7,500 km. From colorful fish, sharks, including Whale Sharks, turtles and big mammals like whales, dolphins and dugongs to bright corals, marine habitats not only harbor diverse species but also provide resources essential for human wellbeing. Millions of people depend on these resources ranging from maritime trade and transport, food, mineral resources, cultural traditions, spiritual values and inspiration that draws tourists from around the world.

Despite the immense economic, ecological and cultural values of marine habitats in India, marine mega fauna species and marine turtles face a wide variety of challenges including stranding and entanglement. Managing such challenging situations requires coordination, action and people's participation which would help in the long-term conservation of marine species and their habitats.

The documents launched today contains ways and means to not only promote inter-sectoral action for conservation but also guide improved coordination amongst the government, civil

society and all relevant stakeholders on the response to cases of stranding, entanglement, injury or mortality of marine mammals and also conservation of marine turtles.

These two documents highlight actions to be taken for handling stranded animals on shore, stranded or entangled animals in the sea or on a boat, management actions for improved coordination, reducing threats to marine species and their habitats, rehabilitation of degraded habitats, enhancing people's participation, advance scientific research and exchange of information on marine mammals and marine turtles and their habitats.

### **India: Navy, Coast Guard satellite to keep track of fishing vessels**

<https://www.tribuneindia.com/news/nation/navy-coast-guard-satellite-to-keep-track-of-fishing-vessels-369646>

"The Navy and the Coast Guard will soon have the latest satellite to track fishing vessels across a wider area at sea. This will be separate from the existing naval satellite 'Rukmini'. The Indian Space Research Organisation (ISRO) is coming up with an OCEANSAT-III, for which the Department of Fisheries is providing Rs 30.65 crore this fiscal ending on March 31.

"This (the satellite) will cover the entire Indian Exclusive Economic Zone (EEZ) and hence, track fishermen in a comprehensive manner," the Ministry of Defence told the Rajya Sabha in a written reply. The EEZ is 370 km of sea from any point of the Indian territory and needs to be regulated for illegal activities.

The launch of the OCEANSAT-III is not yet announced, but is expected within two months. The first OCEANSAT was launched in 1999. The latest version will map several aspects that effect fisheries. Tracking unregulated and regulated fishing boats is one of prime tasks of the Navy and Coast Guard especially after the November 2008 Mumbai terror attacks, when armed terrorists from Pakistan sailed on a hijacked fishing boat to reach Mumbai.

The costal security revamp post-Mumbai attacks included installing the Automatic Identification System (AIS), also called transponders, on all fishing vessels. These emit a signal that allows the ground-based controllers to know the location of boats.

All set for OCEANSAT-III Rs 30.65 cr provided by Department of Fisheries for the latest satellite - It will cover the Indian Exclusive Economic Zone, which is 370 km of sea from any point of Indian territory - The launch of OCEANSAT-III is not yet announced, but is expected in two months

### **India: NCDC to boost fisheries exports under PMMSY**

<https://www.outlookindia.com/outlook-spotlight/ncdc-to-boost-fisheries-exports-under-pm-matsya-sampada-yojana-news-187635>

"COOPEXCIL, the cooperative sector exports promotion council organised a Fisheries Exports Promotion Workshop under Pradhan Mantri Matsya Sampada Yojna (PMMSY) at Mangaluru,

Karnataka on 19 March 2022. NCDC, the apex development finance institution of central government has steered COOPEXCIL to realize the goal of cooperatives contributing a major share to GDP of India.

Speaking at the workshop, Sundeep Nayak, managing director of NCDC said that the flagship PMMSY has earmarked an investment of more than Rs.20,000 crore as part of Aatma Nirbhar Bharat Package. It is estimated that fish production in India would increase to 22 million metric tonnes and fisheries export earnings to reach Rs.1,00,000 crore by 2024-25.

The workshop saw participation of stakeholders from a wide spectrum representing the fishers, cooperative institutions, fish processors, fish exporters, government bodies, academic and research institutions. Sahakar Bharati functionaries also partnered with NCDC in organizing the workshop. Shri Ramesh Vaidya, former national President of Sahakar Bharati lauded the efforts of NCDC in mainstreaming the potential of fisheries cooperatives of the region.

Officers from the Department of Fisheries of central government highlighted the supportive ecosystem created in fisheries exports. Discussions in the workshop covered seafood exports, infrastructure support for export promotion, deep sea fishing for exports and quality standardization issues for exports.

Dr. Rajeev Ranjan, former Secretary (Fisheries) in central government and currently senior adviser in NCDC delivered a keynote address. Experts from the states of Maharashtra, Gujarat, Goa and Karnataka and from central organizations like NFDB, CMFRI contributed immensely in the discussions. Experts from the College of Fisheries, Mangaluru also participated."

### **India: Need to have robust cage culture system in reservoirs: Jatindra Nath Swain**

<https://www.devdiscourse.com/article/headlines/1901241-need-to-have-robust-cage-culture-system-in-reservoirs-jatindra-nath-swain>

"Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India organized a webinar on ""Cage aquaculture in Reservoir: Sleeping Giants"" today as a part of ""Azadi Ka Amrit Mohatsav"".

The event was presided over by Shri Jatindra Nath Swain, Secretary, Department of Fisheries (DoF), Government of India (GOI) and well-attended by around 100 participants including officials of Department of Fisheries, GoI and fisheries officials of different States/UTs, faculties from State Agriculture, Veterinary and Fisheries universities, entrepreneurs, scientists, farmers, hatchery owners, students and stakeholders from aquaculture industry across the country.

The Webinar began with the welcome address by Shri I. A. Siddiqui, Fisheries Development Commissioner, DoF along with introduction of the theme of the Webinar and the distinguished panellists, Shri Jatindra Nath Swain, Secretary, Shri Sagar Mehra, Joint Secretary (Inland Fisheries) along with Dr. B. K. Das, Director, ICAR- Central Inland Fisheries Research Institute (CIFRI) and other participants.

In his inaugural address, Union Secretary Fisheries, Shri Swain stated the importance of reservoirs and cage aquaculture for the development of fisheries sector. Further, Mr. Swain advised to have robust cage culture system in reservoirs including potential markets to ensure good returns to the farmers and highlighted the examples of success stories across the globe and the country.

Mr. Swain also requested the scientists and the Fisheries Departments of the States/ Uts to motivate fish farmers and develop innovative ways as well as policies for increasing profits, decreasing input cost, species diversification and increasing the production and productivity of cage culture systems in the reservoirs.

Shri Sagar Mehra, JS (Inland Fisheries), in his opening remarks, briefly stated the pivotal of reservoir fisheries and aquaculture in enhancing fish production using enclosures such as cages. Further, Shri Mehra added that cage systems efficiently utilise the water bodies by harnessing their natural productivity and are economically, socially and ecologically viable. Department of Fisheries, GOI earmarked the investment atregets for promoting cage aquaculture under flagship scheme Pradhan Mantri Matsya Sampada Yojana (PMMSY).

During the technical session, Dr. B. K. Das, Director, ICAR- Central Inland Fisheries Research Institute (CIFRI) made a comprehensive presentation on ""Cage aquaculture in Reservoir: Sleeping Giants"" and briefed about various technologies, opportunities and activities developed by ICAR-CIFRI for diversification of cage aquaculture in various parts of the country along with various skill and capacity development programmes for the farmers and stakeholders.

Dr. Das emphasised on the need for promotion of cage aquaculture in reservoirs of the country by following good management practices and providing support services and CIFRI is ready to associate in tandem with the States and Uts for knowledge support on technological back drop for various perspectives of enclosed pisciculture.

After the presentation, an open discussion session was held with the fish farmers, entrepreneurs, hatchery owners, students, scientists and faculty of the universities. After discussion, the webinar concluded with a vote of thanks proposed by Dr. S. K. Dwivedi, Assistant Commissioner, DoF.

### **India: New technology developed to breed marine fish popular for its meat quality**

<https://www.thehindubusinessline.com/economy/agri-business/new-technology-developed-to-breed-marine-fish-popular-for-its-meat-quality/article33996888.ece>

"The Central Marine Fisheries Research Institute (CMFRI), one of India's premier research organisations has developed hatchery technology for Picnic Seabream (*Acanthopagrus berda*), a commercially important marine food fish. The breakthrough will help in the diversification of the country's mariculture activities as the fish - Black Seabream and Goldsilk Seabream - is known for their excellent meat quality and high economic value. It has high demand in the domestic market with a price of around Rs.450-500 per kg.

Locally called Karutha Yeri, the sh is an excellent species for mariculture owing to its faster growth rate, strong resistance to diseases and ability to cope up with wide variations in environmental parameters such as salinity and temperature. The breeding technology, developed by the Karwar Research Centre of CMFRI, is expected to open up enormous scope for the country's mariculture ventures in near future through species diversification, said Director of CMFRI A.Gopalakrishnan.

#### Increase in breeding

With the development of hatchery technology for Picnic Seabream, there could be a new surge in an exponential increase in marine fish production, he said. The next task of the institute is to standardise the farming protocol of the fish, as no record of breeding and aquaculture of this fish is available in the country.

Considering the characteristics of the sh, the mariculture of Picnic Seabream is expected to be highly prospective in terms of attracting commercial benefits and meeting growing seafood demand in the near future, he said. According to Gopalakrishnan, India targets to produce 4-5 million tonnes of fish in the next 10 years through mariculture.

Species diversification for mariculture is primarily aimed at achieving this target by enhancing the marine cage farming system across the coastal states of the country. This is the seventh marine food fish for which breeding technology was developed by the CMFRI. It took around three years for the CMFRI scientists to develop the seed production technology for this fish.

Earlier, the institute had succeeded in brood stock development of fishes like Cobia, Silver Pompano, Indian Pompano, Orange-spotted Grouper, Pink Ear Emperor and John's Snapper. CMFRI would transfer these technologies to those interested in the commercial production of the seeds, he said.

#### **India: Newly patented diagnostic tool for aquaculture pathogen to boost shrimp cultivation**

<https://orissadiary.com/newly-patented-diagnostic-tool-for-aquaculture-pathogen-to-boost-shrimp-cultivation/>

"Scientists have developed a handy diagnostic tool that detects an aquaculture pathogen known as the White Spot Syndrome Virus (WSSV). The peptide-based diagnostic tool by scientists of Agharkar Research Institute (ARI), an autonomous institute of the Department of Science and Technology (DST) has been granted patent on 31 March 2022 as an alternative biorecognition element.

Infection caused by the WSSV to the shrimp *Penaeus vannamei* results in huge loss of crop. This high value super-food is susceptible to a wide range of viral and bacterial pathogens and the probability of occurrence of infections is rather high. Improved nutrition, probiotics, disease resistance, quality control of water, seed and feed, immuno-stimulants and affordable vaccines play an important role in enhancing the production.

Technologies for early and rapid detection of pathogens on the field will help fish and shell-fish farming which provides significant export revenue to the country which is a leading supplier of shrimp to the USA.

To provide a handy, self-use diagnostic for WSSV, Dr Prabir Kulabhusan, Dr Jyutika Rajwade and Dr Kishore Paknikar developed a lateral flow assay using gold nanoparticles for easy visualization of the results. Instead of using poly-/mono-clonal antibodies in assay development, the ARI scientists selected twelve amino acid containing peptides from a phage display library by biopanning. This was a time- and cost-saving approach, eliminating the need for immunization of laboratory animals to obtain the antisera. With the use of peptides, cold-chain requirements for storage are reduced and the assay becomes production friendly.

“Our data indicates high specificity (100%) and sensitivity (96.77%) of the assay, early detection from hemolymph, highly reproducible results with a time-to-result of only 20 minutes,” said Dr Jyutika Rajwade.

The inventors have published this research in Applied Microbiology & Biotechnology and Journal of Molecular Modelling. ARI PhD student Ms Snehal Jamalpure-Lakka, has presented this idea at the National Bio-Entrepreneurship Conclave (NBEC)-2021 and awarded. She will take this work further for commercialization."

### **India: NFDB signs pact with Punjab National Bank**

[https://www.indiaonline.com/article/news-top-story/rbi-issues-guidelines-on-opening-of-current-accounts-by-banks-121080600453\\_1.html](https://www.indiaonline.com/article/news-top-story/rbi-issues-guidelines-on-opening-of-current-accounts-by-banks-121080600453_1.html)

"National Fisheries Development Board (NFDB) under Ministry of Fisheries, Animal Husbandry & Dairying, Government of India has entered into an MoU with Punjab National Bank, the premier Bank in the country, to extend financial assistance through the Bank. The Government created the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) in 2018-19 and is being implemented with a total fund size of Rs.7522.48 Crs comprising of Rs. 5266.40 crore to be raised by Nodal Lending Entities (NLE), like NABARD, NCDC & all scheduled banks.

The eligible entities will be the State Governments / Union Territories, Corporations/Undertakings/Govt. Sponsored, Supported Organizations, Fisheries Cooperative Federations (including FISHCOPFED etc.), Cooperatives, Collective groups of fish farmers & fish produce groups etc. Panchayat Raj Institutions/Self Help Groups (SHGs)/ NGOs, SCs/STs/Marginal Farmers, Women & entrepreneurs, Self Help Groups, Private companies/entrepreneurs and Physically disabled.

FIDF will help in creation and modernization of Infrastructure of capture & culture fisheries Marine Aquaculture, Inland Fisheries, Reduce post-harvest losses and improve domestic marketing facilities and to bridge the resource gap and facilitate completion of ongoing infrastructure projects. So far 67 projects have been approved in the country. 14 from the individual/ private entrepreneurs under FIDF and 53 under Entrepreneur model of PMMSY scheme. Speaking on the occasion, Dr. (Smt) Suvarna, IFS Chief Executive, NFDB, said, “MoU

with PNB will harness the untapped potential of Fisheries sector in tying up the individuals/Private Entrepreneurs of both FIDF and Entrepreneur Models under Pradhan Mantri Matsya Sampada Yojana (PMMSY) for availing Bank loan from PNB, pan India.”

PNB has been presented with NABARD Award and adjudged as the “best public sector bank” in the country for its outstanding performance in the field of agriculture credit, microfinance, financial inclusion and technology adoption. “PNB with 10641 branches 13781 delivery channels and 12518 Business Correspondents, 116 Loan processing centres of Retail, Agri, & MSME loans and 137 Loan processing centres for Mid Corporate Credit including MSME loans for quick-processing.

These dedicated loan Centres will be collaborating with NFDB for Bank funding under FIDF &PMMSY Schemes” remarked, CH S S Mallikarjuna Rao, MD & CEO, PNB. The Zonal Office Hyderabad will be the Nodal Office for all the technically approved proposals received by NFDB across the country.

MoU has been entered at Hyderabad in the presence of Dr.(Smt.) Suvarna Chandrappagari, IFS Chief Executive-NFDB, Shri. CH S S Mallikarjuna Rao, MD & CEO of PNB, Shri M Arul Bosco Prakash, Executive Director (Infra), Shri Sanjeevan Nikhar, GM & Zonal Head at PNB and Shri Rajnish Kumar, Head-Credit & Nodal Incharge of PNB Hyderabad.

#### **India: NFF demands withdrawal of surface road tax**

<https://www.navhindtimes.in/2021/02/28/goanews/nff-threatens-nationwide-agitation-if-centre-does-not-withdraw-taxes-on-fishermen/>

"The convenor of the National Fishworkers Forum (NFF), Narendra Patel on Saturday threatened the central government of a nationwide agitation in Delhi from March, if the central government does not withdraw the imposed surface road tax and several other taxes imposed on the fishermen community.

In the concluding day of the two-day conference and annual general body meeting of the national forum held in Goa, almost after 40 years, Patel pointed out that the central government failed to take the stakeholders into confidence while formulating the fisheries policy and that their genuine demands are ignored. “The central government miserably failed to hear the demands of the fishermen of the country. While working out the plan for sea safety, the government should have taken the fishermen safety into consideration.

It’s the fisherman who identified the terrorist Kasab in Mumbai,” he mentioned. He said that the fishermen of the nation will put up a collective agitation to press for their genuine demands. Patel, who is a Mumbai resident sought to know why the central government has imposed 15 percent interest on financial help provided to small time fishermen of the nation by the centre.

The general secretary of the forum, Olencio Simoes informed that a decision has been taken collectively to oppose the Sagarmala project by the NFF. He also demanded the Goa fisheries

minister to immediately reject the central proposed project of huge cage farming in Goa stating, “Goa rivers do not belong to the centre.”

He also demanded the environment minister to implement the plan given by the fishermen of the state and to withdraw the flawed GZMP 2021. He urged the state government to stop the three linear projects in the state of Goa as it would not benefit the farmers. Other committee members also spoke on the occasion.

### **India: NGT forms committee to review environmental impact of inland aquaculture**

<https://www.hindustantimes.com/cities/mumbai-news/ngt-forms-committee-to-review-environmental-impact-of-inland-aquaculture-101622661126239.html>

"The National Green Tribunal (NGT) has formed a six-member committee to study the sustainability of inland aquaculture practices and submit a report on the same within three months. The move comes in response to a petition filed by Vanashakti, a city-based non-government organisation (NGO). The order was passed by the principal bench of NGT on Monday (May 31) and made public on Wednesday.

The committee will comprise members of the Union environment ministry, Central Pollution Control Board (CPCB), Maharashtra Pollution Control Board (MPCB), Union ministry of fisheries, state fisheries department and a member from Central Inland Fisheries Research Institute. The committee will also undertake study of the existing consent regime under the Water Act, and suggest appropriate improvements for the same.

Consent to establish and operate are granted for various industries by state pollution control boards based on compliance with the Water Act and Air Act, depending on the nature of the enterprise. Environment group Vanashakti had filed the petition last year against fresh water aquaculture being carried out in Vadivale Lake in Maval taluka of Pune district.

Vanashakti alleged that this practice is against the principles of precautionary and sustainable development. Government policies which allow for such practices, Vanashakti said, do not consider the harmful impact of poultry manure, chemical manures and other waste products from poultry farms such as gizzards and chicken guts, chemical fertilisers and antibiotics, which are staples in aquaculture farming. “Aquaculture activities with modern techniques involve use of harmful chemicals.

In the process, such chemicals are released in the lakes and other water bodies concerned. In the present case, permission has been given for aquaculture activities in Vadivale Lake in Pune district. The lake is a source of drinking water to nearby villages. Outfall of the lake is in Indrayani River which is source of drinking water for 28 villages,” NGT observed in its order, a copy of which has been reviewed by HT.

A prime contention mentioned in Vanashakti’s petition is that the Coastal Aquaculture Authority Act (2005), which regulates aquaculture in coastal areas, lays down environmental safeguards for permitting such aquaculture, but there are no safeguards laid down for such activities in inland

waters. “The applicants have submitted that the 2005 Act should apply to all aquaculture activities,” the green tribunal observed. In its final analysis, NGT concluded that there is a need to protect the environment in the process of aquaculture activities “in water bodies other than those covered by the Coastal Aquaculture Authority Act”, and has accordingly tasked the committee with forming new regulations for the same.

“This is a positive step toward protecting freshwater lakes, which are often sources of drinking water for adjacent communities, from industrial pollution. We cannot allow sources of sustenance to be contaminated for commercial gains. The ecological and public health impacts need to be studied closely,” said Stalin D, director, Vanashakti.

### **India: No weather-based index insurance for fisher folk**

<https://www.daijiworld.com/news/newsDisplay?newsID=937331>

"The Department of Fisheries has no proposal for providing a weather-based index insurance scheme to cover the loss suffered by the fishing community due to adverse climatic changes, the Parliament was told on Tuesday. However, there is a scheme that provides for insurance for normal circumstances, Fisheries, Animal Husbandry, and Dairying Minister Parshottam Rupala told the Lok Sabha in a written reply.

Be it inland fisheries or marine, the changing climatic conditions have posed multiple hazards, including increasing instances of floods and cyclones, for fisher folks over the years. The draft National Fisheries Policy does recommend insurance of life, craft and gear and other assets of fishers from the vagaries of nature, he said.

On what the government does for the fishing community, the Minister said that the Department is implementing a flagship scheme, the Pradhan Mantri Matsya Sampada Yojana (PMMSY) with the highest-ever investment of Rs 20,050 crore for a period of five years with effect from 2020-21 to 2024-25 across India.

The PMMSY provides livelihood and nutritional support for socio-economically backward active traditional fishers' families during the fishing ban/lean period under which governmental financial assistance at the rate of Rs 1,500 per month is paid for three months annually.

This comes from Rs 3,000 per annum provided to each enrolled beneficiary along with beneficiary contribution of Rs 1,500 annually. The PMMSY also provides support for insurance to fishers and insurance premium subvention for fishing vessels under its Centrally Sponsored scheme component. Insurance coverage for fisher folks includes Rs 5,00,000 against accidental death or permanent total disability, Rs 2,50,000 for permanent partial disability and insurance coverage for hospitalisation expenses in the event of accident for a sum of Rs 25,000, the Minister said."

### **India: Norway to work together in marine spatial planning**

<https://www.hindustantimes.com/india-news/india-norway-to-work-together-in-marine-spatial-planning-101614765236151.html>

"India and Norway will work jointly in the area of marine spatial planning for the next five years, the Ministry of Earth Sciences said on Wednesday. They have identified Lakshadweep and Puducherry as pilot sites for the project.

The first project steering committee meeting with representatives from both the countries was conducted virtually recently after which the two countries have charted out a plan to ensure that human activities at sea take place in an efficient, safe, and sustainable manner in areas such as energy, transportation, fisheries, aquaculture, tourism across multiple sectors.

This is a part of the Indo-Norway Integrated Ocean Initiative under the Memorandum of Understanding signed between the two countries in 2019. The two countries have decided to extend support for sustainable ocean resources utilisation to advance economic and social development in coastal areas, it said.

The initiative, known as Marine Spatial Planning (MSP), will be implemented by the Ministry of Earth Sciences (MoES) through the National Centre for Coastal Research (NCCR) for India.

### **India: NPSSFW makes urgent request to intervene on the Indian Marine Fisheries Bill, 2021**

"The Department of Fisheries, Government of India plans to introduce the Indian Marine Fisheries Bill 2021 in the current monsoon session of the Parliament. It is different from the Draft National Marine Fisheries (Regulation & Management) Bill, 2019 published and placed for public comments. The Indian Marine Fisheries Bill 2021 to be introduced in the current monsoon session of Lok Sabha has not been subjected to public comments or stakeholders' consultations. In these circumstances, NPSSFW has written to all Members of Parliament (Lok Sabha) requesting urgent intervention to ensure stakeholders' consultations in finalisation of the draft, inclusion of small scale fish workers' concerns in the draft including their right of participation in implementation of the proposed act.

The main issues raised by NPSSFW have been - 1. Centrality of fishers and fish workers: The draft Bill misses the centrality of fishers and fish workers in the regulation and management the marine fisheries, since there is absolutely no scope of their participation in the implementation of this bill. This includes enforcement of regulations, Monitoring, Control and Surveillance, information collection and dissemination and management plans.

2. Dichotomy of vessel licensing and registration authorities: While licensing of fishing boats comes under the purview of the proposed Act, the registration of fishing boats remains under the Merchant Shipping Act, 1958. Ideally, the restrictions/conditions of the fishing licence should also apply to the registration of fishing boats, which is difficult to follow since licensing and registration of fishing boats are under two separate Acts under two separate ministries. Therefore, registration of fishing boats should be brought under the proposed Indian Marine Fisheries Bill.

3. Ambiguity in fishing licenses for territorial waters and EEZ: Currently, all fishing vessels which are licensed by the State Licensing Authority can operate in the Territorial Waters, as well as the EEZ. However, the proposed Act applies to only the EEZ beyond Territorial Waters and prescribes the application of a fresh license under this Act. This calls for issuance of a clear direction for continuation of existing licenses under the proposed Act.

4. Definition of Small-Scale Fishers: The definition of Small-Scale Fisher (SSF) under the proposed Act is not cognizant of the issues or the scale of fishing boats in India. The SSF must not include the 'motorised-mechanical' category of fishing boats.

Thus, the definition of SSF in the draft Bill should be as follows: "small-scale fishers" means owner-operated fisheries (not by large firms or companies) using non-motorized fishing boats and motorized-non mechanical fishing vessels, using relatively small amount of capital and energy, making single-day or multi-day fishing trips, providing for subsistence, domestic consumption or export and includes traditional and artisanal fishers".

The proper and just definition of SSF should be applied in directing and framing 'Fisheries Development and Management Plans' and also, the provisions of penalties under Schedule-II since the mandate of the draft Bill includes 'promotion of livelihoods of small-scale and artisanal fishers'. 5. Convergence with National Fisheries Policy: The draft NFP has been published and it is in the process of finalisation. As such, the proposed Act should be drawn under the policy directions to be provided by the National Fisheries Policy.

Therefore, the government should adopt the National Fisheries Policy before finalising the instant Bill. 6. Rules: It is quite evident from the proposed Act that almost all of its provisions are dependent on the Rules to be prescribed for their implementation. As such, this Act can only be operationalised once the Rules have been framed. In view of the this, this should be explicitly stated in the Bill that the Act will become operational on adoption of the relevant Rules.

NPSSFW requests the members of parliament to ensure that the passing of the Indian Marine Fisheries Bill, 2021 be deferred until such time that the above listed concerns are adequately and properly addressed, and necessary stakeholder consultations undertaken to that effect. NPSSFW will submit a detailed review of the instant Bill and recommendations for necessary Rules for your consideration.

### **India: Objects to IOTC yellowfin tuna stock-rebuilding plan**

<https://www.seafoodsource.com/news/environment-sustainability/india-objects-to-iotc-yellowfin-tuna-stock-rebuilding-plan>

"The interim plan for rebuilding the Indian Ocean yellowfin tuna stock by the Indian Ocean Tuna Commission (IOTC) should target cooperation of large-scale industrial fishing fleets, as opposed to small-scale fishers, according to India's Department of Fisheries. India has objected to the IOTC's resolution on the rebuilding of Indian Ocean yellowfin tuna. India Fisheries Development Commissioner Intisar Anees Siddiqui, in a letter to the IOTC Secretariat, said the

large-scale industrial fishing fleets are to blame for reducing yellowfin tuna stocks in the Indian Ocean and “should bear much responsibility.”

The vessels, Siddiqui said, “exploit the share of the yellowfin tuna stocks and are responsible for the present status of stock of yellowfin tuna in the Indian Ocean.” He said India supports efforts to have the industrial fishing fleets of developed and distant water fishing nations “reduce their catch to conserve and restore the yellowfin tuna stocks.” “Putting the burden of sustainability on small-scale fishers and impacting the livelihoods of millions of such resource-poor fishers may not be a wise decision,” Siddiqui said.

Siddiqui added that India is unhappy with portions of IOTC resolution, especially the parts calling on developing countries that reported 5,000 metric tons or more of yellowfin tuna catch in 2014 to reduce the volume by 12 percent. India has estimated most of its four million marine fishers “undertake fishing by multi-gear and multi-species non-selective fisheries and mostly confined to near-shore coastal areas.”

“Most of these small-scale fishing boats do not target tunas, but tunas are recorded as bycatch,” Siddiqui said. Siddiqui said India is not entirely opposed to implementing the previous IOTC resolution prohibiting large-scale gillnets in the high seas, he said the proposal to phase out gillnet-fishing vessels by 1 January, 2022, is “impractical and objectionable” due to their widespread use by small-scale fishers for subsistence fishing.

Coastal states should be left to manage the fisheries within the exclusive economic zone as provided for in Article 16 of the IOTC agreement for exploiting, conserving, and management of living resources – including highly migratory species like yellowfin tuna, Siddiqui said. Such an approach, India said, will allow the coastal states to protect the interests of small-scale, resource-poor, and low-income fishers.

India joins Indonesia and Oman, which objected to the IOTC resolution on 30 June and 7 July, respectively. At least 10 of the IOTC’s 30 members must object to the resolution by 17 December for it to be null and void. India, Indonesia, and Oman – and any other IOTC member objecting to the resolution – shall not be bound by the decision, but if at least 10 of the members reject the approval then the resolution is effectively nullified.

### **India: Ocean resources can boost economic growth, Niti Aayog to study how**

<https://theprint.in/economy/ocean-resources-can-boost-economic-growth-niti-aayog-to-study-how/643028/>

"The Niti Aayog has set up a high-level panel for better coordination and integration of the Narendra Modi government’s initiatives in the sphere of India’s blue economy. Blue economy broadly refers to the use of ocean resources for economic growth, improved livelihoods and jobs in a sustainable manner. This includes different sectors such as fisheries, tourism, offshore oil and gas and infrastructure among others. India’s blue economy is estimated to be around four per cent of the Gross Domestic Product (GDP).

The new Blue Economy Coordination Committee (BECC) will be headed by the Niti Aayog vice chairman Rajiv Kumar and will have as members, the organisation's CEO, Amitabh Kant; deputy National Security Adviser, former Navy chief Admiral R.K. Dhowan (retd); as well as secretaries of the ministries of external affairs, defence, home affairs, commerce, fisheries, earth sciences and department of expenditure among others.

According to an order issued by Niti Aayog, a copy of which has been accessed by ThePrint, the committee will ensure effective coordination among stakeholder central ministries, states and union territories and other agencies on various critical programmes and initiatives undertaken in the blue economy domain. The committee will also ensure integration of national and state plans, policies, programmes in the six functional clusters, which have been formed to look at various aspects of the blue economy.

These six functional clusters include a National Accounting Framework, which will be overseen by the Ministry of Statistics and Programme Implementation; Marine Fisheries under the Department of Fisheries; Logistics, Infrastructure and Shipping under the Ministry of Ports, Shipping and Waterways; Coastal and Deep Sea Mining, New and Renewable Offshore Energy and R&D under the Ministry of Earth Science; National Coastal Marine Spatial Planning Framework under the Ministry of Environment, Forest and Climate Change and Security and International Engagement under the National Security Council Secretariat.

The Niti Aayog's panel will also "harmonise" national actions with international best practices and obligations under various treaties in respective maritime domains, the order states. A senior government official told ThePrint that the formation of the BECC is a step in the right direction. "It still needs to be seen whether this panel can perform better than other multi-sectoral and multi-ministerial committees without wrapping itself in red tape," the official said. The official added that the new committee is similar to those constituted in the past, albeit with differences in their mandate and charter.

"All the committees need to formulate a common strategy to achieve a high economic growth with collaborative cooperation and security," the official said. Why this panel? According to the Niti Aayog, the vision for enhancing India's maritime potential and role in the maritime domain has been put out in the form of different initiatives by the government. The Aayog order says the variety of activities and interests in the maritime sector and the lack of an integrated and coordinated approach towards them lead to overlaps and duplication, thus giving way to inefficiencies, suboptimal performances of schemes and utilisation of resources.

"There are also jurisdiction issues between states and the Centre on maritime matters. In the absence of an appropriate mechanism, the coordination and integration of the national maritime assets, resources and efforts may not be optimal," the Niti Aayog order states. The order highlights that the need for sustained economic growth in India is determined by a range of economic activities linked to the maritime domain to a large extent.

With India aiming to become a high-growth economy and looking to enhance its capabilities in the maritime domain, a critical factor will be its ability to play a consequential maritime role. "This ability will not just be a product of strong maritime power, but also of a robust maritime

economy that is sustained by ports, coastal infrastructure, shipping, fishing, seaborne trade, offshore energy assets, undersea pipelines and cables and seabed resources,” the order states.

### The blue economy

A second senior government official said blue economy is a nouveau term for business conducted in the oceans, the global commons, for centuries. “India is looking to leverage the blue economy to a \$10 trillion estimate in the next decade and it will power the growth cycle of India like never before,” the official said. The first official quoted above said the vast coastline of India and its predominant maritime geography places all blue economy initiatives as the best platform for engaging the Indian Ocean Region littorals for cumulative growth.

In 2019, the Modi government in its vision for New India by 2030 highlighted the blue economy as one of the 10 core dimensions of economic growth. In 2018, Niti Aayog had set up a committee under former Navy chief Admiral R.K. Dhowan (retd) and senior IAS officer Viswapati Trivedi to draft a National Maritime Policy. The draft policy was sent for inter-ministerial consultations in 2019.

The Economic Advisory Council to the PM also came up with a draft policy framework document in September, 2020. Both these draft policy documents had highlighted the lack of a single national agency for coordination and integration of maritime activities which comes under various sectors, such as ocean and coastal economy, energy, infrastructure, environment, shipping, law, culture, tourism among others.

Since they are dealt with by different ministries and agencies, the reports had called for a cohesive maritime governance network for better coordination among different stakeholders. The second official quoted above said India has been a maritime and seafaring nation from about 5,000 years ago, but in the last 400-odd years, there has been a decline in the maritime consciousness in the mindset of the nation. “But, with a renewed vigour and an effort to find its place in the global stage, India is once again looking to the oceans,” he said.

### **India: Opposes fisheries deal at WTO**

<https://www.livemint.com/news/india/india-opposes-fisheries-deal-at-wto-11626351567634.html>

"India on Thursday opposed a move by developed countries at the World Trade Organisation (WTO) to scrap subsidies for fishermen, demanding a balance between current and future fishing needs of developing countries as well as effective special and differential treatment (S&DT) keeping in mind their developmental needs. ""An important element of what India wants is appropriate and effective special and differential treatment (S&DT), in the true spirit as enshrined in the guiding principles of the Marrakesh Agreement.

Limiting S&DT to poor and artisanal fishermen only is neither appropriate, nor affordable and not acceptable at all. S&DT has to be for a country as a whole. We need S&DT to not only protect livelihoods of poor fishermen but also to address food security concerns of a nation, have the necessary policy space for developing the fisheries sector and for the time required to put in

place systems to implement the disciplines,"" India's trade minister Piyush Goyal said in a statement during the ministerial meeting on fisheries negotiations at WTO.

Developed countries claim that fisheries subsidies, estimated to be in tens of billions of dollars annually, create significant distortions in global fish markets and are a major factor contributing to overfishing and overcapacity and the depletion of fishes. Developing countries such as India, on the other hand, want to protect subsidies for low-income, resource-poor fishermen for whom it is a matter of livelihood and constitutes a significant electorate in coastal states such as Gujarat, Tamil Nadu, Karnataka, and Kerala.

A deal is mostly targeted at China, which is the largest catcher and exporter of fish and provides huge domestic subsidy to its fishermen. India is a distant seventh among top fish exporters and does not indulge in illegal, unreported and unregulated (IUU) fishing which WTO wants to curb. Goyal said India is very keen to finalise the agreement because irrational subsidies and overfishing by many countries is hurting Indian fishermen and their livelihood. "However, I am disappointed to note that we are still short of finding the right balance and fairness in the agreement."

India has said that WTO members should not repeat the mistakes made during the Uruguay Round which allowed unequal and trade-distorting entitlements for select developed members, particularly in agriculture, while unfairly constraining less developed members who did not have the capacity and resources to support their industry or farmers then. "Fisheries are a common endowment to humanity, a global public commons.

Therefore, the sharing of this should be in an equitable and just manner. Any unbalanced or unequal agreement would bind us into current fishing arrangements which may not necessarily meet everyone's future requirements. As we discuss sustainability, it is essential that big subsidizers take greater responsibility to reduce their subsidies and fishing capacities, in accordance with the principles of 'Polluter Pays' and 'Common but Differentiated Responsibilities'," Goyal said.

Goyal said any fisheries agreement must recognise that different countries are at different stages of development and current fishing arrangements reflect their current economic capacities. "Countries like India who are yet to develop fishing capabilities, cannot be expected to sacrifice their future ambitions, while protecting those members providing huge subsidies and overexploiting fisheries resources and continue to engage in unsustainable fishing.

Therefore, it is imperative to preserve space for growth in fishing capacities of the developing world for the future without locking them into disadvantageous arrangements in perpetuity," he added. The sustainability based approach in the Overcapacity and Overfishing pillar in the current form will create significant inequity for developing countries, Goyal said. "Clearly, it will lead to capacity constraints for developing countries, while advanced nations will continue to grant subsidies.

This is unequal, unfair, unjust. If non-specific fuel subsidies are not brought under disciplines, another major disparity will be introduced by large harmful subsidies outside of all disciplines.

Giving special treatment to non-recovery of subsidies under Government-to-Government fisheries 'access agreements' is akin to cherry-picking," he added. Goyal said the sovereign rights of coastal states to explore, exploit and manage living resources within their maritime jurisdiction, enshrined in international instruments must be preserved.

"The determination by coastal states should be given primacy and not be subject to WTO dispute settlement mechanism," he said. Countries still need to cover significant ground to make the negotiating text balanced, to meet the just concerns of developing and LDC members, Goyal said, adding that India will soon submit proposals to address its concerns including incorporating 'common but differentiated responsibilities' in sharing this common endowment.

"India is committed to conclude the negotiations, so long as it provides for balancing current and future fishing needs, preserving space for equitable growth in fishing capacities in future, and effective S&DT without any imbalances," he added.

### **India: Order for Uniform Fishing Ban for the EEZ, for 2021**

[http://dof.gov.in/sites/default/files/2021-03/Fishing\\_Ban\\_Order\\_2021.pdf](http://dof.gov.in/sites/default/files/2021-03/Fishing_Ban_Order_2021.pdf)

"The President of India is pleased to impose a uniform ban on fishing by all fishing vessels in the Indian Exclusive Economic Zone (EEZ) beyond territorial waters on the East Coast [including West Bengal, Odisha, Andhra Pradesh, Puducherry, Tamil Nadu, Andaman, & Nicobar Islands] and West Coast [including Gujarat, Daman & Diu, Karnataka, Goa, Maharashtra, Kerala, Tamil Nadu and Lakshadweep Islands] as per period mentioned below for conservation and effective management of fishery resources and also for sea safety reasons:

East Coast-from 15th April to 14th June 2021 (both days inclusive) (61 days) West Coast-from 1st June to 31st July 2021 (both days inclusive) (61 days) The traditional non-motorized units shall be exempted from this uniform fishing ban imposed in the Indian EEZ beyond territorial waters. This issues with the approval of the Competent Authority. (Dibakar Mishra) Deputy Secretary to the Government of India.

### **India: Over Rs. 5,500 crore outlay so far for fisheries under Pradhan Mantri Matsya Sampada Yojana (PMMSY) says India's Economic Survey 2021-2022**

<https://www.indiabudget.gov.in/economicsurvey/>

"Fisheries sector contributes about 1.24 per cent to the country's GVA and over 7.28 per cent to the agricultural GVA. Fisheries sector has demonstrated an outstanding double-digit average annual growth of 10.87 per cent since 2014-15 with record fish production of 145 lakh tons in FY 2020-21 (provisional). In terms of employment, the sector supports the livelihood of over 28 million people in India especially the marginalized and vulnerable communities.

Export earnings from the fisheries sector was? 46,662.85 crore during 2019-20. Recognizing the significance of the fisheries sector, the Government has taken several initiatives over the years to unlock its full potential. To address the credit needs of fish farmers, the Government of India in

2018-19 extended the facility of KCC also to fisheries in addition to animal husbandry farmers to help them meet their working capital needs. For fishers and fish farmers, the working capital includes the cost of fuel, ice, labour charges, mooring/landing charges, etc.

The credit limit for the existing KCC holders is ₹ 3 lakhs, whereas the limit for new KCC holders for fisheries is only ₹ 2 lakhs. As on 31st December 2021, a total of 1,04,157 KCCs have been issued to fishers and fish farmers and an additional 5.04 lakh applications from fishers and fish farmers are with the banks at various stages of issuance. Further, the Government launched a new flagship scheme of ₹ 20,050 crores called Pradhan Mantri Matsya Sampada Yojana (PMMSY) in May 2020 as a part of the ANB Package.

Under PMMSY, key interventions include enhancing fish production and productivity, modernizing and strengthening the value chain, creating fisheries and post-harvest infrastructure and developing robust fisheries management and regulatory frameworks.

Moreover, emphasis is laid on addressing critical gaps in the value chain through technology infusion, optimal water management to achieve 'more crop per drop', improved quality and hygiene of fish and fish products, insurance, value addition, demand-based branding and marketing and promotion of initiatives bringing economic returns for stakeholders.

Additionally, the scheme prioritizes sustainability and traceability from 'catch to consumer' for augmenting fisheries exports and maintaining competitiveness in the global markets. The scheme aims to create a conducive environment for private sector participation and promotes the dynamic development of innovative entrepreneurial ventures and viable business models in the fisheries sector.

By December, 2021, under PMMSY, proposals with an outlay of ₹ 11295.12 crores have been received from various States/UTs against which the project proposals with total outlay of ₹ 5584.74 crores have already been approved with ₹ 1975.63 crore as the share of the Centre.

### **India: Parliamentary panel raps govt for slow progress in fisheries infra development fund scheme**

<https://www.outlookindia.com/newscroll/par-panel-raps-govt-for-slow-progress-in-fisheries-infra-development-fund-scheme/2048564>

"A Parliamentary panel on Wednesday pulled up the government for slow progress made in implementation of an infrastructure development fund for fisheries and aquaculture, saying only projects worth Rs 2,171.32 crore have been approved even after three years since the inception of the fund. "

"It clearly reflects that this scheme has not progressed in the desired manner," the Parliamentary Standing Committee on Agriculture said in its 27th report on the Demands for Grants (2021-2022) of the Ministry of Fisheries, Animal Husbandry and Dairying, tabled in Parliament. In the 2018-19 fiscal, the government had created the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) with a corpus of Rs 7,522.48 crore for improving fishery

infrastructure in the country. Under the FIDF, concessional finance is provided for development of fisheries infrastructure through interest subvention of up to 3 per cent per annum.

Stating that funding under the FIDF is expected to fill large infrastructural gaps in the fisheries sector, the committee recommended the ministry to pursue this matter with the state governments and encourage them to avail loan under the FIDF for improvement of fishery infrastructure. The committee also asked the ministry to hold a wider publicity campaign about the scheme so that intended beneficiaries (both individuals and state governments) may reap the full benefits, the report added.

According to the report, the Central Approval and Monitoring Committee (CAMC) constituted under the FIDF has approved projects to the tune of Rs 3,644.78 crore with project cost restricted to Rs 2,171.32 crore for interest subvention as per the FIDF guidelines. The Committee observed that no expenditure could be made under FIDF in the 2019-20 fiscal as no state availed loan from NABARD or other entities, the report added.

On seaweed cultivation, the panel said there is huge employment potential and asked the government to devise concrete action plans to fully exploit the scope of seaweed cultivation in the country. India has 844 species of seaweeds out of which about 60 species are commercially important ones.

However, at present only 2 to 3 seaweed species are being cultivated on a commercial scale in India, mainly concentrated in Tamil Nadu and Gujarat and to a small extent in Odisha and Maharashtra.

The newly launched fisheries flagship scheme Pradhan Mantri Matsya Sampada Yojana (PMMSY) provides for focused development and promotion of seaweed cultivation and value chain with requisite financial allocations. Under PMMSY, seaweed production target of 11.20 lakh tonnes over a period of five years from 2020-21 to 2024-25 has been set.

### **India: Pearl earnings: why mussel farming is booming amid lockdown in India**

<https://thefishsite.com/articles/pearl-earnings-why-mussel-farming-is-booming-amid-lockdown-in-india>

"Bibhuti Bhusan Mohanty had been working in Dubai for the past two years. The 25-year-old engineer had planned to settle abroad before the lockdown forced him to change his plans. Mohanty returned to his village in Nimigan, in Odisha's Ganjam district, in early 2020. Unable to find a job, he was fiddling with his mobile phone one day when he came across a video of people in his area farming freshwater pearls.

"I became inquisitive about it as soon as I saw the video. I then searched on the internet to get more info about pearl culture. It was really surprising to see how pearl farming was offering lucrative livelihoods to farmers in our state," he says. He then contacted the ICAR-Central

Institute of Freshwater Aquaculture (CIFA), an advanced research institute, who then connected him with a local farmer for guidance.

Bibhuti undertook a training programme and then stocked around 3,000 freshwater pearl mussels (*Lamellidens marginalis*) in his pond. It will take another year before the mussels create pearls for him but he has dropped his plans of emigrating and has decided to settle in his village to farm pearls. “It’s useless to waste time abroad, or even in other cities of India, when a handsome income can be made in your native village,” he says.

Many ponds that have been used for cultivating Indian major carp are suitable for producing pearls. Rectangular ponds without aquatic macrophytes and algal blooms such as *Microcystis* and *Euglena* are suitable for pearl culture. Two half-acre earthen ponds or a single pond of 1 acre, with a depth of 1-2.5m, is suitable for farming the mussels.

As a result, it is no surprise that Bibhuti is not alone. Several hundred people who have returned to Odisha during the pandemic have shed their plans to emigrate in favour of doing something potentially lucrative – such as pearl farming – in their native villages.

However, those interested are advised to take a number of factors into account before starting. A pH in the range of 7 to 8 is favourable because pearl mussels require more calcium for the secretion of nacre. Water temperature is also an important factor in the mussels’ growth and reproduction, and the process of pearl formation in mussels’ body cavities requires a temperature in the range of 25-30°C.

Farmers should know the biology and food requirements of the mussels. Careful pond management is needed, particularly in terms of natural food production, and the water must be disease free. The management of water quality, through liming or fertilisation, is particularly important during the culture period, as it affects the quality and quantity of the pearls. There should also be algal culture facilities in the mussel farm.

The hanging bags which contain the implanted mussels should be cleaned fortnightly and any dead mussels should be immediately removed. Scientists at ICAR-CIFA say that they have been flooded with calls from people interested in starting pearl farming since lockdown was imposed. “The concept of pearl farming is nothing new. It has been there for the past two decades. But people hardly took any interest and we used to receive fewer queries

But the pandemic changed everything. Since March, when the lockdown was announced in India, our phones have not stopped buzzing. We are receiving around 20 to 30 calls every day, whereas it was just three to four calls prior to the lockdown,” says Dr Saroj Kumar Swain, director of ICAR-CIFA in Bhubaneswar, the state capital of Odisha. He also believes that social media has been playing a major role in spreading awareness of pearl culture, especially among the younger generation.

“Earlier, we used to provide physical training, where a batch of only 20 people could be accommodated, but it was stopped during lockdown. We then decided to make short videos on pearl farming and uploaded them on YouTube. It proved to be a game-changer and they started

getting massive viewership. On an average, each video began to garner around 30,000 views and even higher,” he adds. “We also started conducting virtual classes in September and have now trained around 3,700 people on pearl culture from across the country. The videos also come in handy to explain about releasing mussels in freshwater ponds and maintaining them.”

### Creating the pearl

The pearl mussels are generally caught from freshwater bodies and a small surgical insertion is then made, in order to implant a nucleus inside the mussel, around which a pearl is created. “A small surgery is done to insert round nucleus or irritant inside the gonad together with a piece of mantle.

When inside the body of a living mussel, the piece of mantle merges with the wall of the gonad through a connective tissue. They are carefully opened by the means of speculum of around 1cm wide, without causing injury to the adductor muscle and its soft parts,” says Sweta Pradhan, a scientist working in pearl culture at ICAR-CIFA.

“After implantation, the mussels are kept in post-operative care units that are normally ferrocement tanks (200 litres) filled with aged tap water and 50 nylon bags (12cm<sup>2</sup>) arranged in two rows, suspended at a depth of 20cm. The units are daily examined and the dead mussels and the ones that reject the nucleus are removed. After post-operative care these mussels are stocked in the ponds. It normally takes a year before the mussel creates a pearl.”

Some farmers have become so advanced and knowledgeable in pearl culture that they make the surgical insertions by themselves and also offer consultancy to other farmers. Akshay Pradhan, who lives at Dimbiria village in Ganjam district, does pearl culture in his own pond and also acts as a consultant for other budding farmers. “The farmers contact me for surgical implants regularly. I also provide consultancy to them regarding the pearls and releasing them in ponds,” he says.

The 41-year-old, who started pearl farming around a decade ago, claims to have been earning around Rs 4 lakh (around US\$5,400) annually by making round and designer pearls. He travels across the country to sell pearls to dealers, which are then normally used in ornaments. Akshay says that he will soon dispatch a consignment of pearls to Iraq. However, he points out that pearl culture isn't without its challenges.

“Most of people jump into pearl culture considering it to be a lucrative profession, but they fail to follow the proper regimes like providing food (such as plankton) and changing the water, which is required only in the case of tanks to maintain the pH and ammonia levels. Carelessness in following these practices often results in severe losses.

Some even try to do surgical implants themselves, which results in severe mortality initially, but it comes with experience and regular practice.” Dr Swain points out that ICAR-CIFA is now focusing on promoting captive breeding of the mussels.

“At present, the mussels are caught from natural water bodies and sold to farmers. But the supply still falls short of the huge demand. We are trying to promote captive breeding to increase the supply,” he says.

### **India: Pearl Farming: Earn in lakhs with the help of government subsidy**

<https://krishijagran.com/agripedia/pearl-farming-earn-in-lakhs-with-the-help-of-government-subsidy/>

"Pearl Farming is one of the most lucrative Aqua culture businesses and the government is encouraging farmers to take up this farming. The government is providing subsidy for cultivating pearls. Due to lack of supply as compared to the demand of pearl, its price is high. In such a situation, it is the effort of the government that farmers should start cultivation of pearls through scientific method.

#### Government subsidy for pearl farming

Considering the scope of pearl farming, the Department of Fisheries has included a sub-component for pearl culture in the Blue Revolution scheme for encouraging the sector. All the States / UTs were requested to promote the pearl farming in the States availing the financial assistance from the Department of Fisheries under the Blue Revolution scheme.

#### Government subsidy for pearl farming under pradhan mantri matsya sampada yojana

The Department of Fisheries under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) envisages for promoting Bivalve cultivation including pearl culture in India as diversified aquaculture practice. This component has been included for promoting pearl culture both in marine and freshwater. The unit cost for bivalve cultivation including pearl culture is Rs. 0.2 lakh per unit which includes the capital cost and one-time input and operational cost. The beneficiaries have to obtain necessary permission for allotment of sea area by the respective State Governments / UTs as per the prevailing leasing policy.

#### How to take benefit of the centrally sponsored subsidy for pearl farming

The beneficiaries are required to prepare a self-contained proposal indicating techno financial details together with documentary evidence of necessary permission and technical know-how. Governmental financial assistance is restricted to 5 units for individual farmer/beneficiary; 50 units for fishermen/fisherwomen Cooperative Societies, SC/ST Cooperative Societies, Women SHGs, etc having at least 10 members.

The proposal is to be routed through the concerned State Govt/UT Administration with clear recommendations. Detailed guidelines in respect of CSS have been uploaded in this Department's website: [www.dof.gov.in](http://www.dof.gov.in) and [www.nfdb.gov.in](http://www.nfdb.gov.in)

On approval of the project/proposal, the admissible central financial assistance under the scheme would be released in installments and the size & number of installments shall be decided keeping

in view the magnitude of the project and the quantum of total central assistance, availability of financial resources, funds absorbing capacity of the project implementing agency and assessment of the progress of the project. Preferably, the first installment of central share shall be recommended by the SPAC/SPSC and released on approval of the proposal.

### **India: Plans deep seabed mining, concerns about marine biodiversity emerge**

<https://scroll.in/article/999265/as-india-plans-deep-seabed-mining-concerns-about-marine-biodiversity-emerge>

"The country aims to develop an integrated system for mining polymetallic nodules from 6,000-metre depth in the central Indian Ocean. Similar to some other countries such as China, the quest for minerals in the deep sea has been on India's radar for some time now. In June, it got a significant boost as the Indian government approved a "Deep Ocean Mission" to explore the ocean for resources and develop deep-sea technologies for sustainable use of ocean resources. But the move towards deep seabed mining has also reignited concerns that many environmental organisations have been pointing out over the potential harm it could cause to marine biodiversity.

The proposal of the Indian government's Ministry of Earth Sciences was cleared by the Cabinet Committee on Economic Affairs led by Prime Minister Narendra Modi with an estimated cost of about Rs 4,077 crore for a period of five years. It is scheduled to be implemented in a phase-wise manner and would focus on the development of technologies for deep-sea mining, and manned submersible which will be developed to carry three people to a depth of 6,000 metres in the ocean with a suite of scientific sensors and tools. At present, only a very few countries have acquired this capability.

The government said an integrated mining system will be also developed for "mining polymetallic nodules from 6,000-metre depth in the central Indian Ocean". India will focus on exploring and identifying potential sites of "multi-metal hydrothermal sulphides mineralisation along the Indian Ocean mid-oceanic ridges". "The exploration studies of minerals will pave way for the commercial exploitation in the near future, as and when commercial exploitation code is evolved by the International Seabed Authority, a United Nations organisation," said the government.

"This component will help the blue economy priority area of exploring and harnessing of deep-sea minerals and energy." According to the government, the mission will also focus on the development of ocean climate change advisory services to support coastal tourism, off-shore energy development, exploration and conservation of deep-sea biodiversity and an advanced marine station for ocean biology.

"Bio-prospecting of deep-sea flora and fauna including microbes and studies on sustainable utilisation of deep-sea bio-resources will be the main focus," said the government. The government states that about 95% of the deep ocean remains unexplored and thus the mission is crucial to ensuring India's mineral and energy security.

The country is covered by the deep sea from three sides and has a 7,517 km long coastline and 1,382 islands. About 30% of India's population is living in coastal areas and thus the ocean is a "major economic factor supporting fisheries and aquaculture, tourism, livelihoods and blue trade". "Oceans are also a storehouse of food, energy, minerals, medicines, modulator of weather and climate and underpin life on Earth," said the government.

The United Nations has already declared 2021-2030 as the decade of ocean science for sustainable development. In March 2021, India's Minister for Earth Sciences Harsh Vardhan had told the Parliament that India has been granted "exclusive rights of exploration under the contracts signed with International Seabed Authority in 2002 and 2016 for exploration of polymetallic nodules in Central Indian Ocean Basin and polymetallic sulfides in the southwest Indian Ocean respectively".

#### India's deep-sea exploration

India has been among the pioneer countries to work on the deep-sea exploration of minerals. It started at least 40 years ago, in January 1981, when the Indian Research Vessel Gageshni recovered the first polymetallic nodule samples from the Indian ocean. It was followed by the formulation of a national Polymetallic Nodules program that led to India getting the pioneer investor status with exploration rights over an area of 1,50,000 square kilometres in the Central Indian Ocean Basin under the UN Convention on Law of the Sea.

Subsequently, through periodic relinquishments, an area of 75,000 kilometres square has been retained by India as per the contract with the International Seabed Authority. The polymetallic nodules contain valuable minerals such as manganese, iron, nickel, copper, cobalt and others. But mining for those won't be easy because at present, according to the government, the technologies required for deep-sea mining have strategic implications and are not commercially available.

According to the International Union for Conservation of Nature, deep-sea mining is the process of retrieving mineral deposits from the deep sea, which is at a depth of 200 metres below the ocean and covers about 65% of the earth's surface. The IUCN states that the interest in the mineral deposits of the deep sea is growing and is mainly because of "depleting terrestrial deposits for metals such as copper, nickel, aluminium, manganese, zinc, lithium and cobalt, coupled with rising demand for these metals to produce high-tech applications such as smartphones and green technologies such as wind turbines, solar panels and electric storage batteries".

Madhavan Rajeevan, who is the secretary of the Union ministry of earth sciences, emphasised that the protection of marine biodiversity as well as ensuring the mineral security of India are two main pillars of India's deep-sea mission. "We are aware of apprehensions and fears about destruction of the marine biodiversity due to deep-sea exploration including mining activities.

We want to ensure that there is a balance between the two," Rajeevan told Mongabay-India. In fact, India realised the need for evaluation of environmental data for prediction of the potential impact of mining on the marine ecosystem and, in 1996, started the project on environmental

impact assessment for nodule mining in the Central Indian Ocean Basin. Rajeevan said that the Indian government's National Institute of Oceanography in Goa is already conducting work to understand the impact of deep-sea exploration including mining on marine biodiversity.

“At present, deep seabed mining is governed by the International Seabed Authority that has not allowed commercial mining so far – only the exploration is allowed at the moment,” he said. “The international authority knows about environmental concerns and is exploring ways to establish the criteria for allowing commercial mining.” “They are asking all stakeholders to conduct proper studies to assess the environmental impact,” he said. “We have a balanced view on the issue. Even if commercial mining is allowed, it is still a few years away.”

In fact, in 2020, the Indian government proposed to conduct technical trials in 2021, for “demonstration of its polymetallic nodule collector pre-prototype deep-sea mining machine” in the Central Indian Ocean Basin. According to the ministry, the objective of the trial is to test the capability of the machine in terms of locomotion, crushing, pumping and discharge within a limited area on the seabed. The ministry also wants to collect “environmental data before and after the trials as well as over a period of time to assess the extent of the impact on physicochemical and biological conditions”.

However, the trial is yet to take place. According to Rajeevan, “the manned submersible is in early-stage ... but deep-sea mining system is in advanced stage” and is already being tested. The deep ocean mission announced by the government gives a new boost to the development of India's deep-sea mining system, which has been going on since 2012.

### Biodiversity concerns

As countries across the world including India gear up to mine the deep seabed for minerals, there is a growing number of organisations across the world that are seeking a moratorium or pause to such plans until marine biodiversity concerns are assessed and addressed. The IUCN stresses that the concern is that the scraping of the seafloor and pollution from mining processes can wipe out entire species – many of which are yet to be discovered.

It says the environmental impact assessments, effective regulation and mitigation strategies are needed to limit the impacts of deep-sea mining. On June 29, Jessica Battle, who is the leader of the World Wildlife Fund's No Deep Seabed Mining Initiative, in a statement, said that “World Wildlife Fund urges International Seabed Authority member states to show ocean leadership by putting in place a moratorium on deep seabed mining now.”

“It is imperative to pause the unnecessary rush to the deep and allow science and innovation to help us switch to a truly sustainable economy,” she said. “Governments will be supported by an increasing number of scientists, NGOs, civil society organizations, companies and communities to make that decision. Forcing the regulations through prematurely and without due process or enough scientific knowledge about the deep-sea is not in line with the precautionary approach and other principles of international environmental law.”

World Wildlife Fund's statement came in response to the small island state Nauru invoking a rule that fast tracks deep seabed mining via a request to the International Seabed Authority. World Wildlife Fund's report in February 2021, "In Too Deep", stated that deep seabed mining is expected to have destructive effects on vulnerable deep-sea ecosystems, lead to loss of biodiversity and species extinction.

It also talks about the impact of seabed destruction on global fisheries and says it could threaten carbon and nutrient cycles in the ocean. It warns that negative effects on global fisheries would threaten the main protein source of around one billion people and the livelihoods of around 200 million people, many in poor coastal communities. "We are also in the midst of a global pandemic, making it difficult for states to meet to properly discuss.

At a time when states need to collaborate perhaps more than ever, this move is a blow to the multilateralism we need to solve the combined climate and biodiversity crises," Battle cautioned. She alleged that the deep seabed mining lobby is "selling a story – without evidence – that seabed mining is less harmful than land mining, and that companies need deep seabed minerals in order to produce electric cars, batteries and other items that reduce carbon emissions".

Mary Abraham, a development economist and policy scientist, told Mongabay-India that she fears that the "impact of deep-sea mining could be unprecedented and spell huge trouble for marine ecology". Abraham, who has carried out extensive research on mining issues across Indian states including those in the coastal region, said that their studies had shown how mining exploited resources in states such as Goa and led to large-scale degradation of the environment.

"Mining in the coastal states has been a major threat to the pristine coastal ecosystems," said Abraham, who works with TERI. "In several cases, the political and social pressure led to mining projects being abandoned or denied permission as the companies failed to get a social license – basically failed to find ongoing approvals and acceptance of the local communities. But in oceans, they will not need any social license and there won't be any stringent checks and balances."

"The plans for deep-sea mining – whether of India or any other country – are a cause of serious worry," she said. "The ecosystem of the oceans is very sensitive – they run the planet." "I shudder at the thought of the destruction this thirst for minerals could bring," she said. "Why can we not focus on recycling, reusing and efficiently using whatever resources we have over the surface."

A recent statement, signed by 351 marine science and policy experts from 44 countries, has also called for a pause to deep seabed mining. They said deep-sea mining would result in the loss of biodiversity and ecosystem functioning that would be irreversible on multi-generational timescales.

### **India: PM Matsya Sampada Yojana (PMMSY) 2021 Operational Guidelines**

<https://themiracletech.com/latest/neeli-kranti-pm-matsya-sampada-yojana-pmmsy-2021-operational-guidelines/>

"Prime Minister Modi has digitally launched PM Matsya Sampada Yojana on 10 September 2020 in Bihar. Central govt. had earlier released operational guidelines of scheme on 30 June 2020 at [dof.gov.in](http://dof.gov.in). For this purpose, Indian govt. has made an investment of Rs. 20,050 crore comprising of Rs. 9407 crore of central share, Rs. 4,880 crore of state share and Rs. 5763 crore of beneficiaries contribution.

The PMMSY operational guidelines will help states in speedy implementation of the scheme for FY 2020-2021 to FY 2024-2025 as a part of Atmanirbhar Bharat Package. e-Gopala App, a comprehensive breed improvement marketplace and information portal for direct use of farmers has also been launched. Under PM Matsya Sampada Scheme, govt. is going to turn India into a hotspot for fish and aquatic products. This would be done through appropriate policy, marketing and infrastructure support.

PM Matsya Sampada Yojana will promote aquaculture by ensuring easy access to credit. Moreover, the central govt. also intends to bring all fishermen under the coverage of all farmer welfare programmes and social security schemes with expanded coverage for accident insurance. PMMSY will be implemented over a period of 5 years from FY 2020-2021 to FY 2024-2025 in all States/Union Territories.

PMMSY with diverse interventions along the fisheries value chain would revolutionise the fisheries and aquaculture sector and steer it to next level. Moreover, this scheme with an array of 100 diverse activities is by far the largest investment in fisheries sector. This scheme will bring Blue Revolution through sustainable and responsible development by addressing critical infrastructure gap in fisheries sector.

#### PRADHAN MANTRI MATSYA SAMPADA YOJANA (PMMSY) 2021

PM Modi led central govt. is committed towards “Blue Revolution” or “Neeli Kranti”. India has the potential to achieve 1st place in the world in production of fish. So, the Union Cabinet has approved the launch of a new PM Matsya Sampada Yojana 2021 to promote aquaculture. The govt. has already constituted a separate department for integrated development of fisheries. The official website for Department of Fisheries in India is <http://dof.gov.in/>. Check the complete details of the scheme and operational guidelines in this article.

#### AIMS AND OBJECTIVES OF PMMSY

The following are the main aim and objectives of PM Matsya Sampada Yojana 2021:-

- Harnessing of fisheries potential in a sustainable, responsible, inclusive and equitable manner.
- Enhancing of fish production and productivity through expansion, intensification, diversification and productive utilization of land and water.
- Modernizing and strengthening of value chain – post-harvest management and quality improvement.

- Doubling fishers and fish farmers incomes and generation of employment.
- Enhancing contribution to Agriculture GVA and exports.
- Social, physical and economic security for fishers and fish farmers.
- Robust fisheries management and regulatory framework.

## BENEFITS OF PM MATSYA SAMPADA YOJANA

The central govt. has also created a special fund to develop infrastructure related to fishing industry. This fund would be used for creation of fisheries infrastructure facilities both in marine and inland fisheries sectors. The central govt. has targeted to achieve its target of additional 70 lakh tonnes fish production by FY 2024-2025.

The govt. aims to reach additional Rs. 1 lakh crore in fisheries exports and generate 55 lakh employment opportunities over next 5 years. Union govt. is also focusing on reducing post-harvest losses from 20-25 per cent to about 10 per cent. FIDF fund would be used to attract private investment in creation and management of infrastructure facilities. Moreover, govt. will also focus on acquisition of the state-of-the-art technologies.

FIDF is going to provide concessional Miracle to state govt, cooperatives, individuals and entrepreneurs. This Miracle would be used to take up identified investment activities of fisheries development. Under FIDF, loan lending would be over a period of five years from 2018-19 to 2022-23. The maximum repayment will be over a period of 12 years inclusive of moratorium of 2 years on repayment of principal.

## NEED FOR PM MATSYA SAMPADA YOJANA

Fisheries and aquaculture are an important source of food, nutrition, employment and income in India. These sectors provides livelihood to more than 20 million fishermen and fish farmers at the primary level and twice the number along the value chain. Fish being an affordable and rich source of animal protein is one of the healthiest options to mitigate hunger and malnutrition. Central Government Schemes 2021 Popular Schemes in Central: Pradhan Mantri Awas Yojana Narendra Modi Schemes List NREGA Job Card List The Gross Value Added (GVA) of fisheries sector in the national economy during 2018-19 stood at Rs 2,12,915 crores (current basic prices) which constituted 1.24% of the total National GVA and 7.28% share of Agricultural GVA.

The sector has immense potential to double the fishers and fish farmers incomes as envisioned by government and usher in economic prosperity. Fisheries sector in India has shown impressive growth with an average annual growth rate of 10.88% during the year from 2014-15 to 2018-19. The fish production in India has registered an average annual growth of 7.53% during last 5 years and stood at an all-time high of 137.58 lakh metric tons during 2018-19.

The export of marine products stood at 13.93 lakh metric tons and valued at Rs. 46,589 crores (USD 6.73 billion) during 2018-19. Foreseeing the immense potential for development of fisheries and for providing focused attention to the sector, the Government in its Union Budget, 2019-20 has announced a new scheme, the Pradhan Mantri Matsya Sampada Yojana (PMMSY).

The scheme intends to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernization and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers'

welfare. It would also address issues like low productivity in inland Aquaculture, disease, sustainability of marine fisheries, sanitary and phyto-sanitary matters that impact the competitiveness of India's exports along with global bench marking.

#### COMPONENTS OF PM MATSYA SAMPADA YOJANA (PMMSY)

The PMMSY will be implemented as an umbrella scheme with 2 separate components which are as follows:- A) Central Sector Scheme (CS): Under the PMMSY central sector (CS) component, govt. has earmarked an amount of Rs. 1720 crore. B) Centrally Sponsored Scheme (CSS): Under the PMMSY Centrally Sponsored Scheme (CSS) Component, an investment of Rs. 18330 crores has been envisaged.

This investment is segregated into Non-beneficiary oriented and Beneficiary orientated sub-components / activities under the following 3 broad heads. These are Enhancement of Production and Productivity, Infrastructure and Post-harvest Management, Fisheries Management and Regulatory Framework.

#### PMMSY SCHEME IMPLEMENTATION GUIDELINES

Most of the activities under the PM Matsya Sampada Yojana would be implemented with active participation of States / UTs. A well-structured implementation framework would be established for effective planning and PMMSY implementation. Here are the full implementation guidelines:-

- For optimal outcomes, Cluster or area-based approach would be followed for PMMSY Scheme with requisite forward and backward linkages and end to end solutions. The suitable linkages and convergence will be fostered with other centre and state government schemes wherever feasible.
- Various new and emerging technologies like Re-circulatory Aquaculture Systems, Biofloc, Aquaponics, Cage Cultivation etc. would be given thrust to enhance production and productivity, quality, productive utilization of waste lands and water for Aquaculture.

- Special focus on Coldwater fisheries development and expansion of Aquaculture in Brackish Water and Saline Areas.
- Activities like Mariculture, Seaweed cultivation and Ornamental Fisheries would be promoted as these activities have potential to generate huge employment opportunities.
- Focused attention would be given for fisheries development in Jammu and Kashmir, Ladakh, Islands, Northeast, and Aspirational Districts through area specific development plans.

- Govt. will promote high value species, establishing a national network of Brood Banks for all commercially important species, Genetic improvement and establishing Nucleus Breeding Center for self-reliance in Shrimp Brood stock, organic aquaculture promotion and certification, good aquaculture practices, end to end traceability from 'catch to consumer', use of Block Chain Technology, Global Standards and Certification, Accreditation of Brood banks, Hatcheries, Farms, residues issues and aquatic health management supported by a modern laboratory network.

- In PMMSY scheme, development of Coastal fisher communities would be done in a holistic manner through integrated modern coastal fishing villages with necessary infrastructure. - Collectivization of fishers and fish farmers through Fish Farmer Producer Organizations (FFPOs) to increase bargaining power of fishers and fish farmers is a key feature of PMMSY. - Aquaparks as hub of fisheries and aquaculture activities with assured, affordable, quality inputs under one roof, post-harvest infrastructure facilities, business enterprise zones, logistic support, business incubation centers, marketing facilities etc.

- Insurance coverage for fishing vessels has been introduced for the first time. Annual Livelihood support for fishers during ban/lean period would be provided. - Well-structured extension support services are envisaged under PMMSY. Youth would be engaged in fisheries extension by creation of 3347 Sagar Mitras in coastal fisher villages. Besides, large number of Fisheries Extension Services Centers would be set up in private space to create job opportunities to young professionals.

- Major investments in construction and modernization of Fishing Harbours and Landing centers for hygienic handling of fish, urban marketing infrastructure to deliver quality and affordable fish, development of state of the art whole sale fish markets, retail markets. E-marketing and E-trading of Fish etc.

- Support will be provided for safety and security of fishers at sea, acquisition of technologically advanced fishing vessels for fishermen for promotion of deep-sea fishing, upgradation of Fishing vessels for improving the export competitiveness, communication and/or tracking devices and Bio-toilets in fishing vessels.

- Private sector participation would be promoted for the development of entrepreneurship, business models, promotion of ease of doing business, innovations and innovative project activities including start-ups, incubators etc. in fisheries sector.

#### MAJOR IMPACT OF PM MATSYA SAMPADA YOJANA (PMMSY)

Here is the major impact of Pradhan Mantri Matsya Sampada Yojana 2021:- 1) Enhancing fish production from 137.58 lakh metric tons (2018-19) to 220 lakh metric tons by 2024-25. 2) Sustained average annual growth of about 9% in fish production 3) An increase in the contribution of GVA of fisheries sector to the Agriculture GVA from 7.28% in 2018-19 to about 9% by 2024-25. 4) Double export earnings from Rs.46,589 crores (2018-19) to about Rs.1,00,000 crores by 2024-25.

5) Enhancing productivity in aquaculture from the present national average of 3 tonnes to about 5 tonnes per hectare. 6) Reduction of post-harvest losses from the reported 20-25% to about 10%. 7) Enhancement of the domestic fish consumption from about 5-6 kg to about 12 kg per capita. Generate about 55 lakhs direct and indirect employment opportunities in the fisheries sector along the supply and value chain.

#### LAUNCH OF PMMSY SCHEME IN BIHAR

The event of official launch of PMMSY scheme was held through digital mode on 10 Sept 2020. PM Office said that the investment of Rs. 20,050 crore under PMMSY is the highest ever in the fisheries sector. The project in Bihar envisages investment of Rs. 1,390 crore with the central share of Rs. 535 crore and the additional fish production target pegged at three lakh tons.

During the current fiscal, the Union government has sanctioned Bihar's proposal costing Rs 107 crore. PM Modi has also announced the establishment of a fish brood bank at Sitamarhi and of aquatic disease referral laboratory at Kishanganj, for which assistance has been provided under the PMMSY. These facilities will help in enhancing production and productivity of fish by ensuring timely availability of quality and affordable fish seed for the fish farmers and address the need for disease diagnosis as well as water and soil testing facilities.

## E GOPALA APP DOWNLOAD FROM GOOGLE PLAY STORE

The e-Gopala app is a comprehensive breed improvement marketplace and information portal for direct use of farmers. At present no digital platform is available in the country for farmers managing livestock including buying and selling of disease free germplasm in all forms, availability of quality breeding services and guiding farmers for animal nutrition, treatment of animals using appropriate medicine.

There is no mechanism to send alerts on due date for vaccination, pregnancy diagnosis and calving among other issues and inform farmers about various government schemes and campaigns in the area. The e-Gopala app will provide solutions to farmers on all these aspects. The prime minister has also inaugurated one-unit fish feed mill at Madhepura and two units of 'Fish on Wheels' assisted at Patna under 'blue revolution'.

Among other launches by Modi is the comprehensive fish production technology centre at Dr Rajendra Prasad Central Agricultural University in Pusa in Bihar. The centre with facilities for seed production technology and demonstration unit technology for fish, referral laboratory and diagnostic testing, will facilitate in boosting fish production and assist in capacity building of fish farmers, the PMO said.

## PRADHAN MANTRI MATSYA SAMPADA YOJANA FAQs

Here are the most frequently asked questions (FAQs) for PM Matsya Sampada Yojana 2021:- 1) What is PM Matsya Sampada Yojana? To promote aquaculture and fisheries sector, govt. has approved Pradhan Mantri Matsya Sampada Yojana 2021. This scheme intends to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernization and strengthening of value chain.

Moreover, govt. will focus on traceability, establishing a robust fisheries management framework and fishers welfare. It would also address issues like low productivity in inland Aquaculture, disease, sustainability of marine fisheries, sanitary and phyto-sanitary matters that impact the competitiveness of India's exports along with global bench marking. 2) Who will Benefit from PMMSY Scheme? Fishers, Fish farmers, Fish workers, Fish vendors, SCs/STs/Women/Differently abled persons, Fisheries cooperatives/Federations, FFPOs,

Fisheries Development corporations, Self Help Groups (SHGs)/Joint Liability Groups (JLGs) and Individual Entrepreneurs.

3) How PMMSY Scheme bring Blue Revolution? PMMSY scheme will bring Blue Revolution through sustainable and responsible development by addressing critical infrastructure gap in fisheries sector. 4) What is the Share of Central / State Govt. in PMMSY? Indian govt. has made an investment of Rs. 20,050 crore comprising of Rs. 9407 crore of central share, Rs. 4,880 crore of state share and Rs. 5763 crore of beneficiaries contribution.

5) What is the Start Date / Last Date for PMMSY Scheme? The cabinet committee of Economic Affairs (CCEA) of Indian government had approved the launch of Pradhan Mantri Matsya Sampada Yojana on 20 May 2020. Launch Date is 11 September 2020. 6) What is the Official Apply Online Website for PM Matsya Sampada Yojana?

Only after the official launch of the scheme, you would be able to access PM Matsya Sampada Yojana official portal and then would be able to apply online for PM Matsya Sampada Yojana. For more details, click the link – <http://dof.gov.in/pmmsy>

The operational guidelines for Pradhan Mantri Matsya Sampada Yojana can be checked using the link below:- <http://dof.gov.in/sites/default/files/PMMSY-Guidelines24-June2020.pdf>

**India: PMMSY with the objectives of bringing about sustainable and responsible development of fisheries sector in India for a period of five years with effect from the financial year 2020-21 to FY 2024-25 in all States/Union Territories(UTs)**

<https://orissadiary.com/department-of-fisheries-ministry-of-fisheries-animal-husbandry-dairying-implements-a-flagship-scheme-pradhan-mantri-matsya-sampada-yojana-pmmsy/>

"The Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying is implementing a flagship scheme Pradhan Mantri Matsya Sampada Yojana (PMMSY)- with the objectives of bringing about sustainable and responsible development of fisheries sector in India for a period of five years with effect from the financial year 2020-21 to FY 2024-25 in all States/Union Territories(UTs).

The scheme intends to address the critical gaps in fish production and productivity & quality, in the technology being used in post-harvest infrastructure and management, in modernisation and strengthening of value chain, and in establishing a robust fisheries management framework and fishers' welfare.

Implementation of the PMMSY commenced during middle of 2020-21. Under PMMSY during 2020-21 to 2021-22 Department of Fisheries has accorded approval of project proposals to the tune of Rs. 5336.96 crores with a central share of Rs. 1823.5 crores to States/UTs and other implementing agencies. An amount of Rs. 1700 crore has been allocated during 2020-21 (RE) and 2021-22 (BE) under PMMSY.

An amount of Rs. 1223.96 crore has been released to various States/UTs and other implementing agencies from 2020-21 to 2021-22 (till date). The cumulative number of beneficiaries covered during 2020-21 and current financial year under Pradhan Mantri Matsya Sampada Yojana is 942761.

PMMSY inter alia focuses on enhancing fish production and productivity by harnessing the unrealized potential of public ponds, reservoirs and such other water bodies in the inland fisheries sector, by developing aquaculture and mariculture through expansion, intensification, diversification & technological infusion such as cage culture, RAS & Biofloc, by making available quality inputs such as seed & feed through development of broodbanks, hatcheries & feed mills and by setting up an aquatic animal health management system.

The scheme also aims to improve value addition through development of standards for sustainability and traceability in the fisheries sector, through development of a robust post-harvest infrastructure and management, modernization and strengthening of the marketing infrastructure, through enhancement of export competitiveness of fisheries products and through establishing a robust fisheries management and regulatory framework. This information was given by The Minister of Fisheries, Animal Husbandry & Dairying, Parshottam Rupala, in the Lok Sabha in a written reply today.

### **India: Post-harvest digitisation: a game-changer for Indian aquaculture**

<https://thefishsite.com/articles/post-harvest-digitisation-a-game-changer-for-indian-aquaculture>

"It's high time that technology is used to connect buyers and sellers, and to make the value chain more prosperous and resilient. While 95 percent of the shrimp produced in the country is consumed outside of India, almost all the farmed fish is sold for domestic consumption. Most shrimp farmers rely on local dealers for price quotes, quality checks and selling their produce, as they don't have direct access to processors.

As a rule, the local dealers are dictating the prices, based on the requirements of exporters/processors, and encourage the farmers to harvest at certain times. The final price is at the discretion of the local dealer, which handicaps the farmers' opportunity to negotiate. As a result, they often sell their products for meagre profits, barely breaking even in some situations. Meanwhile, fish farmers often face a tougher situation because their produce mostly goes for domestic consumption, where it relies on chaotic post-harvest value chains between the farm and the local markets, a lack of price transparency and poor access to dealers.

Fish farmers regularly trade their fish in local markets and end up with marginal profits. The blind spot for farmers is their lack of knowledge with respect to pricing, and their poor comprehension of market demands and dynamics. Additionally, the farmers' approach to business makes them more vulnerable to the slightest market fluctuations. By the same token, processors, exporters and retailers are also defenceless against value chain inefficiency.

Their reliance on local buyers to fulfill their procurement needs and to source material puts them in a tricky situation. The biggest challenge is that neither the producers nor the buyers are

directly participating in post-harvest intervention. In other words, there is no process that forecasts demand and supply – it is dictated by the middlemen through a multi-layered distribution network. It is now appreciated that this challenge relates to the lack of aggregation of pre-harvest data. The need is to build technology-driven solutions that bridge the gap between farmers and buyers, to encourage active participation from both parties.

The creation of such platforms will improve market transparency substantially by enumerating the produce availability and market demand in every region for buyers and farmers in real-time. As the Aquaconnect\* app captures end-to-end farm production data, we are leveraging this data-intelligence to build our digital post-harvest platform, called AquaBazaar. It brings market transparency and connect farmers directly with seafood buyers with complete traceability. AquaBazaar enables farmers to punch in the details of their produce – such as species, size, quantity, date of expected harvest – through which they can attract potential buyers in the vicinity.

This will not only empower farmers by offering transparent market demand and pricing, but also give them the option to select buyers in their region, plan their harvest, evaluate market conditions, and to realise the best value for their produce, as these platforms provide complete traceability. This practice can also be a boon to the buyers, in leading them to sustainable sourcing of harvest produce (required size, quantity and quality standards), assessing region-specific supply, logistical planning and procurement planning with complete traceability of harvest produce.

This approach should be a game-changer, as it solves the problem of information asymmetry and ineffective distribution channels. Moreover, platform-driven transactions further add credibility and help stakeholders like banks and insurers better evaluate risks and validate farmer profiles, thereby enabling them to extend their services. Moreover, empowering AquaBazaar with machine learning will catalyse the effectiveness of post-harvest chains.

An AI-powered platform can assist prospective buyers in forecasting supplies for the following weeks and months in every region. This will also help the processors and buyers to plan strategically and streamline their business methodically. Tailoring such a technological process to suit 5 million farmers could be a herculean task, but it is possible through the close collaboration of various potential stakeholders – including farmers, co-operative societies, processors, banks, and governing bodies like MPEDA and SEAI.

Traditional supply chains generally pose resistance to such digital platforms, as they disrupt the existing frameworks. However, the adoption of digital platforms requires a great deal of unlearning and mentoring. It will therefore take time to make digital intervention reliable and trustworthy for farmers and buyers, in terms of handling quantity and quality assessment, payments and logistics. AquaBazaar is now on the verge of completion, and we are currently onboarding potential partners for a pilot project, while aiming for commercial launch before the end of the year.

**India: Prime Minister supports a treaty for the sustainable use of high seas biodiversity**

<https://theprint.in/india/india-supports-legally-binding-un-treaty-for-sustainable-use-of-biodiverse-oceans-says-pm-modi/828285/>

"Prime Minister Narendra Modi Friday pledged India's support towards creating a legally binding international treaty under the United Nations (UN) Convention on the Law of the Sea towards the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Speaking at the One Ocean Summit organised by France and jointly hosted by the UN and the World Bank in Brest, France, via video message, Modi said, "India supports the French initiative of a high ambition coalition on Biodiversity Beyond National Jurisdiction (BBNJ). We hope for a legally binding international treaty this year."

A coalition on BBNJ was formally launched at the One Ocean Summit Friday, with world leaders such as Canadian Prime Minister Justin Trudeau, Japanese Prime Minister Fumio Kishida, UK Prime Minister Boris Johnson, among others, pledging their support. The One Ocean Summit featured discussions, some of which were hosted by French President Emmanuel Macron, on issues such as combating illegal fishing, decarbonising shipping and reducing plastic pollution. The objective of the summit, held from 9-11 February, was to mobilise the international community to take tangible action towards preserving and supporting healthy and sustainable ocean ecosystems. It has been viewed as the first high-level gathering dedicated to the cause.

Global initiative on single-use plastic

The prime minister emphasised New Delhi's commitment towards eliminating single-use plastic and invited France in launching a global initiative dedicated to the cause. "India recently undertook a nationwide awareness campaign to clean plastic and other waste from coastal areas. Three hundred thousand young people collected almost 13 tonnes of plastic waste. I've also directed our Navy to contribute 100 ship days this year to cleaning plastic waste from the seas," he said in the message.

He added, "India will be happy to join France in launching a global initiative on single-use plastic." PM Modi also spoke about India's commitment towards preserving marine resources, citing the Indo-Pacific Oceans Initiative (IPOI) as an example. "Today, our security and prosperity are linked to the oceans. India's Indo-Pacific Oceans Initiative contains marine resources as a key pillar," he said.

In November 2019, PM Modi launched the IPOI at the East Asia Summit held in Bangkok, Thailand. The IPOI draws on existing regional cooperation to focus on such important issues as maritime security, maritime ecology, maritime resources, maritime transport and disaster risk reduction.

**India: Proposal for exempting low-income fishers from subsidy cuts at WTO gaining weight**

<https://www.thehindubusinessline.com/economy/policy/indias-proposal-for-exempting-low-income-fishers-from-subsidy-cuts-at-wto-gaining-weight/article34667091.ece>

"India's proposal of exempting low-income fishers from developing countries operating in territorial waters from a subsidy ban is gaining weight with several WTO members supporting its inclusion in the draft agreement floated by the chair of the negotiating committee. "What is, however, worrying for India is the indication that the exemption may come with a timeline and may be withdrawn after the initial years," an official source told BusinessLine.

As per the draft text on curbing fisheries subsidies circulated by the chair of the negotiations Santiago Will, the prohibition on fisheries subsidies shall not apply to subsidies granted or maintained by developing country members, including least-developed countries, for low income, resource-poor or livelihood fishing or fishing related activities within 12 nautical miles measured from the baselines for a period of about 2 years from the date of entry into force of this instrument.

"The text is full of brackets including a bracket on the suggested two years of exemption meaning that these are to be negotiated. However, it will be difficult for India to accept any timeline to the exemption as resource-poor farmers will need support for a long time to come," the source said. The on-going negotiations around a draft text is important as an agreement on curbing fisheries subsidies is being projected as one of the key achievable at the next WTO Ministerial meeting scheduled in Geneva on November 30 this year.

The prohibition targets subsidies in all categories such as fuel subsidy and subsidies for nets, fishing boats and other equipment. An agreement on prohibiting 'harmful' fisheries subsidies could lead to elimination of an estimated \$14-20.5 billion of subsidies annually that lead to overfishing and depletion of fish stocks worldwide, but many countries like India have sought exemption for artisanal fishers who fish in territorial waters.

Although the chair has prepared a draft text based on which an agreement could be finalised, there is still a long way to go before differences are narrowed on important issues including special & differential treatment (S&DT) for developing countries in the IUU (illegal, unreported and unregulated) pillar.

At the negotiating group meeting on Thursday, there were some members who were continuing to oppose an exemption from subsidy cuts for developing nations on the ground that IUU fishing was harmful and illegal and could not be tolerated at all. "There will be more meetings on special & differential treatment for developing countries over the next few days to narrow existing differences," a trade official based in Geneva said.

### **India: Proposes limited scope of WTO panel on fisheries subsidies**

<https://economictimes.indiatimes.com/news/politics-and-nation/india-proposes-limited-scope-of-wto-panel-on-fisheries-subsidies/articleshow/81380748.cms>

"India has proposed that the jurisdiction of a World Trade Organization (WTO) dispute panel on fisheries subsidies be limited, a move aimed at preserving the sovereign rights of countries to explore, exploit, conserve and manage the fisheries resources within 200 nautical miles of their

sea zones. In the ongoing negotiations to finalise disciplines to eliminate subsidies for illegal, unreported and unregulated (IUU) fishing, and prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing, India has proposed “standard of review” provisions which limit the scope of dispute settlement panels so that they don’t interfere with the decisions of countries’ fisheries management authorities.

“A WTO panel shall not review claims regarding a coastal member's determination made in respect of IUU fishing, overfished stocks, and overfishing and overcapacity in respect of fishing and fishing-related activities conducted by its own fishing vessels in its territorial sea and exclusive economic zone,” said India. The proposal is meant to protect the sovereignty of members in their Exclusive Economic Zone (EEZ), which is the boundary of the sea zone extending up to 200 nautical miles from the shore.

“India has suggested that the coastal members’ determination of stock assessment and listings of IUU fishing should not fall in the purview of the panel or be open to challenge,” said an official. The official said it is crucial for countries to secure the capacities they have in EEZs. “Members aired mixed views on the issue,” said a Geneva-based official.

While some members prefer to completely defer to national and regional fisheries management authorities for such determinations, others are open to a level of scrutiny in order to effectively enforce a WTO ban on prohibited subsidies.

As per the first official, Australia and the European Union said that scientific risk assessment similar to the Sanitary and Phytosanitary Agreement can be replicated in the fisheries pact to put in place measures if human, animal or plant life needs to be protected. WTO members are trying to thrash out an agreement on fisheries subsidies by the next ministerial conference, which is scheduled to be held towards the end of this year.

### **India: Readies blueprint for protecting endangered turtles**

<https://www.dailypioneer.com/2021/india/india-readies-blueprint-for-protecting-endangered-turtles.html>

"Home to four turtle species — olive ridley turtle, green turtle, hawksbill turtle, and leatherback sea turtle, India has finally outlined a blueprint for the protection and conservation of endangered marine turtles found on its coastal zones. Even though all the species found on the coastal zones stretching 7,500 km are listed under Schedule I of the Indian Wild Life (Protection) Act, 1972, their populations in the Indian sea waters are under threat.

Infact approximately 61% of worldwide turtle species are either threatened or already extinct, and the sea turtle is no exception as they struggle with pollution and degradation of nesting habitats, which can interfere with their egg-laying. And turtles in the Indian oceans are no exception. Speaking at the virtual launch event recently, Union Environment Minister Prakash Javadekar said that both floral and faunal diversity including the marine biodiversity is the beauty of India and we need to conserve it with best possible action and interventions.

The documents ‘Marine Mega Fauna Stranding Guidelines’ and ‘National Marine Turtle Action Plan’ contain ways and means to not only promote inter-sectoral action for conservation but also guide improved coordination amongst the government, civil society and all relevant stakeholders on the response to cases of stranding, entanglement, injury or mortality of marine mammals and also conservation of marine turtles.

Javadekar said, India has rich marine biodiversity along a vast coastline of over 7,500 km. From colorful fish, sharks, including Whale Sharks, turtles and big mammals like whales, dolphins and dugongs to bright corals, marine habitats not only harbor diverse species but also provide resources essential for human well being. Despite the immense economic, ecological and cultural values of marine habitats in India, marine megafauna species and marine turtles face a wide variety of challenges including stranding and entanglement.

Managing such challenging situations requires coordination, action and people’s participation which would help in the long-term conservation of marine species and their habitats, he added. The action plans highlight actions to be taken for handling stranded animals on shore, stranded or entangled animals in the sea or on a boat, management actions for improved coordination, reducing threats to marine species and their habitats.

Also, the plan outlines steps to be taken for rehabilitation of degraded habitats, enhancing people’s participation, advance scientific research and exchange of information on marine mammals and marine turtles and their habitats. Conserve Species, their habitat and reduce negative impacts on survival of marine turtles. Concerns about nest predation, plastic pollution, light pollution, habitat degradation, and bycatch (marine creatures that are inadvertently trapped in fishing nets) have been addressed in the policy.

Scientists estimate that to restore wildlife in the ocean, at least 30% of the world’s oceans should be put completely off limits to harmful human activities by 2030, according to a latest report by Greenpeace International. India is a signatory to the Indian Ocean Sea Turtle Agreement (IOSEA) of the Convention on Migratory Species (CMS), a United Nations backed initiative. The latest policy rollout represents India’s step in its conservation push, said a scientist from the Wildlife Institute of India (WII).

### **India: Reduction in fishing hours is recommended to build up the biomass in Indian marine fisheries, according to a recent study**

<https://academic.oup.com/icesjms/advance-article-abstract/doi/10.1093/icesjms/fsab076/6268978?redirectedFrom=fulltext>

"A biomass dynamics modelling study to derive biological reference points and management requirements of 223 commercially important fish stocks in different maritime states of India was conducted. Two decades (1997–2016) of fishery-related data on the harvest of resources by different types of fishing fleets formed the input. The multigear nature of the fishery situation was solved by introducing a gear standardization parameter into the biomass dynamics model.

The relative positions of the fish stocks were depicted through Kobe plots generated for the ten maritime states/union territory, and the fish stocks were categorized, based on the status, into sustainable, overfished, recovering, and overfishing.

The results indicate that 34.1% of the assessed fish stocks in the country are sustainable, 36.3% are overfished, 26.5% are recovering, and 3.1% are in the overfishing status. Regionally, the percentage of sustainable fish stocks were high along the southwest coast (51.6%), overfished stocks were high along the northwest coast (54.2%), and recovering fish stocks were high along the northeast coast (47.8%).

The national mean B/BMSY was estimated as 0.86, which is a strong reason for strengthening fisheries management. Fishing fleets harvesting overfished stocks were examined for each maritime state, and recommendations regarding reduction in annual fishing hours are made.

### **India: Reeling from COVID-19, seafood traders unsure of what comes next**

<https://www.seafoodsource.com/news/supply-trade/reeling-from-covid-19-indian-seafood-traders-unsure-of-what-comes-next>

"India's seafood industry is beginning to feel the effects of a new wave of COVID-19 sweeping the country. A shrimp farmer in Gujarat reported to SeafoodSource that farm-gate prices are dropping as farmers in some areas are worried about a rush to harvest early to achieve some value for their crop before anticipated lockdowns or trading restrictions that could be imposed in coming days or weeks.

But most farmers he talked with have agreed to avoid "mass harvests." Separately, a trader from the southeast state of Andhra Pradesh, said that while big cities like New Delhi, Mumbai, and Bangalore have suffered severely from the renewed COVID-19 outbreak, most of the country's shrimp-processing factories will see less of a direct impact due to their location India's east coast.

However, worries over the virus and lockdowns may create a labor crunch – thousands of workers were reported by The Indian Express to be fleeing big cities across India in advance of potential lockdowns. "New harvest volumes are picking up, but many factories may soon face workforce shortages, because migrant workers are returning home, fearing another lockdown," he said. The second source said shrimp farmers in Gujarat began stocking in late February and early March and so far around 60 percent of stocking has been completed.

Some farmers are continuing seeding, but others have decided to delay stocking to the end of May or early June because of worker shortages. Nevertheless, he said the country's experience with a previous severe outbreak last year should help with planning for the current surge. "Luckily, harvesting activities in Gujarat will start toward mid/end of May or June and panic-harvest[ing] can be avoided with systematic planning, as we have some time to plan in advance," he said.

The current wave of infections is hitting India hard, with an average of 300,000 new cases each day in the past week. Health facilities and crematoriums, especially in big cities, are overwhelmed. The country's total infections are about 18 million with 201,187 deaths. But the actual figures are likely higher, according to Reuters.

As a result, some global forecasting agencies are revising India's economic growth forecasts downward. Nomura's chief economist covering India, Sonal Varma, predicted India's gross domestic product (GDP) growth will contract 1.5 percent in the current quarter, with "downside risk" coming along with this forecast, CNBC reported. Global forecasting firm Oxford Economics forecasted India's 2021 GDP growth is likely to reach 10.2 percent, down from a previous estimate of 11.8 percent, The Economic Times reported.

A third source, who has 26 years of experience in shrimp hatchery and farms, said the new outbreak has resulted in a nationwide shortage of oxygen, affecting the supply for shrimp hatcheries. Contrarily, a fourth source, also a trader from Andhra Pradesh, did not expect a significant impact from the current outbreak. "It's too early to predict the impact, but we expect it not to cause major disruptions like last year. We are also not expecting any panic-harvest[ing], as most states' governments are against any major lockdowns or restrictions," he said.

"The surge in infections is exceptionally high in western and northern parts of the country, primarily urban areas. The rate of infections in Andhra Pradesh and other shrimp farming states is currently lower than in other states." A fifth source, a seafood industry source in Gujarat who exports seafood to China, said he doesn't expect the direct impact of the new coronavirus wave to harm his business as much as concerns about it abroad. "Our prime minister said now lockdown is not possible and we can fight like we did in the first wave," he said.

"But [buyers] don't know which parts of India [are affected the most]." Already hurt by delays in exports to China over that country's fears of importing COVID-19 on frozen import cargoes, the Gujarati exporter has a further pullback from his Chinese buyers. "They have stopped buying and [are] telling us their clients are worried," he said. India is still reeling from tightening access to the Chinese market caused by stricter customs clearance protocols and skyrocketing shipping rates, according to Amod Ashok Salgaonkar, a seafood sourcing expert based in Mumbai.

"The newly developed COVID-19 rules by China along with stricter scrutiny at local level is resulting in slower container movements," Salgaonkar told SeafoodSource. "Normally, the payment gets cleared within 20 to 30 days from shipment.

However, with this new protocol adoption, the payment release duration has increased to 45 to 50 days." India's Ministry of Commerce and Industry showed India's seafood exports were worth INR 436 billion (USD 6.4 billion, EUR 5.2 billion) between April 2019 and March 2020, with China accounting for 21.7 percent of the total.

But Indian seafood shipments to China fell by 40 percent in value and 36 percent in volume between April 2020 and the end of December 2020. In response, India appears to be shifting seafood exports to markets in Africa and the Middle East. Indian shipments to Africa have surged – shipments to Cameroon rose by 735 percent in the period April 2020 through the end of

January 2021. Shipments to Mozambique – primarily mackerel and scad filets – rose by 139 percent in the same timeframe. Indian seafood shipments to Romania rose 157 percent, and the South Asian country has also scored strong growth in its seafood trade to Iran and Israel, according to official Indian data.

Primarily due to COVID-19, cumulative seafood exports from India between April 2020 to March 2021 declined 17 percent in value and 20.5 percent in volume, according to the Financial Express.

But exports could also be declining due to another reason, according to Salgaonkar: new data shows domestic consumption has continued to increase at a 12 percent clip year-on-year in value through the coronavirus crisis. This suggests the market at home may help offset some of the sales lost in China, Salgaonkar said.

### **India: Rejects WTO text for fisheries pact**

<https://timesofindia.indiatimes.com/business/india-business/india-rejects-wto-text-for-fisheries-pact/articleshow/87657153.cms>

"India has rejected the latest draft for an agreement to lower fisheries subsidy at the World Trade Organization (WTO), arguing that it did not take on board the suggestions to make the regime equitable and was biased in favour of countries such as Norway, China and Japan, which were exploiting international waters.

An agreement on fisheries subsidies, meant to make it sustainable, is a key thrust area for the WTO ministerial talks later this month. Government sources said India was committed to putting in place a regime that helped meet the sustainable development goals, but it did not support the proposals in their current form.

India is demanding common but differentiated responsibilities and is seeking to extend the climate change philosophy to these talks. A key proposal from India is to seek a standstill for 25 years from countries in Europe, as well as other global giants such as China, Japan and Korea for fishing in international waters, while also ensuring that developing countries get a longer timeframe to comply with the obligations that they undertake. Besides, it has argued that the subsidies offered by it are meant to sustain poor fishermen in India.

### **India: Restore mangroves to save Sundarbans**

<https://www.deccanherald.com/opinion/panorama/restore-mangroves-to-save-sundarbans-1015948.html>

"Recent cyclones — Yaas, Amphan, Bulbul and Aila — have devastated and displaced millions of marginalised people in the Sundarbans. Climate change is increasing the frequency as well as the intensity of the cyclones that impact the Indo-gangetic delta. Mangroves, a special group of plants that can survive in salty soil and tides, act as an effective barrier against such disasters by protecting the earthen banks as well as reducing the damage. Restoration of native mangrove

species needs to be prioritised to save the Sundarbans. Mangroves proliferate in many coastal regions.

Indonesia has the largest mangrove cover scattered across its islands. The Indo-Gangetic delta houses the world's largest contiguous mangrove forest — the Sundarbans. The Sundarban mangrove ecosystem is shared between Bangladesh (60%) and India (40%). The Indian part of the Sundarbans is also inhabited by 96 tigers. The history of conservation in the Sundarbans can be traced from the Mughal period (1526–1765) to British colonial rule (1765–1947). Mangrove forests have often been considered a hindrance to human settlement and have been indiscriminately cleared to facilitate agriculture.

After independence in 1947, various laws and policies have been implemented to conserve this habitat. The Sunderbans were turned into a tiger reserve in 1973 under the Wildlife Protection Act 1972. The core area of 1,700 square kilometre was designated a National Park on May 4, 1984. The Indian Sundarbas received international recognition as a World Heritage Site in 1987. Nationally, it was designated a biosphere reserve in 1989. In February 2019, the Sunderbans became the largest wetland site in India. English Lord Daniel Hamilton established the 'Gosaba' cooperative model around 1903.

This colonial scheme initiated mangrove deforestation in India's islands. Currently, 54 out of 102 islands are colonised by humans without any trace of mangrove forests. This makes these islands vulnerable to floods and the breaching of earthen river banks during natural disasters. These islands are under constant pressure of erosion that also destabilises the earthen dams. The recent cyclones have devastated large tracts of land by breaching unstable embankments. Concrete dams can be a temporary solution but are costly, ecologically unfriendly and unsustainable.

Erosion can wash away the underlying soil and breach any concrete structure. Mangrove seeds that float in with tides cannot establish themselves in concrete-covered banks, making the natural regeneration of mangroves almost impossible. Mangroves are the only natural solution to this issue. Restoring mangrove vegetation can stabilise banks, attenuate wave pressure and hinder the wind damage during cyclones. Mangroves have been proven to be the best ecosystem-based disaster risk-reduction model across the globe.

A study indicates that a density of 30 mangrove trees per 100 square metre can reduce the flow of a tsunami wave up to 90%. When Cyclone Bulbul hit in 2019, Sundarban mangroves reduced the wind speeds by 20 kilometre per hour. And during Amphan super cyclone, a 10 year old multispecies mangrove plantation saved a part of Satjelia Island in the Indian Sundarbans from intense flooding and wind damage. Restoration ecologists must be careful to use only the locally available species for mangrove restoration.

Exotic, invasive species can replace the local flora and result in an ecological disaster. Mangroves are known to render other ecological services such as increasing the fish catch and serve as breeding ground for fish, prawns and crabs. Fishing is the second most important livelihood of the economically marginalised communities living in the Indian Sundarbans. Scientists have indicated that after oceans, mangrove and sea grasses are the best carbon sink.

Hence, mangrove plantation can be instrumental in sequestering GHG gases and halting the progress of harsh climate change impacts. Restoration of mangroves is the only option to save the 4.6 million people residing in the Indian Sundarbans from natural disasters. Natural methods are sustainable, eco-friendly as well as economically viable over technological alternatives. Policy makers must prioritise mangrove restoration to cope with the impending climate change crisis.

### **India: Restoring the Ganga's purity and biodiversity**

<https://indianexpress.com/article/opinion/columns/namami-gange-project-kumbh-mela-gathering-religious-congregation-7277020/>

"This month, India witnessed the world's largest religious congregation as millions of pilgrims gathered for a holy dip in the Ganga during the Kumbh Mela. Since time immemorial, the Kumbh Mela has been a melting pot for varied beliefs, practices, philosophies and ideologies. Its earliest mention can be found in the Rigveda Parisista (Supplement to the Rigveda 1200-1000 BCE ). The Mahabharata (400-300 BCE) also mentions a bathing pilgrimage at Prayag as a means of atonement for past mistakes and guilt.

I cherish my childhood memory of large hordes of sadhus, along with their disciples, travelling through our village, en route to Haridwar. Living in a Dalit hamlet, I would trudge long distances, barefoot, just to catch a glimpse and listen to them, especially at the Triveni Sangam. Their awe and reverence for Ganga maiyya (mother) left a lasting imprint on me. I internalised that Ganga is much more than a glacial river — it is the very cradle of our civilisation.

Unfortunately, over time, the increase in population, coupled with unregulated industrialisation and unsustainable agricultural practices, have led to a significant increase in pollutants in the river. As a result, Ganga, which once sustained various forms of life, struggled to support its rich biodiversity. Depleting numbers of the Gangetic dolphins was a glaring example of this. Erstwhile governments tried to address this problem, but their efforts didn't make a mark. Perhaps, the challenge was graver than perceived.

After coming to power in 2014, the Narendra Modi government started a flagship programme called "Namami Gange". It adopted a holistic approach which I term as a "Sangam" of public policy, technology intervention and community participation. In 2016, the government issued a notification to authorise the National Mission for Clean Ganga (NMCG) to exercise powers under the Environment (Protection) Act, 1986. As a result, NMCG officials regularly conducted surprise checks on sewage treatment plants (STPs) and issued notices/directions to authorities wherever required.

NMCG also issued directives regulating mining activities on river banks, prohibiting encroachment and regulating activities like the immersion of idols. Unrestricted flow of sewage and industrial effluents into the Ganga has adversely effected its "nirmalta" (purity). Previous half-hearted attempts to address this were marred by faulty planning, leading to inadequate STP

infrastructure, lack of proper maintenance and frequent technological breakdowns. Hence, novel technical interventions were the need of the hour.

NMCG adopted cutting-edge technologies like satellite imagery, remote sensing and geospatial solutions which facilitated real-time monitoring of pollutants in Ganga and its tributaries. Scientific forecast models were deployed for designing new sewage treatment infrastructure. As a first, a hybrid annuity model was adopted for project implementation, thereby entrusting long-term responsibility for operations and maintenance on the project executors.

A total of 342 projects worth over Rs 29,000 crore have been sanctioned till date, out of which 145 are completed. Given Ganga's central role in cultural rituals and rites, 123 ghats and 36 crematoriums have been constructed so far, while the Ganga Avalokan Museum has been set up at Chandighat in Haridwar. To encourage community participation in cleaning the river, an awareness campaign is regularly carried out in cities, towns and villages alongside Ganga through a newly-established community force called "Ganga Praharis".

Through them, the government seeks to transform "jal chetna" into "jan chetna" and turn it into a "jal andolan". To restore the river's biodiversity, NMCG is actively collaborating with premier institutes like the Wildlife Institute of India, Dehradun, ICAR-Central Inland Fisheries Research Institute, Kolkata and the Centre for Environment Education, Ahmedabad. A baseline survey for mapping the biodiversity has been completed and more than 50 per cent of the river now offers high biodiversity value.

NMCG, in association with the Ministry of Agriculture, is also promoting organic farming in villages of Uttarakhand (50,000 ha), UP (42,000 ha), Bihar (16,000 ha), Jharkhand (4,500 ha). A long-term Intensive and Scientific Afforestation Plan is under implementation in the river basin along with the Forest Research Institute, Dehradun. So far, 26,764 ha of area has been covered with local varieties of trees with an expenditure of Rs 337.2 crore. The integrated "Sangam" strategy is yielding results.

The entire stretch of Ganga, spanning around 2,525 km, now has prescribed water-quality standards for bathing (dissolved oxygen is more than 5mg/litre). I'm proud to inform that after years, or even decades, Kumbh Mela at Haridwar offered "Class-A" water quality to pilgrims as almost all major projects in Uttarakhand, numbering 35 with an outlay of Rs 1,159.85 crore, have been completed.

The newly constructed ghats, especially Chandighat, and the face-lift at Har ki pauri, along with sprucing up of 72 ghats at Haridwar shall add to the experience of the pilgrims. Our efforts are only half way through, but I am happy that Mother Nature is responding positively to all our interventions.

The significant increase in the range of sighting of Gangetic dolphins is a testimony to this fact. Going back to my childhood memories, I feel content that the Modi government is working relentlessly towards restoring the nirmalta and aviralta of Ganga maiyya with the awe and reverence it deserves.

## **India: Rising demand for convenience food boosts value addition in Indian seafood exports**

<https://www.moneycontrol.com/news/business/economy/rising-demand-for-convenience-food-boosts-value-addition-in-indian-seafood-exports-7785621.html>

"Indian seafood exporters are churning out more value-added products to cater to the rising demand for convenience foods in overseas markets, particularly the US, after the outbreak of Covid-19. The retail market is booming as a large section of people are still hesitant to go to restaurants and catering is yet to regain normalcy. Since home consumption has come to stay, people are buying more ready-to-eat foods.

### **Demand for value addition**

Value addition in the total annual seafood export from India was stagnant at around 6-7 percent till Covid-19 hit the world. In the last couple of years, it has risen to around 10 percent, according to Marine Product Export Development Authority (MPEDA) sources. India exported marine products worth \$5.96 billion in FY21 and the country is hoping to touch the \$7 billion mark in the current year. "Rising demand for value-added products has created the need for different packaging. Instead of bulk packets, we have to produce smaller ones like 500 gms, 250 gms etc," said Anwar Hashim, Managing Director of Abad Fisheries.

This includes fish fillets and other ready-to-fry or steam products. The pandemic has compelled exporters to give more thrust to value addition to cash in on the current situation. But it requires more investment and trained manpower. "We have exclusive contracts with buyers in the US. They provide us training programmes and help us in importing food materials needed for value addition, like breading," said M Nagesh, finance director of Nekkanti Sea Foods Ltd. Unlike bulk supply, volumes will be lower for value-added products.

So, value addition beyond a limit will affect the topline, though profitability will be more as the special products will bring in bigger margins. "We will have to balance both," Nagesh added. At present the company's value addition in exports is around 15 percent. Freight rates, which have gone up by four to five times, have however eaten into the profitability of exporters. But as people have started stocking more during this winter, probably dreading Omicron, the new variant of the virus, prices are moving up, bringing some relief to Indian exporters.

According to Nagesh, consumers are buying three months' stocks instead of just one month earlier. Breaded shrimps have become a big draw in the US and Japan. Meal kits that have pasta, sauce with shrimp or fish are much sought after in several countries, according to the exporters.

### **Surimi exports up**

The craze for value-added products bought from retail chains and supermarkets has helped boost the shipments of Surimi products from India. Surimi is a paste made from fish meat that is used in making value-added products. It is used to imitate the texture and taste of more expensive products like crab or lobster. Crab stick is a popular Surimi product worldwide. "Our export of crab sticks to the US has gone up by 20 percent as supply from the local producers in the country

has been hit by the pandemic,” said Arjun Gadre, MD of Gadre Marine Export Pvt. Ltd., which accounts for 40 percent of the Rs 2,000 crore or so Surimi shipments from India.

The consumption of Surimi products has also increased in Asian countries such as Japan, Taiwan, Thailand and Korea. “The supply of Surimi from Malaysia, Indonesia and Thailand has dwindled after Covid-19 due to a shortage of workers. But India has managed with local workers despite the lockdowns,” said Satish Pandit, Director, Amal Sagar Seafoods Ltd., another major Surimi exporter.

As threadfin bream, the staple fish used in Surimi, has become expensive after a sharp fall in the catch, manufacturers have been going for a Surimi mix from the meat of croaker, lizard fish, ribbon fish etc.

### **India: Rising sea level could cause \$50 billion loss to Mumbai, Says UN body on environment**

<https://www.outlookindia.com/business/climate-change-could-cause-50-billion-loss-to-mumbai-alone-says-un-body-on-environment-news-184760>

"Calling for deep cuts in greenhouse gas emissions and accelerated action to adapt to climate change to avoid increasing loss of life, biodiversity and infrastructure, a new report by the Intergovernmental Panel on Climate Change (IPCC) data shows India as one of the most climate vulnerable countries.

The rising sea levels and variable monsoon patterns are two of the major concerns having caused 16% GDP loss since 1991. More than four million people were displaced due to disasters in India 2019.

The report by the UN body says that about 35 million people will be at risk due to annual coastal flooding by the middle of the century, and the number can go up to 45-50 million by the end of the century. The risk is getting higher for coastal cities like Mumbai. The sea level damages in Mumbai alone by 2050 are pegged \$49-50 billion and could increase up to three-fold by 2070, as per the report.

The report displays mild confidence in forecasting longer and more frequent heat waves. South Asia expects to see higher maximum wet bulb temperature, which can prove to be fatal, than global averages. Bhubaneswar, Chennai, Mumbai, Indore and Ahmedabad are at high risk of wet-bulb temperature rise. The most severely affected by the end of the century will include Assam, Meghalaya, Tripura, West Bengal, Bihar, Jharkhand, Odisha, Chhattisgarh, Uttar Pradesh, Haryana and Punjab.

Changing monsoon patterns will adversely affect farming and fishing sectors, which together have around 20 per cent share in India's GDP. Rice production can dip by 10 to 30 per cent and maize production by 25 to 70 per cent due to these conditions. Threats to Asia's rice-producing countries, like India, are also likely to come from pests like the golden apple snail, which will accompany predicted temperature increase by 2080, notes the report.

Fishery and food for coastal communities will suffer due to big decreases in potential catch of two commercial species of Hilsa Shad and Bombay Duck in the Bay of Bengal. About two-thirds of the commercially important species of the Indian marine fisheries have been already found to be impacted by climate change and other human induced factors, says the report.

Climate change would affect water sources in the Hindu Kush, Karakoram and Himalayan ranges, which can impact the Indus, Ganges and Brahmaputra basins. There will be severe water scarcity challenges exacerbated by climate change in the international transboundary river basins of the Indus and the Ganges and the inter-state Sabarmati river basin in India by mid-21st Century. Increased frequency of flood events threatens the Ganges-Brahmaputra region, which can impact river channel systems, according to the report.

Other challenges in South Asia are posed by the shifting boundaries of river channels, elaborates the report. "The major floods on the Indus have altered the river's course in Pakistan, moving it closer to the Indian district of Kutch. In the eastern tributary of Ganges system, the alluvial fan of the Koshi river basin has shifted to more than 113 km to the west in past two centuries which may be due to heavy sediment load from the Himalayan rivers."

The report recommends pursuing climate-resilient development pathways, including options like "climate smart agriculture, ecosystem-based disaster risk reduction, investing in urban blue-green infrastructure, adaptation, mitigation and sustainable development goals". The IPCC is a UN body mandated to look into the science of climate change. The new report was the second part of its Sixth Assessment Report. The first part was released earlier."

### **India: River as a living entity**

<https://frontline.thehindu.com/environment/photo-essay-river-as-a-living-entity/article36984037.ece>

"A dolphin bobs up from the quiet flowing waters of the river. At a distance, fisherfolk are quietly angling while our boat chugs along the vast stretches of mangrove forests. We were on the revered and celebrated river Ganga near Sundarbans in West Bengal, where the daily lives of most of the river-dependent communities are still at ease with the rhythms of the river. But amid these serene activities there is a stark reality: excessive effluence flowing into rivers and polluting them, hydroelectric dams disrupting the water flow, and river interlinking projects threatening the riverine ecology, desecrating them in every conceivable way.

The latest Intergovernmental Panel on Climate Change (IPCC) report<sup>1</sup> notes that humans have had an unprecedented and irreversible impact on climate. The factsheet for South Asia notes that the region will witness intense heatwaves and humid heat stress, glaciers will decline, and there will be a relative increase in sea levels.

<sup>2</sup> According to the Central Pollution Control Board's latest report, India has 45 critically polluted river stretches and 300-plus polluted stretches. One-third of India's wetlands have been

lost in the past four decades. The Ganga and the Yamuna, two of the most sacred rivers in India, are choking with untreated sewage and industrial waste that make their water unfit for consumption. Excessive damming and diversion of rivers have resulted in sinking of deltas and affected the entire riverine ecosystem and the communities living downstream.

The dominant view that “any drop of water flowing into the sea is a waste” is basically a formative strategy to dam and divert every drop of water for human use. Recent incidents of landslides and flash floods in the western Himalaya are indicative of the effect of large hydropower and other development projects on fragile ecologies.

All these are linked to several factors, including the extractive, anthropocentric model of development, centralised and bureaucratic governance with little participation of long-time users/residents of riverine areas, a lack of legally mandated and democratic institutional spaces for different interest groups to come together to share data/information/experiences, a lack of ecological understanding among decision-makers, and neglect of cultural/spiritual traditions relating to rivers.

A different course With the onset of climate change and potential mass extinction of species, and the closing window of opportunity to take meaningful action, a growing number of communities, organisations and governments around the world are calling for anthropocentric legal and governance systems to be replaced with ecocentric ones.

The last 15 years have seen a dramatic increase in the number of laws based on ecological jurisprudence—a legal philosophy that sees nature not as a set of objects to be exploited but as a community of subjects (humans and non-humans) who are connected through interdependent, reciprocal relationships.

In 2017, the Uttarakhand High Court ruled (in two separate orders on March 22 and 30) that the Ganga, the Yamuna, their tributaries, and the glaciers and catchments feeding these rivers in Uttarakhand had rights as a “juristic/legal person/living entity”.<sup>3</sup> In 2018, the same High Court ruled that the entire animal kingdom had rights similar to that of a living person (Narayan Dutt Bhatt vs Union of India).

<sup>4</sup> In March 2020, the Punjab and Haryana High Court passed an order declaring the Sukhna Lake in Chandigarh city a living entity, with rights equivalent to that of a person.<sup>5</sup> The Bangladesh High Court recognised the river Turag as a living entity with legal rights and held that the same would apply to all rivers in the country.

The Bangladesh judiciary continues to supervise the rights of nature and has ordered the closure of 231 unauthorised factories along the Buriganga river as an enforcement of the rights. Similarly, in Nepal, there is a new effort to recognise the rights of nature which originates from its long-standing recognition of the public trust doctrine.

Recognition of the personhood of “more than human” entities in formal institutions began with Ecuador becoming the first country to recognise that nature has a right to exist, persist, maintain and regenerate. Several towns in the United States have made by-laws that recognise the rights of

nature. Similarly, New Zealand in 2014 recognised the Te Urewera National Park as a legal entity with rights, powers, duties and liabilities as a “legal person”. Five days before the Uttarakhand High Court judgment of 2017, the New Zealand Parliament enacted the Te Awa Tupua Bill, which gives the Whanganui river and ecosystem legal personality, guaranteeing its “health and well-being”.

Bolivia has enacted the law of Mother Earth, recognising nature’s legal rights, specifically the right to life, biodiversity, regeneration, air, water, balance and restoration. In 2009, the United Nations General Assembly adopted a resolution proclaiming April 22 as International Mother Earth Day. On December 21 that year, it adopted a resolution on Harmony with Nature.<sup>6</sup> On February 16, 2021, the Magpie river in Quebec, Canada, was granted rights as a “living person”.

These rights-based laws granting legal personhood for nature aim to shift the legal status of the natural world from being human property to living entities in their own right and subjects of law, guaranteeing their right to exist, thrive, evolve and maintain their natural cycles. These rights are not conferred by humans; it is a recognition that these rights have always existed. It lays upon humans the duty to act as guardians for the more-than human world.

What would the judicial pronouncements according rights to rivers entail? What does “promote the health and well-being of the rivers” mean? By recognising the river as a person entitled to rights, in the eyes of the law, the river has the power to bring suit under its name, have its injuries recognised, hold its polluters responsible for harms caused to it, and claim compensation and be entitled to other remedies. Fundamental rights in that sense are the most basic of obligations.

When a river is recognised as a legal person, its inviolable basic right will be the right to flow freely. The ecological conditions making up a river’s natural habitat are to be respected and protected. The river has a right to maintain its spirit, identity and integrity. At a dialogue organised by Kalpavriksh, International Rivers and LIFE along with other civil society actors, a collective vision emerged that the river must have the right to flow (unhindered), meander, and to flood in its floodplains.

A river is “from the place the rain falls or snow melts, to the sea, and the whole basin, ecologically (...) including all the flows, underground, on surface, etc., all that could make up a river should be protected through rights”.<sup>8</sup> The rights of the soil and groundwater flow must also be included while keeping in mind the close relationship between the two. This does not mean fishing or other subsistence activities in the river would come to an end. Rather the recognition of the river as an entity seeks to maintain a reciprocal relationship that respects the river’s flow, its flora and fauna, its catchment, and the rocks and soil and other elements of the landscape it flows through. Consequently, activities that cause irreversible damage to these conditions, such as dams and diversions, industrial and urban pollution, fisheries using explosives or trawlers, could be challenged. The rivers would possess rights that are intrinsic and essential for them to exist, flourish, regenerate, be restored and evolve naturally.

Issues of implementation

Assuming that these rights are recognised, rivers cannot represent themselves in a court of law. Therefore, there is a need for a comprehensive system to implement and protect their rights. The rights can be safeguarded using the principles of custodianship. The Uttarakhand High Court order named several government functionaries and a couple of independent lawyers as “parents”.

The court’s follow-up order widened the ambit: “The Chief Secretary of the State of Uttarakhand is also permitted to co-opt as many as seven public representatives from all the cities, towns and villages of the State of Uttarakhand to give representation to the communities living on the banks of rivers near lakes and glaciers.” But a question is will state functionaries have the independence to act in the interest of the river when the government itself is a violator?

An alternative solution is that the custodianship or guardianship be given to a body of local communities associated with the river (who have, or should have, traditional or customary rights of the river such as fisherfolk, farmers along the riverbank, people directly engaged in river-related services, and people who stand to lose immediately and heavily if the health of the river is affected); relevant government agencies, and civil society (that have an established record of independent advocacy on behalf of the river), with a multi-scale or nested institutional framework to enable participation across the entire stretch of the river.

This would call for strengthening of local units of decision-making, that is, gram sabhas and area sabhas. This should also include the representation of various subsistence-based livelihoods relating to the river by independent mediators who discharge their duties with transparency and accountability. What would account for violations? The Uttarakhand court order did not mention what amounted to violation of rights of rivers.

However, in order to be able to truly exercise the rights and implement appropriate redressal, there is a need for a comprehensive definition of the actions that amount to “violation of the rights of rivers”, the extent and scope of “the process and nature of restitution”. The violation of the rights of rivers may be defined as “any obstruction or impediment that disables the entity from performing its essential ecological functions”.

### Restitution and compensation

The New Zealand law has an extensive section lending itself to restitutive, restorative and compensatory action. It acknowledged the government’s decisions and actions for more than a century that resulted in the violation of the health of the Whanganui and the rights, culture and well-being of the indigenous people living along the river. Several specific examples were given, including the dismantling of traditional structures for fishing and river use, a hydroelectric project and mining.

“The Crown acknowledges that it has failed to recognise, respect, and protect the special relationship of the iwi and hapu of Whanganui with the Whanganui river. With this apology the Crown seeks to atone for its past wrongs, and begin the process of healing.” Such an acknowledgement is a necessary first step towards seeking appropriate restitutive, and compensatory measures.

Restitution should amount to undoing the violations done in the past, restoring the river's ecological balance, including but not limited to remedial biological, biochemical, and other processes, stoppage of ongoing projects and processes that are causing violation, adequately compensating all affected communities and other relevant parties.

## Beyond Rights

Law is a modern human construct. It not only talks in the language of rights and duties that only humans understand but also operationalises them in a way that can further entrench human-centredness. In most cases where nature's rights are recognised in law, they have done so by extending to it the concept of "personhood" in other words, akin to humans and, therefore, having human rights.

The Lepchas of Sikkim consider the Rongyung river in Dzongu a sacred reserve. "We believe that when someone dies their soul travels through the river Rongyung to reach the caves of Kanchenjunga," says Gyatso Lepcha from the Affected Citizens of Teesta (ACT), who has been involved in resistance against large hydropower projects in the region.

For long, the indigenous communities have lived in harmony with nature and have articulated rights through their visions of "good life" deeply rooted in their connections to the rest of life. Buen vivir, or living well, an ensemble of South American perspective of a good life, expresses a deeper change in knowledge, affectivity and spirituality, and gives an ontological opening to other forms of understanding human and non-human relationships (Chuji et al. 2019). Similar, yet different in many ways, the Gond Adivasis of central India say, "the rest of nature is our God. Adivasis do not make cement idols or statues.

The leaves, tree, animals, and the spirits in the forest are our gods." It reflects the solidarity that binds all humans and more-than humans together. "These expressions thread a tapestry of many varied possibilities of defining ways of social life and well-being. While actively resisting the idea of development that thrives on endless growth, commodification of human and natural lives." Hence, any such movement on recognising the rights of the rest of nature must challenge the fundamental forms of injustices, including capitalism, stateism, anthropocentrism and patriarchy.

## Bioregional Governance

Another significant question is, once a river's rights are recognised in one country, can those rights "flow" with it into another country, or will multinational agreements become necessary? Can this paradigm offer peaceful collaborations in the contested borders on ecological grounds? Recognising river ecosystems or other entities of nature as having rights offers the possibility of managing and governing habitats based on the ecological realities of the region.

It brings out the bizarre fact that the human-drawn nation state, and political lines on maps in various parts of the world (such as in South Asia by national elites or in Africa and Latin America by colonial powers) have created conflict situations or disrupted ancient cultural and ecological flows and relations. We need to begin reimagining governance from a bioregional

governance point of view, which is based on the understanding that the geographic, climatic, hydrological and ecological attributes of nature support human and more than human living communities, and that these have flows and contiguities that need to be understood and respected.

This would also mean bridging the gap between the customary ways of decision making and the current legal frameworks. There is a need for more imaginative lawyers, activists and judges to help move towards an eco-centric and diverse legal framework.

### Questioning Development

The fundamental contradiction between the current approach of extractive development and the rights of nature, where the former is inherently exploitative of resources for ever-increasing human needs, underlies the current social milieu.

As in the case of all environmental laws and constitutional provisions relating to the environment in India, when there is a contradiction between growth-centred development and the environment, the latter is sacrificed (Shrivastava & Kothari, 2012).

Recognising the need for unpacking several of these questions at a regional level, an alliance committed to representing the interests of free-flowing and healthy rivers, and their dependent communities, has emerged in South Asia.

### Rights of Rivers South Asia Alliance

Evolving as a network of organisations, individuals, and other networks from South Asia and across the world, the Rights of Rivers South Asia Alliance aims to foster dialogue and collaboration around the concept of rights of rivers, and to enable community empowerment, regeneration, conservation and responsible policymaking.

The collective recognises that we need to change our institutions, bureaucracy and jurisprudence as an essential step in transforming the current destructive relationship with nature to one that honours the deep interconnections between humans and nature.

### **India: Rs 3.5K cr outlay for development of fishing harbour and landing centres**

<https://daijiworld.com/news/newsDisplay?newsID=809459>

"The Centre has set an outlay of Rs 3,490 crore for the development of fishing harbours and fish landing centres. The duration kept for the work is till year 2025, Giriraj Singh, Minister of Fisheries, Animal Husbandry and Dairying, informed the Parliament on Tuesday. "

"The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India under Pradhan Mantri Matsya Sampada Yojana (PMMSY) envisages substantial investments to the tune of Rs 3490 crore for development of fishing harbours and fish

landing centres during the period of five years from 2020-21 to 2024-25," the Minister responded to a query.

The query was raised by Singha's own party members. Dr Jyanta Kumar Roy, Member of parliament (MP) from Jalpaiguri, West Bengal and Vinod Kumar Sonkar, MP from Kaushambi, Uttar Pradesh. The answer to the queries posed further noted that in the budget 2021-22, development of 5 Major Fishing Harbours namely Kochi, Chennai, Visakhapatnam, Paradip, and Petuaghat has been announced as hubs of economic activities. "

"Besides, development of inland fishing harbours and fish-landing centres along the banks of rivers and waterways has also been announced in the budget," the answer stated. The Minister also informed the parliament that under the Fisheries and Aquaculture Infrastructure Development Fund (FIDF), concessional finance is provided to the state governments/UTs to undertake development of fishing harbours and fish landing centres. "Till date, 14 fishing harbour projects worth of Rs 3451.32 crore have been approved under FIDF," he added.

### **India: Saarc nations for technology use to fight climate crisis in fisheries**

[https://www.business-standard.com/article/pti-stories/saarc-nations-pitch-for-use-of-tech-in-reducing-climate-crisis-in-fisheries-aquaculture-121080501428\\_1.html](https://www.business-standard.com/article/pti-stories/saarc-nations-pitch-for-use-of-tech-in-reducing-climate-crisis-in-fisheries-aquaculture-121080501428_1.html)

"The South Asian Association for Regional Cooperation (SAARC) countries on Thursday pitched for adoption of technologies to reduce the impact of climate crisis on fisheries and aquaculture, and sought regional cooperation for cross-learning. A consultative meeting of fishery scientists representing India, Bangladesh, Sri Lanka, Pakistan, Afghanistan and Bhutan held by SAARC Agriculture Centre (SAC) has felt the urgent need for implementing strategies such as introduction of climate-friendly technologies in fisheries and aquaculture as well as measures for sustainable utilisation of the resources.

In the meeting, India stressed the need for applying artificial intelligence, bio-informatics, genetic and biotechnological tools, etc, in frontier areas of research to improve aquaculture and fisheries sector. "The member countries have demanded for regional cooperation among the nations and a platform for cross-learning and knowledge sharing to check the fallouts in the best possible way in the time of climate change," Md. Baktear Hossain, Director of the SAC said in a statement. In marine fisheries, the need for capacity building for exploitation of deep sea resources was raised by India, Bangladesh and Sri Lanka, scarcity of quality seeds and shortage of other input materials were the major gaps faced by the member countries in inland aquaculture, he said. "

"Based on the discussions in the meeting, the SAC has come up with a set of recommendations to address such issues. Technical collaboration for knowledge sharing and capacity building among the SAARC countries and setting up of regional networks for seed bank and germplasm transfer are some of the suggestions, he added. In the meeting, the experts voiced concern over dwindling marine catch and aquaculture production, environmental disruption in aquatic ecosystems and its rippling effect on livelihood of the stakeholders owing to climate change and associated developments.

They suggested that technologies of seaweed farming and integrated multi-trophic aquaculture (IMTA), including cage fish farming could be adopted to reduce the impacts of the crisis to a certain extent, it added. The sector could use 'green fishing vessels' with built-in design features for energy saving and fuel saving technologies to reduce carbon emission, they added. Grinson George, Senior Programme Specialist with the SAC said: There are scientific gaps inhibiting the implementation of rules and regulations for sustainable management of fisheries and aquaculture.

"Some possible solutions can be looked upon in satellite remote sensing, numerical modelling, stakeholder perception, prioritisation of spatial sensitivity to ecosystems and many more with right interference from the stakeholders," he added. Referring to the existing disparity in socio-economic standards of the stakeholders, the SAARC body recommended for promoting discussions and cross-learning on strengthening 'social-safety-nets' with emphasis on ensuring socio-economic security of the stakeholders, and policies, laws and regulations harmonising between environment conservation and livelihood development.

Establishment of referral laboratories for aquatic animal health management, a centre of excellence in aquaculture and fisheries in the region and e-repository for information sharing were also listed in the recommendations. Marine pollution, increased fuel prices, illegal, unreported and unregulated fishing, increasing length of value chain, resource crunch and lack of adequate infrastructure are some of the other major issues raised in the meeting by representatives of member countries. SAARC Agriculture Centre is the first regional Centre established by the South Asian Association for Regional Cooperation (SAARC), located in Dhaka, Bangladesh.

### **India: Sagar Parikrama from March 5 to showcase marine fisheries sector wealth**

<https://www.thestatesman.com/india/sagar-parikrama-march-5-showcase-marine-fisheries-sector-wealth-1503049336.html>

"The world's single largest ecosystem, covering nearly three-fourths of the earth's surface, oceans are vital to the economies, security, and livelihoods of lakhs of communities in India that has a coastline of 8,118 km, spanning nine states and four Union Territories, an official statement said on Tuesday.

The Centre said that it is at the forefront in transforming the fisheries sector to formulate fisheries management plans along with a regulatory framework towards effective fisheries governance to ensure sustainable and responsible development through an ecosystem approach. Now, an evolutionary journey of 'Sagar Parikrama' is envisaged across the coastal belt demonstrating solidarity with all fisherfolk, fish farmers, and stakeholders concerned as a spirit of 'Aatmanirbhar Bharat', a release from the Ministry of Fisheries, Animal Husbandry and Dairying said.

The journey of 'Sagar Parikrama' shall focus on the sustainable balance between the utilization of marine fisheries resources for food security of nation and livelihoods of coastal fisher communities and protection of marine ecosystems, it said. Union Minister for Fisheries, Animal

Husbandry and Dairying, Parshottam Rupala will inaugurate the programme on March 5. The first leg shall start from Gujarat's Mandvi and end at the state's Porbandar on March 6.

It will be organised by the Department of Fisheries under the Union Ministry and the National Fisheries Development Board along with Gujarat's Department of Fisheries, the Indian Coast Guard, the Fishery Survey of India, the Gujarat Maritime Board, and fishermen representatives.

The Parikrama, a part of 'Azadi Ka Amrit Mahotsav', is an endeavour to know the problems of coastal fisherfolk. It will be organised in other districts of Gujarat and other State/UTs in subsequent phases. It will be accompanied by state fisheries officials, fishermen representatives, fish-farmers entrepreneurs, stakeholders, professionals, officials, and scientists from across the nation.

During the event, certificates/sanctions related to the Pradhan Mantri Matsya Sampada scheme (PMMSY), KCC, and state schemes will be awarded to the progressive fishermen, especially coastal fishermen, fishers and fish farmers, young fishery entrepreneurs etc., the release added."

### **India: Seabed mining gets impetus in IORA Blue Economy initiatives**

<https://www.hindustantimes.com/ht-insight/economy/seabed-mining-gets-impetus-in-iora-blue-economy-initiatives-101649575594807.html>

"The advancement of Blue Economy in the Indian Ocean region has received a boost. In March 2022, the Indian Ocean Rim Association (IORA) and the International Seabed Authority (ISA), the multilateral body which is at the helm of deep-sea mining in international waters, signed a Memorandum of Understanding (MoU) to "foster their collaboration in areas of common interest".

Michael W. Lodge, the secretary-general of the ISA and Salman al Farisi, the secretary-general of the IORA are confident that the MoU can potentially trigger strong cooperation between ISA and IORA in the development of Blue Economy in the region. The two leaders are optimistic that the IORA member-States would "benefit fully from the sustainable development of deep-seabed minerals" in the international seabed area (the Area).

It is useful to mention that Blue Economy has been identified as a special focus area of the IORA. In particular, seabed mining finds reference among the six priority pillars of Blue Economy i.e. (a) fisheries and aquaculture; (b) renewable ocean energy; (c) seaports and shipping; (d) offshore hydrocarbons and seabed minerals; (e) marine biotechnology, research and development; and (f) tourism.

Furthermore, the IORA Working Group on Blue Economy under IORA Action Plan 2017 has called for developing appropriate mechanisms of cooperation for sustainable development of Blue Economy sectors, including training and capacity building programmes. IORA's commitment to promote development of Blue Economy and the establishment of the Blue Economy Working Group (WGBE) are indeed noteworthy initiatives. The majority of the member-States have put out national policies on Blue Economy and there are concerted efforts

underway to build national and regional capacities through partnership programmes.

Ever since the adoption of the 1982 United Nations Convention on the Law of the Sea (UNCLOS), the ISA mandate includes capacity-building focused on training of nationals of developing countries and personnel for the future enterprise. It has been conceptualising and delivering on its mandate through a variety of programmes and initiatives to strengthen the capacities of developing and technologically less developed States.

In this context, the more recent 2020 ISA supported workshop on “capacity development, resources and needs assessment” merits mention and is meant to contribute to the ISA’s High-Level Action Plan to “undertake regular assessment of the effectiveness and relevance of capacity-building programmes and initiatives implemented by ISA”.

There are 167 States who are members to the 1982 UNCLOS and of these 147 are States parties to the 1994 Agreement relating to the Deep Seabed (Agreement relating to the implementation of Part XI of the 1982 UNCLOS). Majority of the IORA member-States are its members; however their technical knowledge and human-material infrastructure capacities to harness the deep seabed mineral wealth is limited.

The IORA-ISA MoU envisages “joint activities in the fields of capacity-building related to marine scientific research (MSR), seabed exploration, development of legal frameworks and policy formulation, environmental management planning, and joint activities for increased information and data sharing” Many of the IORA member-States have invested in MSR but in a limited way; Marine Spatial Planning (MSP) is high in their priority areas but do not possess the requisite tools for its development ; meanwhile some States have been forthcoming in sharing scientific data particularly in the context of fisheries development.

The IORA also notes that there are “major constraints in the commercialisation” of seabed mining in the Indian Ocean given that the Member States have limited information on the resources in their EEZ as also they lack technical-technological-human resource capacity to explore-mine seabed minerals.

In the above context, the IORA-ISA initiative can be supported by India, it being one of the pioneer country (status of a pioneer investor was awarded in 1987) and vigorously contributes to the work of both the ISA and the IORS. It is one of the top 8-countries / contractors and is pursuing a long-term programme on exploration and utilisation of Polymetallic Nodules.

India’s Deep Ocean Mission (DOM) envisages developing technologies for mining of deep-sea resources like Polymetallic nodules from the Central Indian Ocean at a water depth of 5,500 meters. The DOM also envisions national and international collaboration in education, research and excellence in the field of marine science and ocean science and ocean technology.

A new opportunity for collaboration to strengthen partnership among the IORA Member States has arisen. The IORA-ISA MoU will surely trigger interest among the member-States to engage in the sustainable development of seabed resources. India sees IORA-ISA initiative critical to the needs of the member-States and can support individual and collective capacities building in the

Indian Ocean region. A quick beginning can be made by bringing together experts, policymakers, think tanks and universities from IORA Member States and promote legal capacities development, assistance in formulating national policy and legislative frameworks that can support seabed mining in the Area."

### **India: Seafood export target to be missed on subdued overseas demand**

<https://www.thehindubusinessline.com/economy/agri-business/omicron-effect-seafood-export-target-to-be-missed-on-subdued-overseas-demand/article38214355.ece>

"India's seafood exports are unlikely to achieve the \$7.8 billion target set for 2021-22, as the rising cases of Omicron have led to a business slump in Europe and the UK markets, besides host of other issues that put the exporters on tenterhooks. The Chinese situation is still worse as it continues to suspend Indian plants due to the alleged presence of Covid nucleic acid on seafood packaging materials.

This has led to reluctance on the part of exporters not to ship to China, which is a good market for Indian marine products, sources in the industry said. Seafood exporters seek revision in incentive scheme Chinese exports hit "We are still having issues with the Chinese market. We now have apprehension on the EU markets as well owing to the Omicron breakout.

The shortages of containers and untimely calling of vessels had led to non- commitment of deliveries for the Christmas and New Year sales", Alex K Ninan, President, Seafood Exporters Association of India-Kerala region, told BusinessLine.

According to industry sources, worldwide restrictions and lockdown due to Covid, multi-fold increase in freight charges, shortage of air cargo flights are some of the challenges faced by the sector, thereby adding to the woes of shippers. The Marine Products Exports Development Authority (MPEDA) officials pointed out that 69 per cent of the export target at \$5.3 billion has been achieved as of November 2021 despite Covid and logistics challenges.

The balance exports to the tune of \$2.4 billion are to be achieved by March this year. Advisories have been given to exporters to avoid Covid contamination. Task forces have been formed and units are being inspected to ensure that Covid protocols are being followed in the units.

Formulated guidelines for the seafood sector and gave extensive training to exporters, the sources added. Ninan pointed out that there is a scarcity in the availability of sufficient catch from the seas owing to climatic changes. Moreover, the rising diesel prices have forced trawling boat operators not to venture into fishing. This has resulted in the scarcity of several export-oriented varieties such as shrimps, cuttlefish, squid, octopus and a variety of other fishes in fish landing centres.

Generally, the West Coast, especially Kerala, Goa, Maharashtra, Gujarat where sea catch is more, has been badly affected. Seafood exporters irked over by PLI scheme turnover norms Aquaculture focus The East Coast is mainly dependent on aquaculture, but farmers had shown

reluctance to seed for the next crop last year in the wake of a subdued overseas demand due to the pandemic.

Because of this, the sector expects a lower availability of materials in the next seasons, he added. However, there is a ray of hope amidst the pandemic times from the Gulf markets that reported a 20 per cent growth between April and December. Against the target of \$41.3 crore in 2021-22, the shipments to West Asia posted a 54 per cent growth, the industry sources added.

### **India: Seafood export unlikely to meet \$ 7.8 billion target due to weak overseas demand**

<https://krishijagran.com/agriculture-world/seafood-export-unlikely-to-meet-78-billion-target-due-to-weak-overseas-demand/>

"India's seafood export goal of \$7.8 billion is unlikely to be realized for 2021-22, as rising cases of infectious disease have caused a business slump in Europe and the UK markets, among other issues that have exporters on edge. The Chinese situation is deteriorating, as the country continues to suspend Indian plants due to the alleged presence of virus nucleic acid on seafood packaging materials. According to industry sources, this has caused exporters to be hesitant to ship to China, which is a good market for Indian marine products.

Chinese exports hit

""We continue to have issues with the Chinese market."" We are now concerned about the EU markets as a result of the virus breakout. ""Due to container shortages and late vessel calls, we were unable to commit to deliveries for the Christmas and New Year sales,"" said Alex K Ninan, President of the Seafood Exporters Association of India-Kerala region.

According to industry sources, global restrictions and lockdown due to virus, a multi-fold increase in freight charges, and a shortage of air cargo flights are some of the challenges faced by the sector, adding to shippers' woes. Despite this infectious disease and logistics challenges, officials from the Marine Products Exports Development Authority (MPEDA) stated that 69% of the \$5.3 billion export target had been met as of November 2021.

Balance exports of \$2.4 billion are expected to be completed by March of this year. Ninan stated that there is a scarcity of sufficient catch from the seas as a result of climatic change. Furthermore, rising diesel prices have forced trawling boat operators to abandon fishing. As a result, several export-oriented varieties, such as shrimp, cuttlefish, squid, octopus, and a variety of fishes, are in short supply in fish landing centres.

In general, the West Coast, particularly Kerala, Goa, Maharashtra, and Gujarat, where sea catch is higher, has been severely impacted. Aquaculture focus: The East Coast is primarily dependent on aquaculture, but farmers were hesitant to seed for the next crop last year due to low overseas demand caused by the pandemic. As a result, the sector anticipates lower availability of materials in the coming seasons, he added.

In the midst of the pandemic, there is a ray of hope from the Gulf markets, which reported a 20% growth between April and December. According to industry sources, shipments to West Asia increased by 54% over the target of \$41.3 crore in 2021-22.

### **India: Seafood exports slump by 10.88 percent amid sluggish global trade over COVID fears**

<https://www.newindianexpress.com/business/2021/jun/02/indias-seafood-exports-slump-by-1088-percent-amid-sluggish-global-trade-over-covid-fears-2310827.html>

"The sluggish international trade caused by rising COVID concerns has taken its toll on the Indian seafood export sector. The country's seafood exports contracted by 10.88 percent in 2020-21 as the volume declined from 12,89,651 tonnes in 2019-20 to 11,49,341 tonnes this financial year. In 2019-20, India had exported 12,89,651 tonnes of seafood worth Rs 46,662.85 crore. The decline in terms of rupee value is 6.31 percent, while it is 10.81 percent in dollar value. The leading importers were the USA, China, and the European Union, while frozen shrimp retained its position as the major export item followed by frozen fish.

"The pandemic has drastically affected seafood exports during the first half of the year, but they revived well during the last quarter. The aquaculture sector performed better during this fiscal by contributing 67.99 percent of exported items in dollar terms and 46.45 percent in quantity," said Marine Products Export Development Authority (MPEDA) Chairman K S Srinivas.

Frozen shrimp contributed 51.36 percent of the exports in quantity and 74.31 percent of the total dollar earnings. The USA remained the largest importer, accounting for 2,72,041 tonnes followed by China (1,01,846 tonne), European Union (70,133 tonnes), Japan (40,502 tonnes), South East Asia (38,389 tonnes), and the Middle East (29,108 tonnes).

However, shrimp exports declined by 9.47 percent in dollar value and 9.50 percent in quantity. The overall shrimp export was 5,90,275 tonnes worth USD 4,426.19 million. The export of Vannamei (white leg) shrimp decreased from 5,12,204 tonne in 2019-20 to 4,92,271 tonne in 2020-21. Of the total Vannamei shrimp exports, 56.37 percent was exported to the USA, followed by China (15.13 percent), European Union (7.83 percent), South East Asia (5.76 percent), Japan (4.96 percent), and the Middle East (3.59 percent).

Japan, the major market for Black Tiger shrimp, had a share of 39.68 percent in dollar terms, followed by the USA (26.03 percent), South East Asia (9.32 percent), EU (8.95%), the Middle East (6.04 percent) and China (3.76 percent). Frozen fish, with a share of 16.37 percent in quantity and 6.75 percent in dollar earnings, retained the second position in the exports basket though its shipments plummeted by 15.76 percent in quantity and 21.67 percent in dollar terms.

Frozen squid and frozen cuttlefish exports declined in volume by 30.19 percent and 16.38 percent, respectively. However, the export of dried fish showed an increase of 1.47 percent and 17 percent in quantity and rupee value, respectively. Shipments of chilled and live fish, which were negatively affected due to the reduced air cargo connectivity, fell by 16.89 percent and

39.91 percent in volume, respectively. The share of capture fisheries reduced from 56.03 percent to 53.55 percent in quantity.

However, tilapia and ornamental fish performed well with 55.83 percent and 66.55 percent increase in quantity and an uptick of 38.07 percent and 14.63 percent in dollar earnings, respectively. Tuna showed a 14.6 percent increase in quantity, but its dollar earnings fell 7.39 percent. Crab and scampi exports reduced both in quantity and value.

Several factors, including the pandemic impact, have negatively impacted seafood exports, said Srinivas. On the production side, there were reduced fish landings due to fewer fishing days. Slow logistics movements and market uncertainties added to the crisis. Scarcity of workers in fishing and processing plants, paucity of containers at seaports, increased air freight charges and limited flight availability affected exports, especially of high-value chilled and live products, he said.

### **India: Seafood exports to China have seen a 40% decline during April-December of FY21**

<https://www.financialexpress.com/economy/seafood-exports-to-china-have-seen-a-40-decline-during-april-december-of-fy21/2210855/>

"Has the pandemic impacted seafood exports? Could you give us an idea about the exports in the current fiscal? The cumulative exports during April to January in FY 2020-21 has shown a decline of 20.54% in volume, 13.32% in rupee value and 17.01% in US\$ earnings compared to the same period last year. How are seafood exports to China in the current fiscal? There are reports of containers being held up in Chinese ports and payment issues.

In value terms (US\$), exports to China have seen a 40% decline during April-December of FY21, while volume is seen lower by 36%. The seafood inventory levels in China are reported to be very high and hence no new purchase orders are being issued. Strict Covid-19 scrutiny and additional scrutiny at local governance levels is continuing and has resulted in slow container movement and delayed payment to exporters.

The advance payment given by importers are less and the final payment made only after completing the Covid-19 clearance tests. Moreover, the Chinese are suspending the processing units from exporting to China if the virus is detected in the consignment. MPEDA has taken up the exporters issues for addressing the issues at the appropriate level. What are the status of sea caught fish in the fiscal and the multi-year trend? During the last decade, the marine fish landings are seen fluctuating within a very narrow range between 3.35 million tonne in 2010 and 3.69 million tonnes in 2019.

The peak landing of 3.94 million tonne was observed in 2012, which was also the all-time high record. MPEDA through its society NETFISH is collecting boat arrival and landing details from about 100 harbours and landing centres from the entire coastline. A 30% reduction in the landings of exportable varieties are observed during the April-January 2020-21 period. Main species like cuttlefish, Indian mackerel, Sardines and squid are seen less compared to last year.

What about aquaculture shrimp production? Has the farmed area and production increased year-on-year? Shrimp production during the current fiscal has shown a marginal increase compared to the previous year's production of 6,52,626.42 tonnes. The current year shrimp production (April-December 2020-21) of 6,51,031.13 tonnes has almost reached the previous year's production figure in nine months. This fiscal area under aquaculture shrimp farming has increased by 17.84% compared to FY20.

How are the EU and Japanese markets responding to the quality initiatives carried out by MPEDA? Convinced of the quality initiatives implemented by India, Japanese authorities after on-site verification of the systems in India had initially reduced the import sampling of Indian Black Tiger Shrimp for banned antibiotic substance (Furazolidone) to 30% in March 2020 from the then existing 100%, and in December 2020, they have completely lifted the inspections. Now, Indian black tiger shrimps are subjected to routine random sampling.

The recent talks with EU authorities imply that they have taken note of the systems put in place by India and that the rejections due to antibiotic residues have come down. But they will make a decision only after having a physical verification of the progress which may be possible upon relaxation of the travel restrictions due to the pandemic. What about value addition in seafood exports? Value addition has been progressing at a slow pace in the Indian seafood exports and currently contribute only 6.95% of total export value in US\$ terms.

During 2019-20 value-added products exports increased 12.06% in terms of quantity compared to last year. But the value reduced almost by 6% in rupee value and 4.14% in terms of US\$. The exporters who have ventured into value addition are less, owing to the high initial expenditure and stringent specifications involved. How far have we gone in branding Indian seafood and succeeded in supermarket sales? Indian seafood has a presence in major supermarket chains and restaurants in more than 100 countries.

Almost 95% of these are in the buyers' brand and the Indian origin of the product is confined to its traceability and least projected. MPEDA has initiated several activities like the release of short videos through social media, TV commercials and online promotion activities for promoting the Indian seafood brand. The campaign intends to create additional demand for Indian seafood, which has been consumer-centric and targeted across a captive audience in the US.

### **India: Seafood industry fears further setback on freight hike, US retaliatory tariff**

<https://www.thehindubusinessline.com/economy/agri-business/indian-seafood-industry-fears-further-setback-on-reight-hike-us-retaliatory-tariff/article34470614.ece>

"Already beset with problems on the production and export fronts, the Indian seafood sector fears further setback due to the proposed retaliatory tariff by the US and impending freight rate hike. US trade authorities are planning retaliatory tariffs against the imposition of two per cent tax by India on revenue generated by digital services offered in India. One of the items mentioned is frozen shrimps.

India's largest market of aquaculture shrimps is the US, accounting for about 50 per cent of the country's total production to the tune of \$ 2.5 billion annually. The shrimp export sector, employing nearly 10 million people, mainly shrimp farmers, will get seriously affected, and requires urgent consideration from the government, a note prepared by Seafood Exporters Association of India said. Freight rates have been progressively increased for reefer containers to the US from \$3,500 in March 2020 to around \$6,500 now.

The note said the seafood industry has now been informed by Maersk lines that effective May 1, the rate will be \$12,500. Following Maersk, the largest shipping line in the world, other shipping companies may follow suit. The same proportionate increase is the situation for other destinations in the world. Effectively for the US, this works to a per kilogram freight cost increase from Rs.16 to Rs.60. There is absolutely no way of absorbing this in the selling prices, as the seafood market is almost buyer driven and not a sellers' market.

The marine product exports sector after registering record growths year after year for the last 10 years (from a level of Rs.8,000 crore in 2009-10 to Rs.47,000 crore in 2019-20), has gone through its worst year in 2020-21 with a drop of a drop of 20 per cent in turnover, and volumes, said Alex K. Ninan, president of Seafood Exporters Association of India-Kerala Region. The marine product export sector, which was most healthy just at the beginning of last year, had sure plans of Rs.1,00,000 crore by 2025. All this looks very bleak and distant now.

The sector is facing problems on all fronts of fiscal support, various major markets being disturbed or blocked, serious primary production source issues both in capture and culture fisheries, serious hike in freight and other costs, and erosion of net worth of many companies and the related finance support not coming from the banking sector, he said. Business with China, which constitutes about 25 per cent of the total marine product exports from India, has been totally disturbed. The border issues have had an effect on normal flow of business.

The association has urged the Prime Minister Narendra Modi to include the issues on stringent measures on antibiotic residues in shrimp consignments which have been lower in the last few years than several other countries, in his trade talks at the India-EU Summit shortly.

The problem of the delay in release of MEIS from April to August 2020 amounting to Rs.1,000 crore has been compounded by the fixation of a cap of Rs.2 crore per exporter on the MEIS accruals at 5 per cent of FOB, for the period September to December 2020. The sector appealed for immediate introduction of Remission of Duties and Taxes on Exported Products (RODTEP) RODTEP Scheme in the place of MEIS.

**India: Seafood industry to recover in FY22 on strong demand: CRISIL SME Tracker.**

[https://www.business-standard.com/article/economy-policy/seafood-industry-to-bounce-back-in-fy22-on-strong-demand-sme-tracker-121010401028\\_1.html](https://www.business-standard.com/article/economy-policy/seafood-industry-to-bounce-back-in-fy22-on-strong-demand-sme-tracker-121010401028_1.html)

"Subdued demand in both domestic and export markets will shave 25-30 per cent of the revenue of small and medium enterprises (SMEs), which account for nearly 80 per cent of the seafood industry in India, in the current fiscal year (FY21). Domestic appetite for seafood waned as the

pandemic-induced lockdown weakened demand from hotels, restaurants and cafes. Households also cut down on seafood consumption on fears of transmission of the disease.

Export demand, on its part, plunged as the top 15 severely impacted Covid-19 countries — including the US, Russia, Italy, Spain and the UK — account for about 65 per cent of India's seafood export basket. That said, the industry is projected to rebound in the next fiscal year (FY22), with about 12 per cent growth in revenue, led by recovery in demand.

Though exports are also expected to see an uptick, increasing competition from Ecuador, Vietnam and Thailand is likely to cap export growth. Over the medium-to-long term, fish production in India will improve largely on account of increase in overall aquaculture production. In FY20, aquaculture products comprised 70-75 per cent of the country's overall seafood exports.

The size of the export market for shrimps alone was \$4.5 billion, with white leg shrimps accounting for a 75-80 per cent share. Exporters typically earn higher margins than domestic players. However, the rising global supply of shrimp has exerted downward pressure on prices, paring export realizations.

Meanwhile, the government is looking to ensure sustainable growth of the seafood industry by allowing fishing within permissible ecological limits. Moreover, to avoid excessive exploitation of resources, it has directed states to end bull trawling and refrain from using LED lights to attract fish.

### **India: Seeks curbs at WTO on fishing in distant waters**

<https://economictimes.indiatimes.com/news/economy/policy/india-seeks-curbs-at-wto-on-fishing-in-distant-waters/articleshow/86587557.cms>

"India has pitched for reduction in fishing capacity of countries that fish in distant waters or in the territorial waters of other countries, in a bid to balance overfishing subsidy restrictions with the special needs of developing and least-developed countries. New Delhi has submitted a proposal at the World Trade Organization (WTO), stating that developing countries not engaged in distant water fishing should be exempt from overfishing subsidy prohibitions for 25 years, and only those that have overexploited the environment should bear the cost of managing the problem.

"India has said developing countries that are not engaged in distant water fishing should be exempt from overfishing subsidy prohibitions for 25 years," said a Geneva-based official. India made its submission at the ongoing negotiations to finalise disciplines to eliminate subsidies for illegal, unreported and unregulated (IUU) fishing, and prohibit certain forms of fisheries subsidies that contribute to overcapacity and overfishing, ahead of a key ministerial conference of the WTO later this year.

However, New Delhi has retained the exception in the chair's text for artisanal and low-income fishers, but said it should be without the time and geographic limit contained in the chair's text.

“India’s proposal supports the “polluter pays” approach, by targeting distant water fishing nations in the bulk of prohibitions for subsidies related to overfishing,” the official said. As per the proposal, overfishing would be self-determined by a member or by Regional Fishery Management Organisation for waters under their respective jurisdictions.

This is in contrast to the hybrid approach in the chair’s text that presumed certain types of subsidies to be contributing to overfishing, such as subsidies for vessel construction, fuel, income support, if no measures are in place to maintain stocks at healthy levels.

### **India: Seeks to develop seaweed and shrimp sectors**

<https://thefishsite.com/articles/india-seeks-to-develop-seaweed-and-shrimp-sectors>

"At a time when climate change is increasingly posing a major threat to human life across the globe, cultivating seaweed, will help to boost the economy and reduce the impact of climate crisis as well, he said.

He was speaking at an interactive meeting with scientists from the Central Marine Fisheries Research Institute (CMFRI), held at its headquarters in Kochi. “An additional livelihood option, seaweed farming will play a major role in the socio-economic upliftment of traditional fishermen during this difficult time,” the secretary said.

#### **Seaweed seedbank**

He asked the CMFRI to set up a seedbank of seaweeds. “Marine scientists should come up with ways for capacity development to enhance seaweed cultivation on large-scale,” Swain said, adding that the Pradhan Mantri Matsya Sampada Yojana (PMMSY) has a special thrust for the promotion of seaweed farming. He was on a visit to Kerala to understand the issues and challenges being faced by the sector after taking over the portfolio four months ago. Apart from those in the Kochi headquarters, CMFRI scientists from various regional research stations across the country also attended the meeting.

Elaborating on the country’s ambitious plan in the marine fisheries sector, the Fisheries secretary said that India aims to double its seafood exports in the next five years. “We are hopeful of achieving this target by exploring innovative ways to increase the production that will certainly upscale the country’s per capita income,” he said. Technological development is crucial in this regard especially for areas such as seed production and other hatchery infrastructure for diversified mariculture activities, he said.

Emphasising the need to promote better livelihood options to support traditional fishermen, he said that strengthening of aquaculture and marine fisheries by utilising the technological advancements would help them fetch good income and improve their living standard. “The government is in supportive of promoting the cage fish farming, which is also an alternative source of income, in a big way that would help the traditional fishermen to double their income”,

Mr Swain said and lauded the efforts of CMFRI to give a major boost to this practice across the coastal states.

### Shrimp ranching

He added that stocking green tiger shrimp post-larvae into parts of the sea also has great potential, following CMFRI's successful adoption on the project in Palk Bay. Flagging his concern on resource depletion and ecosystem degradation, he urged scientists to focus on ways to promote responsible fishing and to adopt appropriate mechanisms to improve sustainable fishing.

### **India: Set to oppose move to withdraw fisheries subsidies at WTO**

<https://www.onmanorama.com/news/india/2021/11/26/india-to-oppose-move-to-withdraw-fisheries-subsidies.html>

"Poor and artisanal fishermen in India will be in crisis if the World Trade Organisation (WTO) accepts the demand of developed nations to withdraw existing disciplines on fisheries subsidies. The developed countries have been exerting pressure to withdraw subsidies, and the demand would be discussed at the 12th edition of the WTO ministerial conference to be held in Geneva from November 30 to December 3. The move is to control Illegal, Unregulated and Unreported (IUU) fishing. It has been argued that IUU fishing is posing a threat to marine ecosystems and the revenues of small-time fishers.

However, small-time fishers, who do not engage in IUU fishing, will be the worst hit if the subsidies are withdrawn. The WTO has instructed to confine the subsidies only to those who fish within 12 nautical miles (nm) of the shore, and that too, for just two years after an agreement is reached.

Subsidies should not be extended for fishing in the Exclusive Economic Zone (EEZ) within 200 nm from the shore. India has demanded appropriate and effective special and differential treatment to poor and artisanal fishermen should be extended to all fishermen, including those fishing in the EEZ, for the next 25 years.

### Supreme council

The ministerial conference is the WTO's supreme council which convenes every two years. WTO makes its decision based on consensus and not a majority. It has to be seen how India and other developing nations will take on the developed countries' demand for withdrawing subsidies.

### Law of the sea

According to the Law of the Sea formulated between 1973 and 1982, each country's sovereign territorial water extends to a maximum of 12 nm (22 km) from their coasts, while the 200 nm (370) beyond the territorial waters is the respective country's exclusive economic zone. The high

sea is beyond the EEZ. In India, States have the rights over territorial seas.

### **India: Shifting sands: Run, rebuild, repeat as floods eat away at country's indigenous land**

<https://www.globaltimes.cn/page/202112/1243715.shtml>

"Hemram Pegu has been forced to rebuild his home at least eight times in the past decade, shifting it a few meters inland every time heavy rains cause the Brahmaputra River to surge into his village of Besemora, in northeast India. As a member of the indigenous Mising tribe, who have lived along the Brahmaputra and its tributaries for generations, Pegu remembers taking pride in being able to interpret the behavior of one of the Earth's longest river systems. But today, he said, the community is baffled by its unpredictable nature."

"The original site of our village is now history," Pegu said of his home on Majuli, a riverine island in Assam state. "Its location continues to change as we keep moving inland by 200 to 300 meters from the advancing river each time it floods," the 52-year-old shopkeeper told the Thomson Reuters Foundation. With limited work options and a high dependence on natural resources, the Mising - like other indigenous communities around the world - often suffer the worst of the extreme weather that has become increasingly common as global temperatures rise.

The swelling Brahmaputra frequently uproots families in Besemora, compelling them to relocate to a shrinking area of available land and putting a strain on their livelihoods. Scientist Partha Jyoti Das pointed to climate warming as a major reason for the intensified flooding, adding it had caused "significant deviations" in natural weather patterns over Assam in the past decade. A study published by India's Department of Science and Technology in 2018 found that Assam was the most vulnerable of the Indian Himalayan states to destructive climate change effects. It highlighted a range of factors, including Assam's low per-capita income, rates of crop insurance, and land under irrigation, leaving farmers to rely on regular rainfall to water their fields.

Dying fish, sandy pots

Between 2014 and 2021, more than 32 million people in Assam were affected by flooding, including nearly 660 deaths, according to data from the state disaster management authority. In an effort to minimize the destruction, Besemora residents raise the floors of their traditional stilted bamboo homes depending on the level of the latest flood, Pegu explained. The villagers also try to break up the force of the flooding with a network of bamboo "porcupines," triangular structures made of intersecting poles built along the riverbanks. But those measures are often no match for the overpowering water.

When that happens, said Binud Doley, an elder from Salmora village, about a kilometer north of Besemora, the area's indigenous communities face yet another problem: the inability to reclaim their land once the flood waters have receded. With no title deeds to prove ownership, the Mising traditionally settle on unused riparian land, Doley said. But the effects of flooding and riverbank erosion, along with the spread of farming and the region's growing population, mean available land is becoming scarce, he added.

Gojen Paw from Majdolopa village, in Assam state, said abrupt climate swings are also destroying the farming and fishing the Mising people depend on. Historically, Assam has often experienced some flooding during the annual monsoon season, Paw said, with the waters leaving behind nutrient-rich alluvial deposits that would naturally fertilize its fields of rice, mustard and vegetables. But these days, "frequent floods erode away the fertile topsoil from our fields and leave behind coarse sand, debris, and rounded pebbles," he said. Villagers say fish populations are decreasing as the bloated river and crumbling riverbanks disturb their habitats, and even the centuries-old Mising tradition of handmade pottery is under threat.

### Long-term solutions

After heavy flooding, the government steps in to help villagers like Chamuah get back on their feet, said Sisuram Bharali, president of the gram panchayat of Bongaigaon, the village-level governing agency that oversees Salmora. Some families are offered daily wage work, if capable, with pay of up to 347 rupees (\$4.65), he noted, while others might receive 10 kilogram of rice per month for a limited period.

The Assam government notes on its water resources website that it has been raising and strengthening embankments, building flood walls and improving village drainage, helping protect more than half the state's flood-prone areas. But it emphasizes that "no long-term measures have been implemented so far to mitigate the flood and erosion problems." "Such long-term fixes are essential, said Tuhin K. Das, an expert on disasters and migration and former chair professor of the Planning and Development Unit at Jadavpur University.

To deal with the climate-induced displacement of indigenous communities, who make up nearly 9 percent of India's population, the government should create policies to rehouse them, restore their livelihoods and offer job training, Das said. Authorities also need to tackle the lasting consequences of flooding on living conditions, health and education, he added.

"The long-term socioeconomic impacts of riverbank erosion are rarely assessed from a policy perspective," he said. Besemora residents can only make sure they always have essentials bundled together on their roofs, ready to grab when the river bursts its banks again, said Purnima Doley. "We have no choice but to flee our homes with these meager belongings to safer, higher ground, when this otherwise serene river swells up," said Doley.

### **India: Shrinking coastlines and how Bengal is suffering the most**

<https://www.indiatimes.com/explainers/news/india-coastlines-are-shrinking-and-bengal-suffers-the-most-erosion-566858.html>

"With approx. 6,907 km length of mainland coastline, there are nine states in India with a coastline, namely, West Bengal, Kerala, Goa, Gujarat, Maharashtra, Karnataka, Tamil Nadu, Odisha and Andhra Pradesh. Due to natural causes or anthropogenic activities, some shorelines of India are facing erosion and eventually shrinking of the Indian Peninsula.

The Ministry of Earth Sciences informed in a Lok Sabha reply that the Indian coastline of the

mainland is under varying degrees of erosion. The ministry said that about 34% of the 6,907.18 km long Indian coastline of the mainland is under erosion and 26% of the coastline is of an accreting nature. The remaining 40% is found to be in a stable state.

Bengal suffers the most erosion

Since 1990, the shoreline erosion is monitored by the National Centre for Coastal Research (NCCR), Chennai, which works under the Ministry of Earth Sciences. In 2018, a report on 'National Assessment of Shoreline Changes along Indian Coast' is released by the NCCR. Using modern technology like remote sensing data and GIS mapping, about 6,907.18 km long Indian coastline of the mainland has been analysed from 1990 to 2018. With a 534.35 km-long coastline on the eastern coast, West Bengal faced 60.5% erosion from 1990 to 2018. On the west coast with 592.96 km of coastline, Kerala suffered 46.4% erosion.

What is coastal erosion?

Coastal erosion can be defined as the long-term removal of sediment and rocks along the coastline due to the action of waves, tides, currents, wind-driven water etc. Simply put, the loss or displacement of land is also caused due to storms and other natural events causing erosion including high tides with strong waves and the problem is worsening with a global rise in sea-level. Coastal Erosion includes 4 main processes which are hydraulic action, abrasion, attrition and compression.

Indian coastal landmarks may submerge by 2050

A report published by RMSI, a global risk management firm revealed that many Indian coastal landmarks might submerge in the sea by 2050. Today's downtown areas of Mumbai, Mangalore, Kochi, Thiruvananthapuram, Chennai and Visakhapatnam are listed in 'may' submerge into the sea landmarks by 2050.

The report tells that Bandra-Worli Sea Link, Haji Ali Dargah, Western Express Highway and Marine Drive in Mumbai are at risk of being eaten up by the Arabian sea. Based on the projections of the United Nations Intergovernmental Panel on Climate Change (IPCC), the report states that the north Indian Ocean may rise by a foot every year in the coming decades.

Challenges

According to reports, half of the existing shoreline of Andhra Pradesh in the eastern Godavari is already swallowed and the coastal land of some districts of Kerala is also gulped and in some places, boundary walls of houses are hit by the waves. The change is posing a severe threat to the population dwelling at the location. About 150 million people live in these regions and their safety and relocation are a matter of concern.

A 2018 national study of the Indian coastline claimed that anthropological effects like the construction of coastal structures, beach sand mining and dams on rivers are a few reasons

triggering erosion. Seawater contaminates wells and increases soil salinity among several other problems.

### Indian initiatives

The Indian government has taken several initiatives to fight the situation. One of them is the National Centre for Sustainable Coastal Management which aims to integrate sustainable management of the coastal and marine areas of the traditional coastal and island communities. In another initiative 'Integrated Coastal Zone Management Plan', management of the coast using an integrated approach including geographical and political boundaries of the region is focused. To regulate activities in coastal areas of India, the Ministry of Environment and Forest issued the Coastal Regulation Zone (CRZ) notification in 1991 under the Environmental Protection Act, 1986."

### **India: Startup India invites applications for fisheries grand challenge; to offer seed grant of Rs 2.5 cr**

<https://knnindia.co.in/news/newsdetails/sectors/startup-india-invites-applications-for-fisheries-grand-challenge-to-offer-seed-grant-of-rs-25-cr>

"Under the Startup India initiative, the government has invited applications for fisheries grand challenge. It will give out few special incentives such as seed grant of Rs. 2.5 crore for upto 10 startups. The application end date is 26th February, 2022 and the results will be announced on 28th March, 2022. Enhancing quality of production in fisheries and aquaculture sector, and designing and developing infrastructure solutions are some of the problem statements.

It also includes innovative branding and solutions for combating environmental issues related to the sector. The challenge is open to DPIIT recognized Startups working in the areas indicated in the problem statements. It should also have a minimum viable product or service with a market fit, viable commercialisation, and scope of scaling.

Department of Fisheries (DoF), through its partnership with Startup India aims to identify and support innovations and startups working in the aquaculture and fisheries sector to accelerate the growth of this sector. In view of fiscal incentives, cash grants for 12 startups worth Rs 2 Lakhs each will be rewarded. It will also provide Incubation Support for up to 10 startups for 9 months.

Some of the non-fiscal incentive include Masterclasses for shortlisted startups. As per the PMMSY guidelines, Govt assistance of upto Rs 20 lakhs for general category or upto Rs 30 lakhs for SC/ST/Women category will be provided against a unit cost of Rs 50 lakhs, subject to certain conditions.

### **India: Steps need to be taken to use wastewater for aquaculture and irrigation**

<https://indianexpress.com/article/opinion/water-recycle-irrigation-pollution-7191441/>

"Water scarcity may be caused by a variety of factors — temporal or long-term, local or regional, both natural and anthropogenic. The polluted grey and black waters from municipal/industrial effluents, agricultural chemicals and other sources affect all aquatic systems. Almost 50 to 80 per cent of wastewater goes untreated into streams, rivers and groundwater, which hinders our development capabilities and affects our food security.

The virus that causes COVID-19 (SARS-CoV-2) has been detected in untreated wastewater, but the Centres for Disease Control and Prevention in the United States (CDC) has said there was no evidence that the novel coronavirus can be contracted by coming into contact with it. Rivers, water bodies and aquatic life, mountains, forests and wildlife in India symbolise a culture of peace and coexistence with nature. But the projected future scenarios for wastewater are dark — water quality will be deteriorating further by 2030 under all scenarios.

Population growth was found to have the highest impact on future water quality deterioration, while climate change had the lowest, although not negligible. The Ganga is amongst the most polluted rivers in the world with flows obstructed/diverted and fragmented through the construction of dams/barrages, thus losing its self-cleaning capacity. It receives about three billion litres per day of untreated sewage and industrial effluents and enters our rivers. According to the India Meteorology Department (IMD), over the last decade, the monsoon in India has been below normal in six out of 10 years.

This complicates matters further. Water, though annually renewable, is a finite resource. What is needed is equitable and sustainable allocation, balancing the demands of competing stakeholders. The best option in the present-day condition in India is natural pollution control. People-friendly and cost-effective methodologies for mitigation of water pollution need to be developed or refined through continuous research and development. Similarly, technologically simple, cost-effective and energy-efficient sewage treatment plants for community and individual household levels are of urgent necessity.

According to the Niti Aayog, an estimated 600 million people in India face high to extreme water stress. Rivers are stressed and fragmented, and groundwater is overexploited with water levels dipping in several states. The water quality of rivers has been deteriorating in the last few decades. Various river action plans have been taken up to reduce water pollution in the river, but there has been no visible improvement in the river's water quality so far.

We need to understand the river system, its mechanism, the best location for waste disposal, the amount of waste disposed, the waste assimilative capacity, and the influx of non-point source pollution from urban and agricultural areas, and then to issue advisories to industries and municipal corporations, accordingly. River hydraulics govern the dilution, diffusion, dispersion, reaction and the settling of pollutants.

India has some well-tested ways to use wastewater. The East Kolkata Wetlands, a notified Ramsar Site, are an ideal example of a system of natural bio-treatment of urban wastewater through "Pond System and Plant-Based Waste Management of Sewage Treatment", and for recycling and utilising the treated wastewater for fish-culture and agriculture. It provides about 13,000 tons of fish per year from its about 300 wastewater fed ponds, 150 tonnes of fresh

vegetables per day from the small-scale horticulture plots irrigated with the treated wastewater, and provides water for irrigating paddy cultivation and also serves as a natural sponge for absorbing excess rainfall.

Some 35,000 tonnes of municipally waste and 680 million litres of raw sewage enter the wetland system every day. Still, only 30 per cent of the total wastewater is used for aquaculture or irrigation, while the remaining 70 per cent flows directly to the Bay of Bengal, which pollutes the estuaries region and subsequently reduces aquatic biodiversity and causes large scale death of fish seeds. The problem could be mitigated by taking necessary steps for 100 per cent use of the total wastewater for aquaculture and irrigation.

The East Kolkata Wetlands system could be developed as an ideal example of low-cost urban waste management and for recycling of fish culture and organic farming and sanitation technology, especially for developing countries. Due to the cumulative effects of rapid urbanisation, population growth and climate change, many inland and coastal water bodies around the world are experiencing severe water pollution.

So we should look for a green plan for the rejuvenation and preservation of our other great rivers and their sources which are contaminated by wastewater coming from point and non-point sources through ecological friendly ways. The aquatic systems are facing great ecological crises in recent decades, which have catastrophic consequences for future water resource availability in our country.

To help make land-use and climate change adaptation policies more effective at a local scale, we are suggesting the following model for large scale, eco-friendly water management systems for a big country like us, which is a combination of participatory approach and natural remediation and a reusable practical model. In this model, all city/town/metros drains should have to come to common STPs kept 10 km outside the city.

After treatment, they will have to send them to a common drain which is covered with urban forest throughout for over 2-3 km with native plants and shrubs and grasses to control for erosion, enhance bank stability, reduce evapotranspiration and control virus-infected aerosol. This will also reduce the flow rate and help in increasing the residence time of water that allows water to interact with soils and organic matter to naturally remove pollutants and heavy metals.

Then, the water will be free from pollutants (organic and inorganic) when it reaches the main river and will help to rejuvenate the ecosystem fauna and flora, and the river will return slowly to a pristine condition. The main drain will be dredged frequently to get these nutrient-rich sediments by desilting for natural fertilisers, besides being useful for regenerating the enormous volume of wastewater generated by us in a useful manner.

### **India: Study finds metal pollution in aquaculture farms**

<https://www.thehindu.com/news/national/study-finds-metal-pollution-in-aquaculture-farms/article33580769.ece>

"A study of aquaculture farms across 10 States, which account for the bulk of India's production, has found "hazardous" levels of metals such as lead and cadmium in all of them. Profligate use of antibiotics and insecticides for cultivation and the threat of anti-microbial resistance have contributed making aquaculture a "ticking time bomb," according to the authors of the study commissioned by the Federation of Indian Animal Protection Organisations (FIAPO) and All Creatures Great and Small (ACGS). FIAPO and ACGS studied about 250 fish and shrimp farms across the nine highest producing States and one Union Territory.

This included fresh and brackish water farms in Andhra Pradesh, Tamil Nadu, Pondicherry, Gujarat, West Bengal and Orissa, and freshwater farms in Bihar, Jharkhand, Chattisgarh, and Assam. The objective of the study was to assess the condition of fish and shrimp farms in India on animal welfare, public health, and environmental hazard standards. All of the fish and shrimp farms had toxic levels of lead and cadmium, and all the shrimp farms that the surveyors visited were releasing this toxic waste water directly into the nearby canals or estuaries.

None of the fish farms had outlets for this water because of which dirty water was being recirculated, posing a grave threat to fish and human health. The unhygienic conditions led to frequent disease outbreaks at half the farms visited, and which caused significant commercial losses. "At several instances, farmers were found to be selling these diseased fish and shrimps at the local market to minimise their losses. 65% of the fish farms had poor dissolved oxygen levels, which means fish were struggling to survive with high mortality rates.

Banned fish species like Red-bellied Piranha and Catfish are farmed intensively in several states accompanied by heavy antibiotic use," the authors note in their report. Varda Mehrotra, executive director of FIAPO said in a statement, "How we see fishes is extremely problematic.

There needs to be a central and state level regulatory framework for freshwater & brackish water aquaculture, and the Aquaculture Authority needs to be empowered to work directly with Animal Welfare Board of India and the Union environment ministry to strictly enforce aquaculture specific laws. Fishes deserve the same level of legal protection as other animals.

And, considering the amount of antibiotics used and the water quality, the Food Safety and Standards Authority of India should be empowered to not just regulate the end product, but the conditions in which the fishes are grown."

### **India: Study flags appalling conditions at fish farms across the country, including Bihar**

<https://www.outlookindia.com/newscroll/study-flags-appalling-conditions-at-fish-farms-across-the/2020602>

"Consumers of fish and shrimps across the country could be staring at a health hazard on account of appalling standards of hygiene and reckless use of chemicals at farms where these are reared, says a study. Jointly conducted by the Federation of Indian Animal Protection Organization (FIAPO) and the All Creatures Great and Small (ACGS), the study is based upon investigation of 250 farms across 10 of the highest fish-producing states.

States like Bihar, Jharkhand, Chhattisgarh and Assam were surveyed for freshwater fish while Andhra Pradesh, West Bengal, Odisha, Tamil Nadu, Gujarat and Puducherry were covered for both fresh water and seawater varieties. "We have found shocking conditions in this growing sector. Fish are kept in cramped, filthy enclosures, with no waste management. They are cut up alive.

The contaminated water from these fish farms is released into local water bodies and estuaries that spread the parasites further, causing harm to the fish population as well as humans", Verda Mehrotra, Executive Director of FIAPO, said in a release. She said in Bihar, the investigation was carried out in the districts of East Champaran, Muzaffarpur, Begusarai and Patna covering 20 fish farms. 100 per cent of the fish farms had toxic levels of lead and cadmium, scoring extremely poor on the public health hazard scale (0.25/1).

Additionally, cent per cent of the fish farms had no outlets, which implied dirty water being re-circulated posing a grave threat to fish and human health. Several farmers admitted massive losses due to prevalent diseases and massive floods every year. All the fish farms lacked basic maintenance and were littered, and open defecation is a regular practice near the fish farms. All the fish farms had poor dissolved oxygen levels, which means fish were struggling to survive with high mortality rates.

Indiscriminate use of antibiotics, insecticides and pesticides was also rampant, she said. "Such haphazard management practices also invite the risk of anti-microbial resistance. AMR is the next health catastrophe waiting to be unleashed. Recently, a group of fisheries scientists called for greater awareness about Anti- microbial resistance (AMR) addressing the need to curb the transmission of AMR bacteria to humans from fish and shrimps", she added.

The unhygienic conditions of meat markets also give rise to events of pandemics, malaria, typhoid, and jaundice, according to Anjali Gopalan, Managing Trustee of ACGS. "We do not seem to align our considerations with our lifestyles and actions, the brunt of which is faced by aquatic life because they exist away from human civilisation. "

"The lack of marine sentience and sensitivity of the public as well as industries to the health of fish is revealed when we learn about the administrative and political indolence in the country. Consequently, when this is clearly a public health concern we must start today by mobilising resources to improve the conditions to avoid an aquaculture disaster", she added. "

"Aquaculture is factory farming of fishes, and it constitutes the same systemic problems encountered in the factory farms of land animals: crowding, stress, disease, pain, and death. If you don't want to support that, then don't buy fish, warned Dr Jonathan Balcombe, scientist, speaker and advisor at FIAPO.

**India: Supporting marine fishing sustainably: A review of central and state government support for marine fisheries in India**

<https://www.iisd.org/system/files/2021-12/sustainable-marine-fisheries-india-en.pdf>

"This report provides—for the first time—an open-access database of support measures for marine fisheries by the Indian Central Government and four state governments (Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu) based on information from government sources.

It recommends an in-depth assessment of the socio-economic and environmental impacts of fuel support; support for deep-sea fishing, mariculture, and vessel modernization; and income support. The report is available at: <https://www.iisd.org/system/files/2021-12/sustainable-marine-fisheries-india-en.pdf>

### **India: Sustainable and responsible development of fisheries sector**

<https://indiaeducationdiary.in/sustainable-and-responsible-development-of-fisheries-sector-in-india/>

"World Environment Day (WED) is an annual event celebrated across the Globe to create awareness on Environmental issues. It was established by the UN General Assembly in 1972, to mark the opening of the Stockholm Conference on Humans interfering with the Environment. The sustainability and conservation of our aquatic ecosystem which constitutes of various freshwater habitats, with oceans and seas covering more than 70 percent of the Earth, has gained a lot of attention in recent times at national and international forums. It also underpins key economic sectors, such as fisheries and tourism.

However, today these habitats are constantly facing huge threats from various actors. As predicted by eminent scientists and practitioners across the world, millions of tonnes of our plastic waste released into these habitats by humans are harming creatures, including seabirds, turtles, crabs and other species.

To curb the impact caused to these habitats, it is imperative that more awareness be created amongst nations to take responsible actions, work towards conservation of environment and leverage existing resources to reverse and restore the planet Earth. However, at the same time one must understand that protecting and restoring the entire ecosystem is a massive task and needs to be taken up collectively by nations across the globe on priority and at a faster pace.

The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India truly recognizes the urgency to protect these habitats while ensuring optimal utilization of our national resources. In view of the same, the schemes and programmes being implemented by the Department, aims at the growth of the fisheries and aquaculture sector, keeping sustainability of environment as prime focus.

“Blue Revolution”, the flagship scheme of the Department, launched in the year 2015, aimed to achieve economic prosperity of the country and the fishers and fish farmers as well as contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

Under Blue Revolution, total funds of Rs. 2573 crores were released as central assistance to various States and Union Territories and various organisations for sustainable and holistic development of fisheries and fishers' welfare, along with promotion of environment friendly aquaculture practices. As part of Blue Revolution scheme, various environment friendly technologies were adopted for safeguarding of our aquatic ecosystem.

Recirculating Aquaculture Systems (RAS) were supported; RAS technology is eco-friendly, water efficient, and is a highly productive intensive farming system, with zero environmental impact. Likewise, Sea Cages for marine fish culture were promoted and supported, Seaweed cultivation has also been promoted, fish lean/ban period have been implemented during the breeding season amongst many other initiatives. Solar panel units for producing energy to operate water pumps, aerators and carrying out other fisheries related activities were provided assistance under the Blue Revolution Scheme.

This entailed providing one-time central assistance to beneficiaries for procurement and installation of solar power support system for fisheries. These initiatives amongst others have played a major role in protecting the land as well as the aquatic ecosystems. To further build-on the achievements in the fisheries sector through implementation of the Blue Revolution Scheme and develop the sector in a sustainable and responsible manner, the Government of India launched a flagship scheme of "Pradhan Mantri Matsya Sampada Yojana (PMMSY)" in May 2020, with highest ever estimated investment of Rs. 20,050 crore under the Aatmanirbhar Bharat package.

PMMSY aims at sustainable and responsible development of fisheries sector with focus on infrastructure, species diversification, sustainable livelihoods, aquatic health management, robust database, innovations, collectivization, modernization of value chain, export promotion, establishing a robust fisheries management framework, with special focus on implementing technologies that ensure protection of habitats and fisheries wealth.

In this context, the Department is taking up a range of activities including implementation of bio-flocs, Recirculatory Aquaculture System (RAS) with special focus, Reservoir cage culture, open sea cage culture for conservation of marine fisheries and risk mitigation to marine fishers, sea weed cultivation for supporting livelihood and ushering prosperity for coastal communities especially women in sustainable environment friendly manner along with providing livelihood and nutritional support for fishers' families for conservation of fisheries resources during fishing ban/lean period.

Furthermore, the Department is also actively promoting installation of Bio-toilets in fishing vessels to keep the marine environment clean and prevent contamination of marine resources. PMMSY aims to promote sustainable fish production systems/methods with minimal environmental impacts to support more crop per drop.

Integrated Modern Coastal Fishing Villages will be developed under PMMSY with investment of Rs. 750 crore to leverage Blue economy/Blue growth with an aim to maximize economic and social benefits to coastal fishers while minimizing environmental impact through sustainable fishing practices.

Project proposal with total outlay of Rs. 2881.41 crore have been approved under PMMSY during 2020-21 for sustainable development of fisheries and fisheries related infrastructure including fishers' welfare. Alongside, the Fishery Survey of India (FSI) is also developing new fishing practices and gears that will help in minimizing the physical and biological degradation of marine ecosystem.

The diversified fishing methods like trap fishing, hook and line, bottom set vertical longline, tuna longline, mid water travel, pot fishing etc. have been introduced and successfully experimented with zero damage to the marine ecosystem. The Department understands that healthy aquatic habitats are vital to meeting sustainable development goals and hence, restoring and recreating them is a massive challenge.

The Department is committed to improve the biodiversity and maintain ecological balance to bring about a positive change through its environment friendly programmes, policies and practices in the country. It is thus the endeavor of the Department of Fisheries that the growth of the fisheries sector be recognized not only for its contribution towards the growth of the Indian economy but also for outcomes that are economically, socially and environmentally inclusive.

Additionally, the Department will continue to work with nations at international forums to collaborate keeping conservation of environment and ecosystem as priority and in best interest of all humankind.

### **India: Sustainable animal feed technology helps India's shrimp farmers overcome disease in animals**

<https://www.forbesindia.com/article/brand-connect/sustainable-animal-feed-technology-helps-indias-shrimp-farmers-overcome-disease-in-animals/65635/1>

"India is one of the world's top producers of shrimp with a sizable share of production volume of global fisheries and aquaculture. The country's low consumption level of shrimp compared to other major producers like China have allowed it to export the vast majority of its shrimp and become the largest exporter in the world. A recent article by A. Victor Suresh, Ph.D., President of the Society of Aquaculture Professionals in India, noted that exports have grown 430 percent in volume during the last decade.

While this is impressive, one pervasive issue that has negatively affected the industry since it began in the late 1980s is disease among shrimp populations. When the industry was just starting to take off, growth was hampered by White Spot Syndrome Virus (WSSV). Today, WSSV is more contained, but shrimp farmers and producers of all sizes have to contend with other malaise issues such as White Feces Disease (WFD).

Dr. Suresh stated in the aforementioned article, published by the Global Aquafeed Alliance, that the Indian shrimp farming industry has an established production capacity of 120 billion postlarvae (PLs) per year, from an estimated 550 to 600 hatcheries. But due to disease and other issues within the industry, India only produced 7 billion PLs in 2019. Menon Renewable

Products, an ag-tech startup in San Diego, California, is working to change that with its functional ingredient, MrFeed. MrFeed is a disruptive technology that significantly enhances animal growth and gut health.

Through inclusion of a spectrum of unique prebiotics, nucleotides and peptides, MrFeed® enhances digestibility and promotes animal health and welfare, while reducing the need for antibiotics and other disease remediation treatments. Through an exclusive commercial partnership between Menon and Growel Feeds, one of the leading aqua feed manufacturers in India specializing in shrimp and fish feeds, MrFeed is helping India's shrimp farmers overcome various diseases like WFD, WSSV and others.

Announced in 2018, the partnership fostered the creation and expansion of Growel's new functional feed for shrimp, Nutriva F15. This feed naturally enhances the immunity of shrimp to combat harmful pathogens. It contains MrFeed® and other patented nature-derived components that:

- ? Elicit general immunity against attacks by bacterial and viral pathogens.
- ? Demonstrate protection of the hepatopancreas from damages caused by pathogens.
- ? Support the health of beneficial microbes of the gastrointestinal tract while suppressing environmental pathogens.

Stimulate appetite and enable feed intake when animals are affected by disease agents.

- ? Provide superior nutrition and high digestibility to help animals recover fast from disease factors.

Trials of Nutriva F15 and MrFeed® have produced promising results. In one study conducted using Nutriva F15 with MrFeed®, it took 5-8 days of feeding to achieve complete control of WFD in 60-90% of the ponds tested. By comparison, placebo feeds showed 0% control of WFD. Overall, Nutriva F15 with MrFeed results in higher survivability, increased yields and ultimately higher profits for shrimp producers.

MrFeed has been tested on more than 400 million shrimp in trials around the world, averaging a 25% increase in yield as enhanced immune system health drives faster growth and higher survival. As the partnership in India between Menon and Growel continues, Dr. Suresh Menon, the Founder and President of Menon, is confident MrFeed will help the shrimp industry overcome disease issues.

“We are seeing two common traits in the trials conducted on MrFeed across all animal types. The animals grow faster and larger, and their immune systems are improved, which enables them to ward off diseases without the use of antibiotics,” said Dr. Menon, who hails from Kerala, India, from Vengalil Calicut and Meempat Malappuram families. “We see MrFeed as instrumental in overcoming many of the disease challenges being faced by today's aquaculture industry, which are prevalent in India.”

### **India: Tapping the potential of our marine wealth**

<https://www.thehansindia.com/hans/opinion/news-analysis/tapping-the-potential-of-our-marine-wealth-681783>

"Ours is a country endowed with vast natural resources. In addition to its large land area, It possesses a long coastline (close to 10,000 km if one takes the Andaman and Nicobar Islands and

the Lakshadweep Islands into account), huge natural lakes, many long and wide perennial rivers with dams and reservoirs brought into existence as part of major irrigation projects. The seas are rich sources of marine wealth including minerals and fishery.

And, while the rivers are sources of riverine fish, the lakes and other freshwater water bodies comprise a vast source of freshwater fish. Having once been the Managing Director of the (then) Andhra Pradesh Fisheries Development Corporation (APFDC), in addition to dealing with fishery as an allied Sector of agriculture which I handled for a substantial amount of time in my career, I thought I would share with the readers some ideas I have entertained for some time now on the subject of the status and potential of the fisheries sector in India.

We must note, to begin with, that the marine fishery sector, in particular, offers not merely the scope for a vast amount of revenue for the country (in terms of realisations from exports, especially of marine products such as fish and prawn), but is also capable of generating substantial employment, apart from providing protein rich nutrition. Globally, the monetary value derived from the oceans, including energy, minerals, and fisheries is estimated at US \$ 24 trillion.

Significant assets lie hidden in the deep oceans, but current state of technology is not sufficient to guarantee their safe and sustainable exploitation. The unfortunate part, however, is that the resources of the country remain largely untapped. And, whatever little development does take place, is mired in several issues including lack of technological know-how, exploitation by middlemen, shortage of capital and absence of infrastructure. Over – capacity of fishing fleets, inefficient management systems, marine pollution, declining biodiversity, habitat destruction and climate change also beset the sector.

Therefore a major overhaul of fisheries sector and its governance is critically needed. Avenues to sustain production from marine fishery sources need to be strengthened. For instance, an estimated million active fishermen using indigenous craft and gear contribute about 65 per cent of the total marine fish production of the country.

In addition, studies have shown the returns per unit of investment of non-powered boats to be twice that of the powered boats, and capable of generating nearly seven times more direct employment opportunities. Still, very little has been done either in terms of protecting the poaching of their territory by mechanised vessels or providing them the advantages of economies of scale by aggregating them into bodies such as cooperatives or FPOs, so that access to technology, capital, and marketing opportunities is facilitated.

The deep sea fishery sector, in particular, is a source of great concern. The situation, that obtained nearly 40 years ago when I was the Managing Director of the APFDC, I regret to state, has not changed in any significant manner. For instance, against the Annual Potential Yield (APY 2018) estimate of the available resource in India's jurisdictional waters [defined as the Exclusive Economic Zone (EEZ) stretching up to 320 kms from the coast line], of 5.31 million metric tonnes, the actual production was only 371.4 million metric tonnes.

Another estimate has it that three to four million tonnes of fish can be derived from the seas around India, about three times the present yield. What is more, most of the exploitation takes place in the shallow territorial waters between the coast and the 20 km nautical limit, with mechanised vessels dominating the scene. The poorest of coastal fishermen operating traditional craft such as catamarans have literally been crowded out of their traditional space by the dominance of the mechanised vessels.

On the other hand, the huge potential for deep sea fishing, an enormous scope for which exists in the EEZ, through advanced technologies in methods such as purse – seining, trawling and long - line fishing, has not had even its surface scraped. Deep Ocean fishing is another emerging field. It, of course involves higher capital investments and recurring costs. The lack of sufficient skilled crew is another problem.

Large fishing vessels with deep sea going facilities, adequate carrying capacity and on - board post – harvest handling facilities, need to be introduced from mainland and island territories. In addition, introduction of large 'factory' or 'mother' vessels can enable catch to be collected afresh in mid – sea and transported to mainland or processed on board. Deep Ocean a fishing is expensive compared to the coastal trawling operations.

In addition, an estimated harvestable potential of two million metric tonnes of deep ocean resources in these areas offers a potentially new frontier for commercial fisheries. I remember vividly how I had been sent to Thailand to negotiate a 'charter', of fishing vessels from that country by India. The arrangement involved the Indian party hiring out vessels belonging to Thailand, in exchange for permitting them to fish in Indian waters, merely accepting a small share in the catch, and, therefore, the income therefrom.

While the agreement between APFDC and its counterpart from Thailand, did stipulate that a certain percentage of the crew of each vessel would be trained by Thai fishermen every year (thus paving the way for Indian crew to take over the operation of the vessels over a period of five years). That stipulation remained largely on paper owing to a poor regulatory environment. In addition, from 2004 onwards, Indian entrepreneurs were allowed to import and operate fishing vessels in the deep waters with a combination of Indian and foreign crew.

Unsatisfactory and inadequate while it was, even that limited arrangement was suddenly, and more or less arbitrarily, stopped by the government of India in 2011, ostensibly for security considerations. This will result in a huge fishery resource generating itself in the deep seas, year after year, and provides a source of employment and revenue, to countries poaching in Indian waters, year after year.

In fairness to the Government of India, one must note that significant steps have been taken to provide infrastructure to promote, and encourage, marine fishery, such as the creation of fishing harbours and the provision of infrastructural facilities for handling, storage, transportation and marketing of fish and fish products at all major fish landing centres (estimated at 1400), along both the coasts of the country.

While this initiative augurs well for the mechanised fishery community, it is necessary to ensure that the marine fishing industry should not be supported at the risk of obliterating the traditional fisheries, some signs of which phenomenon are, regrettably, already in evidence in some parts of coast abutting states such as Karnataka. After all, with all the modern developments taking place, the small scale fishermen and their traditional methods still remain the backbone of the marine fishing industry of the country.

### **India: The biggest producer of farmed shrimps and accounts for nearly 6% of the global fish production**

<https://www.financialexpress.com/economy/despite-challenges-we-have-exported-seafood-products-worth-700million-till-october-ks-srinivas-chairman-marine-products-export-development-authority-interview/2383393/>

"India is the biggest producer of farmed shrimps and accounts for nearly 6% of the global fish production. In an interview with FE's Rajesh Ravi, KS Srinivas, chairman of the Marine Products Export Development Authority (MPEDA), says seafood exports have bounced back and looks robust. He talks about the impact of the Covid-19 on the seafood sector and its outlook.

Excerpts: How is India's seafood exports doing this fiscal? Has it come out from the pandemic-induced constraints? We have come out of the Covid-19 situation and are doing better than 2019-20. The international market has opened up. The last fiscal was bad for seafood exports. During the first half of 2019-20, exports stood at \$3.4 billion and they dropped to \$2.7 billion in 2020-21. For H1 of 2021-22, it now stands at \$3.7 billion. There is a growth of 37% in value terms and 23 % in volume terms year-on-year.

The target fixed for the fiscal is \$7.8 billion and we have achieved almost 60%. If not for the huge increase in freight charges our exports would have reported an increase of 40-45% for H1. Despite all the constraints of the pandemic, we also achieved an increase in the unit price of exported seafood to \$6.17 per kilogram from \$5.63 reported earlier. There are reports that exports to China have to go through stringent checking and there are other kinds of barriers? China's market is a big concern as they are taking extra precautions due to Covid.

There is multi-level checking and clearance is delayed. China is looking for Covid-19 nucleic acid even in the outer packaging materials and has now suspended 51 Indian units indefinitely. Interestingly, despite all problems, we have exported \$700 million worth of seafood products till October (April-October 2021) and have achieved 68% of the yearly target of \$1 billion. Has aqua culture production declined? There are reports that aquaculture farmers' reduced seeding in farms due to the lockdown? The production, which includes black tiger (monodon), is around 8.5 lakh tonnes and it is increasing.

Lately, there is more demand for monodon. There is also some concern that vannamei farming is getting costly and we should focus on our black tiger. Area increase is happening, but not at the pace we would like it to be. The area under aquaculture farming is around 1.6 lakh hectares. We need to increase the area as the future is in aquaculture. Are you concerned about fish landings

on the Indian coast? Increasing cyclone activities on the Indian coast is worry- ing. During the first half of the year, the total fish landing in India is 2,18,600 tonnes, com- pared to 1,85,000 tonnes in the same period of last fiscal. But again, there are variations and concerns in the pattern of landing. Except for Gujarat and Andhra Pradesh, all other states are reporting a decline in fish landing. Kerala and Karnataka are reporting a huge decline in landing.

Freight charges have increased and the availability of containers is said to be on the lower side? It is a global phenomenon. There is a severe shortage of containers and freight charges have gone up substantially. For example, if an exporter had to export from India to US same time last year, he had to pay around \$4000-\$8000 per container. Now he has to pay around \$14,000-22,000 for a container. The profits are under pressure for exporters.

As part of the Golden Jubilee year of MPEDA, what are the initiatives taken to support the farmers and exporters? We are expanding the quarantine facility in Chennai to take care of the increased demand for vannamei broodstock. Secondly, we are going to modernize fishing harbours.

The MPEDA has taken the initiative to upgrade and modernize the infrastructure as we feel that hygiene is important and this will fetch us better returns. Harbours need air-conditioned auction halls, drinking water, and own ice plants. Thirdly, we will increase the brood- stock of the black tiger. MPEDA started the domestication of tiger shrimps in Andaman in 2014 and we will soon start a broodstock multiplication centre.

**India: The Island Coastal Regulation Zone (ICRZ) Notification, 2019, dated 01 January 2021, (S.O. 2(E))**

[https://www.icsf.net/wp-content/uploads/2021/02/legal\\_india/documents/09835593.pdf](https://www.icsf.net/wp-content/uploads/2021/02/legal_india/documents/09835593.pdf)

"S.O. 2(E).—Whereas, by notification of the Government of India in the Ministry of Environment, Forest and Climate Change number S.O. 1242(E), dated the 8th March, 2019 [hereinafter referred to as the Island Coastal Regulation Zone (ICRZ) Notification, 2019], the Central Government declared certain coastal stretches as Coastal Regulation Zone and restrictions were imposed on the setting up and expansion of industries, operations and processes in the said zone;

And Whereas, the Central Government have received representations from Andaman and Nicobar Administration regarding re-categorisation of Great Nicobar Island from Group –I to Group –II islands under the provisions of the Island Coastal Regulation Zone (ICRZ) notification; And Whereas, the National Coastal Zone Management Authority in its 41st meeting held on the 4th November, 2020 had also decided that the re-categorisation of Great Nicobar need consideration;

And Whereas, the Central Government, having regard to the provision of sub-rule (4) of rule 5 of the Environment (Protection) Rules, 1986, is of the opinion that it is in public interest to dispense with the requirement of notice under clause (a) of sub-rule (3) of rule 5 of the said rules for amending the Island Coastal Regulation Zone (ICRZ) Notification, 2019. Now Therefore, in

exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986, the Central Government hereby makes the following further amendments in the Island Coastal Regulation Zone (ICRZ) Notification, 2019, namely: -

In the said notification, - (a) in paragraph 1, for clause (ii), the following clause shall be substituted, namely: - “(ii) The eight bigger oceanic islands in Andaman and Nicobar (ICRZ Islands) shall be grouped as follows: - Group-I: Islands with geographical areas >1000 sq.km such as South Andaman, Middle Andaman and North Andaman. Group-II: Islands with geographical areas >100 sq.km but < 1000 sq.km such as Baratang, Little Andaman, Havelock, Car Nicobar and Great Nicobar.”; (b) in paragraph 8, in clause (i), for sub-clause (e), the following sub-clause shall be substituted, namely:

“(e) CRZ map in 1:4000 scale, drawn up by any of the agencies identified by the Ministry of Environment, Forest and Climate Change vide its Office Order number J-17011/8/92-IAIII, dated the 8th August, 2019 using the demarcation of the HTL or LTL, as carried out by NCSCM.”. [F. No. 12-12/2018-IA III] SUJIT KUMAR BAJPAYEE, Jt. Secy.

### **India: The need for seriously safekeeping our wetlands**

<https://www.dailypioneer.com/2021/state-editions/the-need-for-seriously-safekeeping-our-wetlands.html>

"In the past few years wetland conservation has become an overloaded buzzword when it comes to environmental conservation. In fact the government as well as community have begun realising that without resuscitating and replenishing our wetlands, all attempts to ensure sustainable water supply in our cities will remain superficial. So, conserving the existing rather ossifying wetlands becomes non negotiable, if we are to accord priority to ecological preservation in urban as well as rural regions of India.

This stimulates two relevant questions. What are wetlands and why are they so imperative to the ecosystem? In an unadorned language, wetlands are those areas of land that are covered by water. Not only are they flooded by water either seasonally or permanently, but they also support a unique ecosystem. Wetlands can be easily identifiable as marshes, bogs, swamps, lakes, ponds, flood plains or even the mangrove regions near rivers and sea. These wetlands not only serve as a reservoir of water, but they also support a wide variety of flora and fauna.

In fact when situated near rivers and sea they act as natural barricades from floods, besides being a site of ground water. They help filter contaminants from water before it seeps into major water bodies and into the ground water. Their moderating impact on surrounding weather conditions is still being studied, with stronger evidence in their favour coming to light each day. No wonder it is appropriately stated that while forests are considered the lungs of the earth, wetlands can be referred to as earth's kidneys.

However despite being a determinant of a healthy ecology, it is interesting to note that for decades altogether, the importance of wetlands was acknowledged neither by society, nor by the government. As a sardonic fact, any vacant marsh land or hyacinth covered water body was labelled as wasteland. Thus a majority of the wetlands became victims of proliferating human need for expansion and lack of awareness about their importance.

A wave of sensitisation appeared in 1971, when the Convention on Wetlands or the Ramsar Convention came into being. This was an international treaty which spoke about sustainable uses of wetlands around the world. Since then several vulnerable wetlands sites have been identified and enlisted under this convention, when found to be of international importance. It surprises little that by 2020 more than 2400 international wetland sites have already been enlisted.

Moreover zooming into the Indian context- India had become party to the Ramsar Convention in 1982, and as of today around 42 wetlands in the country have become Ramsar sites. This makes it the largest in this context in the entire south east Asia. While this may have accorded the much needed importance to our wetlands, ignorance among populace at large continues to haunt prospects of wetland resuscitation. An official estimate states that we are losing our wetlands at an alarming rate of two to three per cent each year.

Among the major anthropogenic causes of this wetland erosion are overfishing, agriculture, deforestation, land encroachment and urban development. While across the country these are the major reasons behind wetland degradation, a microscopic analysis of Uttarakhand's scenario reveals two issues. One is the fact that since its attaining statehood back in 2000, the pattern of urbanisation has been unsystematic and the other is that until recently, not even one wetland from the state had achieved recognition under Ramsar convention.

Until recently when the Asan Conservation Reserve in Dehradun district became the first wetland from Uttarakhand to be recognised by Ramsar. This is also rather paradoxical given that the National Wetlands Conservation Programme of India has been supporting wetlands conservation throughout the country since 1987. Uttarakhand being a mountainous terrain is an ecologically sensitive territory.

This is also highlighted by the decision of the government to declare many more areas in the state as Ecologically Sensitive Zones. In the last ten years the gross percentage rise in the area under forest cover has been abysmally low. These factors when rolled into one explain perfectly the drying up of water bodies in the hills, recurrent flooding near rivers banks in cities, depletion of ground water and overall change in the climate.

Almost every year during the monsoons several low lying residential settlements in Dehradun, experience flooding. It is surprising that this happens even in the years when the density of rains is light or moderate. On the outskirts of the city too, water logging persists for long periods of time in the monsoon months. The cause behind this menace stems from how the wetlands surrounding the river basins and lakes have been used up for construction.

The excess water cannot seep into concrete surface increasing runoff and bringing floods. This not only threatens human habitat but also exacerbates the risk of many water borne diseases in

the surroundings. Another neglected issue is how the construction upon lakes and ponds and their abuse as waste dumping sites, has led to ground water contamination. Since the microbes present in wetlands absorb toxins before the excess water is allowed to percolate under the ground, the risk of ground water toxicity also reduces.

So whenever we see a rather unpleasant smelling and moss covered water body, instead of cringing by assuming it as waste site, we must acknowledge it as a wetland where a whole range of biodiversity is at work to purify our water table. The case of missing migratory birds from most quags in the state is also associated with disappearing wetlands itself. Besides water filtration, nourishing flora fauna and preventing floods and runoffs, wetlands also contribute to economic growth as they offer charming tourism sights.

Unique plants, reptiles and terrestrial species are an attraction to visitors and photographers from around the world. No wonder many national wetlands have become UNESCO world heritage sites as well. So we need to remember that whenever a wetland is being exposed to garbage or construction debris, reclaimed or is intoxicated by factory chemicals, an integral organ of our ecosystem is being violated. The complete cycle of ecology is traumatised when wetlands are not allowed to flourish and perpetuate.

**India: The WTO is hopeful of reaching agreements on curbing harmful fisheries subsidies and pruning domestic farm subsidies at the MC 12 in Geneva during November 30-December 3**

<https://www.thehindubusinessline.com/economy/policy/wto-dg-to-meet-sitharaman-goyal-to-discuss-fate-of-ministerial-conference/article37037202.ece>

"WTO Director General Ngozi Okonjo-Iweala is scheduled to meet top Indian Ministers, including Finance Minister Nirmala Sitharaman and Commerce Minister Piyush Goyal, later this week in New Delhi to gain support for a successful 12th WTO Ministerial Conference (MC 12) next month.

The WTO is hopeful of reaching agreements on curbing harmful fisheries subsidies and pruning domestic farm subsidies at the MC 12 in Geneva during November 30-December 3; but India wants to provide consent only if the pacts are balanced and developing country sensitivities are recognised, an official tracking the matter told BusinessLine.

"The fact that the WTO DG is visiting India before the WTO MC 12 shows the important position India holds in the ongoing negotiations, especially as a champion of interests of developing countries and LDCs. In the on-going negotiations in Geneva, India has put forward some proposals to protect the livelihoods of poorer nations that urge rich members to end their harmful fisheries and farm subsidies.

Indian Ministers will ask the DG to ensure that the proposals are given due consideration," the official said. Iweala is likely to meet both Goyal, who will represent India at the MC 12, and Sitharaman, who is one of the primary forces in deciding the country's negotiating position on

the key issue of subsidies, during her India visit beginning on October 22. She may also meet some members of the civil society, the official added.

Stark differences exist

Hectic parleys are on at the WTO to bridge differences in the areas of fisheries subsidies and agriculture subsidies so that common landing zones can be reached in time for the MC 12. However, there still exist stark differences in positions held by many developed and developing nations prompting the WTO DG to hold consultations with political leaders in key member countries for a deeper understanding of the situation.

For instance, in the area of fisheries subsidies, India has been seeking carve-outs for developing countries so that they can not only protect interests of artisanal fishers but also not give up policy space for future support programmes. Many developed nations are against extending broad exemptions from subsidy cuts to developing countries.

In the area of domestic farm subsidies, India wants a permanent solution to allow it to provide MSP support to farmers without worrying about ceiling limits being agreed to at MC 12. It also wants developed nations to take on commitments to give up their high entitlements for domestic farm subsidies that only a few rich nations and a couple of developing countries “unfairly” enjoy at the WTO.

“India has always supported the WTO and wants the MC 12 to be a success. But it will not back agreements that would tilt the balance more in favour of developed countries and ignore interests of the poor,” the official said. The 12th Ministerial Conference of the WTO was initially scheduled in June 2020 in Kazakhstan but had to be postponed due to the Covid-19 pandemic.

### **India: To ensure maritime security and keep the vast coastline safe**

<https://www.financialexpress.com/defence/indian-navys-sea-vigil-21-to-ensure-maritime-security-and-keep-the-vast-coastline-safe/2168975/>

"For the maritime security and Coastal Defence, the DAC has already given approval for the induction of Next-Generation Maritime Mobile Coastal Batteries (Long Range) or, NGMMCB. Two day Ex-Sea Vigil will be conducted along the entire 7516 km coastline and Exclusive Economic Zone of India. Starting Jan 12-13, 2020, the exercise which is being coordinated by the Indian Navy will be involving all the 13 coastal States and Union Territories, other maritime stakeholders, and this includes the fishing and coastal communities.

More about Pan-India ‘Sea Vigil-21’

The number of units participating and in terms of the objectives to be met, the scale and the conceptual expanse of the biennial exercise is unprecedented in terms of the geographical extent. This exercise is a build-up towards the major Theatre level exercise TROPEX [Theatre-level Readiness Operational Exercise], conducted by the Indian Navy every two years. Both TROPEX

and Sea Vigil will cover the entire spectrum of maritime security challenges, including the transition from peace to conflict.

### Assets

All the assets of the Indian Navy, Coast Guard, Customs and other maritime agencies will be participating in SEA VIGIL. The conduct of Sea Vigil is also being facilitated by major ministries including of Defence, Home Affairs, Fisheries, Customs, Shipping, Petroleum and Natural Gas, State Governments and other agencies of Centre/ State. Importance of Sea Vigil This exercise which is being conducted for the second time is expected to provide a realistic assessment of strengths and weaknesses in coastal security.

And at the end of the drill, there will be an analysis of the findings and actions will be initiated for further strengthening maritime and national security. Several smaller scale exercises are conducted in coastal states on regular basis and these include the combined exercises amongst adjoining states. When an exercise is conducted at a national level it helps in assessing the preparedness in the maritime security and coastal defence.

After more than 10 years since the attack, the first edition of Ex Sea Vigil was conducted in 2019, where all agencies which were associated in the coastal security had participated. It had the participation of the Indian Navy submarines, all operational ships, as well there were units of Indian Coast Guard, the Indian Air Force & the Army. How will the drill be conducted? There will be simulated attacks on vital installations and assets along the coastline.

Also, a wide range of contingencies are planned and this will help in assessing the response, coordination and information sharing between agencies. There will be multi-agency teams deployed in coastal districts which will be undertaking security audit of different vulnerable locations like Fish Landing Centers, and also major, minor and intermediate ports, lighthouses, coastal police stations, control rooms and operations centres.

### Mobile Coastal Batteries

For the maritime security and Coastal Defence, the DAC has already given approval for the induction of Next-Generation Maritime Mobile Coastal Batteries (Long Range) or, NGMMCB. These units will be equipped with supersonic BrahMos anti-ship missiles and will operate as a cluster of Surface to Surface missile (SSM) complex along with a Command & Guidance mobile unit. How do these help? They help directly in enhancing the Coastal defence capabilities of the navy's existing Mobile Missile Coastal Battery (MMCB) Squadrons, which carry an older version of SSMs.