

Kerala Sea Erosion News Articles

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Kerala: ₹2,450-cr scheme to rehabilitate fishermen

<https://www.thehindu.com/news/national/kerala/2450-cr-scheme-to-rehabilitate-fishermen-in-kerala/article66490599.ece>

"The Kerala government has drawn up a comprehensive scheme of ₹2,450 crore for the rehabilitation of fishermen across the State. The government has already rehabilitated as many as 2,321 families from coastal areas hit by severe coastal erosion triggered by global warming and climate change through the Punargeham scheme.

A total of 21,220 families living within 50 m of the high tide line will be rehabilitated to safer locations. Out of this, 8,675 families have informed their willingness to relocate to safer locations, said Fisheries Minister Saji Cherian. As part of the Punargeham scheme, 390 flats and 1,931 individual houses have been constructed, while 1,184 flats and 1,373 houses are under various stages of construction.

Further, steps have been taken to rehabilitate 400 families at Muttathara in Thiruvananthapuram by constructing a complex of 50 buildings after acquiring 8 acres of land owned by the Dairy Development department. The government plans to hand it over to the beneficiaries in one-and-a-half years after completing the project under the supervision of the Harbour Engineering department.

Each housing unit will have an area of 635 sq ft, including a common utility, two bedrooms, a hall, a kitchen, and toilet facilities. The Uralungal Labour Contract Cooperative Society (ULCCS) is entrusted with the task of construction. Further, those who have informed of their willingness to move to safer locations can either buy land up to 2-3 cents on their own to build a house or buy land and house together or even identify land in groups and build a flat for which a maximum financial assistance of ₹10 lakh per family will be given, said the Minister.

Besides, flats are being built on government land and private land under the supervision of the Fisheries department, for which a transparent system has been set up with the District Collector as chairman and people's representatives as members to select the beneficiaries, added Mr. Cherian."

Kerala: Fishing fleet to be modernised in phases, says policy address

<https://www.thehindu.com/news/national/kerala/fishing-fleet-to-be-modernised-in-phases-says-policy-address/article66424637.ece>

"The policy address delivered by Kerala Governor Arif Mohammed Khan on Monday emphasised that fisheries continues to be a high-priority sector for the State government.

One of the major focus areas of the Fisheries department is modernisation of the 'fishing fleet' of the State in a phased manner. The State government has also prioritised projects to provide safe dwellings to fishermen by rehabilitating those living in erosion-prone areas.

Through the flagship programme 'Punargeham', 1,473 individual houses and 390 flats have been completed and handed over to the beneficiaries. Under new projects, the department will take up construction of 660 flats at a cost of 120.63 crores at Muttathara in Thiruvananthapuram, Koyiladi in Kasargod, Unniyal and Ponnani in Malappuram, Mr. Khan said in the address.

The department will continue to provide insurance coverage to fishermen and the fishing implements of traditional fishermen. The department will also strengthen efforts to promote aquaculture activities through diversification of species, adoption of innovative technologies and area expansion. The Harbour Engineering department will also continue its activities for modernisation of fisheries infrastructures, fishing harbours and fish markets, Mr. Khan said.

The government will also continue works related to strengthening vulnerable coastal stretches leveraging innovative technologies like geotubes, tetrapods, diaphragm walls, etc. Ten coastal areas prone to sea erosion have also been identified as 'hot spots,' he said in the address."

Kerala: Why activism is a way of life for fishing communities

<https://lifestyle.livemint.com/news/opinion/why-activism-is-a-way-of-life-for-kerala-s-fishing-communities-111672283951499.html>

"Kerala's coastline is a narrow one with more than 2,000 people crammed into every square kilometre of its shore. Most of those living along this beautiful coast are the fisherfolk whose livelihoods are linked to the sea. Exactly a month ago, members of the fishing community clashed with police after their three-month protest against the construction of an international port at Vizhinjam, near Thiruvananthapuram. Work has now resumed at the port, but the incident is another in a long line of activism undertaken by Kerala's fishing community to protect their domain against changes that have adversely impacted their lives and changed the nature of their work. Traditional fishing communities have a deep knowledge of the sea and its creatures, understanding that overfishing and coastal erosion will irrevocably change their world.

In the late 1970s, when trawlers began emptying the seas of fish, the community realised they had to organize and assert themselves to protect their domain. Backing them, was the Latin

Catholic church to which nearly 40% of the fisherfolk of south Kerala belong. The church had been their rallying point since the Portuguese missionaries began working among them in the 16th century. Now, a new wave of young priests and nuns emerged, whose religious training course had exposed them to ideas like Liberation Theology, or the interpretation of religion as a social and political movement to liberate the oppressed. Alongside, non-profit organisations such as Project for Community Organization (PCO) began working within the fishing community. Among PCO's project was an effort to get them out of the grip of money lenders by converting funds collected for a new church building into a community savings scheme.

In the early 1980s, when the agitation against trawler fishing was at its peak, I spoke several times to Father Thomas Kochery, the leader of a group of Liberation Theologists and a man who would go on to lead the demands for the rights of traditional fishing communities for three decades. To the Liberation Theologists, the western idea of religion as charity did not appeal as much as the concept of joining hands with the poor to fight for their rights. Father Kochery, who had been dubbed Naxal Achan or naxal priest, sat in a tiny office belonging to PCO in Thiruvananthapuram. Was he a Marxist, I asked during one of our conversations as the then Congress government kept calling him that. He laughed and said if standing up for the poor and disempowered made him Marxist then he was one. When the Communists were in power they called him a CIA agent, he laughed.

I spent hours and days meeting the clergy, the social workers and the fisherfolk. I went at dawn to the coast to watch the fish being brought in and the auctioning process. I heard their stories of how they had empowered themselves and visited their villages. They were all inspiring stories which showed again and again that empowerment had to come from within. They needed leaders like Father Kochery to help them in their fight for survival.

Over the next ten years they expanded their scope. It was no longer just about fishing rights but also about preserving marine ecology. Father Kochery passed away about eight years ago, but now, nearly forty years later, I see some of those young social workers and activists still alongside the fisherfolk. The recent protest at Vizhinjam proves that seeds of this awareness of their rights to defend their territory were sown more than forty years ago.

One of their major demands is to halt construction of the deep-water port and container transshipment terminal at Vizhinjam. The project which is estimated to cost Rs. 7,525 crore is already more than half complete. The government has agreed to most of their demands, including rehabilitation of families who lost their homes to sea erosion and financial assistance and compensation to families who lost their kin in accidents or weather-related calamities, but it has refused to budge on halting construction.

The fisherfolk say they want to protect their coastline. A recent report from the National Centre for Coastal Research (NCCR) found that about 41% of Kerala's coastline of Kerala has been subjected to varying degrees of erosion between 1990 and 2018. Apart from climate change and rising sea water levels, human intervention in the form of development projects have also contributed to this erosion.

Last month, the protests turned violent and several protestors including some church leaders were arrested. The Latin Catholic Church to which most of the fishermen belong then decided to call a halt to the protests with immediate effect. A.J. Vijayan, chairperson of the Western Ghats and Coastal Protection Forum has said that all "the burning issues raised by the fishing community remain unaddressed", while adding that he will continue to protest. The fight of the fishing communities against the interests of the rich and politically powerful seems unlikely to end soon."

Kerala: fishing communities unfurl their COP27 message – “United For Climate Justice”

<https://www.greenpeace.org/india/en/press/14778/kerala-fishing-communities-unfurl-their-cop27-message-unitedforclimatejustice/>

"COP27 is set to be held from 6th to 18th November in Egypt as countries come together to discuss their collective climate goals. As a response to COP27 and the unfolding climate crisis, on November 8th, Greenpeace India along with Kerala fishing communities unfurled a 27 ft-by-60 ft banner on the open waters of the Chellanam Harbour, one of the worst erosion-impacted coastlines, which read “UNITED FOR CLIMATE JUSTICE”. The aim is to highlight the increasing impacts of climate change and to demand climate justice at COP27. Through this photo-op, impacted fishing communities demanded action from those in power to match the efforts of vulnerable communities and climate justice movements in fighting climate change.

The public action was part of three events organised at Fort Kochi and Chellanam, Kerala, from 5th to 8th of November 2022. The events witnessed critical stakeholders from vulnerable communities across India coming together to express solidarity and challenge the inaction on climate change by country leaders and world leaders. This is a crucial step in the fight for climate justice, as historically marginalised communities, though having the least contributions towards causing the climate crisis, are the most affected by extreme global warming-induced weather events.

“We have put out this message because it is high time the world sees the real-time impact of climate change. We are losing our homes and livelihoods to erratic weather events. Fishing is our only source of income, and it is becoming increasingly challenging to go out into the sea, make a

living and feed our families. Political leaders across the world have wasted enough time. Now, there should be quick, real solutions to our problems. The world needs to know our story.” said Anthony Thayil, KSMTF Erakulum District President.

The key objective of these events was to create momentum and public conversations towards demanding a scientific and community knowledge-driven Climate Adaptation Plan across India. The community members sent the message that they are facing the brunt of climate change already and, at the same time, are stepping up to create spaces for solidarity, hope and resilience. They demanded that their actions should be backed up by the state and society members as they continue to work on radical hope.

Avinash Chanchal, Campaign Manager at Greenpeace India, commented, “The latest IPCC reports highlight the widespread losses and damages to nature and people being caused by the climate crisis. Our climate adaptation policies must align with climate justice and acknowledge that this crisis disproportionately affects marginalised and underprivileged populations and, therefore, ensure that their lives and livelihoods are protected. Furthermore, we will require immediate changes at a systemic level to rapidly decarbonise our economies. Ambitious declarations without any impactful implementation is essentially hollow talk, and must be called out as such.”

The programme’s participants included farmers from Maharashtra who faced drought and excess unseasonal rainfall, fishworkers and coastal dwellers from Chellanam, inland fish workers and residents of the Sundarbans, youth from fishing communities of Kerala and Tamil Nadu, and the survivors of the 2018 floods in Kerala who were rescued by the Chellanam fishing community.

Two other events that took place were the following:

Parallel to (and in response to) COP 27, Greenpeace India conducted a Roundtable Conference at Fort Kochi on 8th November. The conference hosted eminent speakers from various stakeholder groups with a special emphasis on impacted communities. The participants discussed critical issues around climate change such as vulnerability, climate adaptation, the relevance of community action and citizen’s movements, loss and damage, and climate justice.

The speakers included Jackson Pollayil, State President, Kerala Independent Fish workers Federation; Hibi Eden, MP, Ernakulam; Lalit Babar, Ambedkar Sheti Vikas Sansodhan Sanstha; Sankar Haldar, Director, MUKTI (Sundarbans) and impacted community members from the Sunderbans. The main demand from the event was climate justice for the most vulnerable, linked to responsibility and accountability. Ernakulam MP Shri Hibi Eden offered space to raise

questions in the winter parliament session, which added strength and hope to the gathering.

Jackson Pollayil, State President, Kerala Independent Fish workers Federation said, “It is important to have these conversations around community resilience and adaptation to extreme weather events and climate change. Fishermen from Chellanam have been experiencing increasing frequency and intensity of cyclones and rising sea levels. And I can see there are several other communities here who are experiencing varying degrees of the climate crisis. These disasters should not be looked at as individual freak incidents anymore, and instead should become part of the global discourse on Loss and Damage and climate adaptation.”

Between 5th to 7th November, Greenpeace India conducted a storytelling workshop in Kerala for youth community members who have been at the forefront of climate change resilience in Kerala.

As first-line respondents in many situations, the participants were encouraged to document and retell climate stories in realtime to bring out community-based climate resilience stories. Through sessions held by various resource persons, the participants were enabled to respond to climate change and related events through photography, videography and content creation for social media and digital platforms.

Greenpeace India is pushing to work with communities that are the first witnesses of climate change to collectivise their voices — and sees it as imperative that their stories are documented and told by the communities members themselves. The workshop paved the way towards active engagement of the youth and members of the stakeholder communities in Kerala and India.

“We should act if we want to save ourselves. Nature knows how to pay back for the atrocities we commit against her. We are not indispensable, it’s the other way round. Let us realise that, the sooner the better.” says Dr Shahina Rafeeq, writer and workshop participant.

With these events, Greenpeace India aims to create urgency and build solidarity among impacted communities and climate justice movements. This will help to amplify the voices of those most affected by climate change and send an affirmative call-to-action on the need for fast-tracking climate adaptation for vulnerable communities."

Kerala fishing communities unfurl their COP27 message – #UnitedForClimateJustice

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residents of the Sundarbans, youth from fishing communities of Kerala and Tamil Nadu, and the survivors of the 2018 floods in Kerala who were rescued by the Chellanam fishing community

Kerala: Tension prevails as fishermen, local residents stage protest in front of port

<https://www.thehindu.com/news/national/kerala/vizhinjam-tension-prevails-as-fishermen-local-residents-stage-protest-in-front-of-port/article65907382.ece>

"Tension prevailed at Vizhinjam on Sunday when a section supporting the port project and the protesting fishermen led by the Latin Archdiocese stood face to face with provocative slogans for a while. However, timely intervention by the police to disperse the two sides prevented any escalation of the tension. A civil police officer, Shaji, was injured in the melee when the police stood in the middle to separate the two groups.

A bike rally comprising local residents, including women, who bat for the port project reached the protest venue first. The police then blocked the rally from entering the protest venue of fishermen, using barricades. This was followed by another march led by the Latin Archdiocese, which spearheads the fishermen's protest, to the venue.

The police then stood between two groups of people, who raised slogans and booed at each other, to avoid any untoward incident. However, some of the fishermen tried to sneak into the sit-in site of the local residents, which was prevented by the police by parking police buses in the middle. At times, the protestors and the local residents nearly came to blows. A section of protesters also allegedly vandalised the flex boards and flags put up by various political parties.

Meanwhile, the march, titled Jana Bodhana Yatra taken out from Moolampally in Ernakulam district on September 14 expressing solidarity with the protesting fishers reached the protest venue. The rally was taken out from the Vizhinjam fishing harbour to the port with an aim to create awareness about the strike demanding a lasting solution to the concerns of the coastal community. The concluding function was inaugurated by senior lawyer and activist Prashant Bhushan.

The Latin Archdiocese has also decided to intensify the protests from Monday by holding a 24-hour indefinite strike at the protest venue, raising the demand of halting the port construction which, according to it, aggravated coastal erosion, displacing hundreds of families."

Kerala: Climate vagaries to blame for coastal erosion

<https://www.thehindu.com/news/national/kerala/climate-vagaries-to-blame-for-coastal-erosion-studies-vizhinjam-port-kerala/article65810849.ece>

"Most studies held prior to the port works and after point to climate change induced cyclonic systems and unscientific structures built to check sea erosion as the major reasons for the aggravated sea erosion. But fishermen, citing the works for the worsening situation, has called for a scientific study after stopping construction to assess the damage. The protest against the Vizhinjam international seaport in Thiruvananthapuram by fishermen and their families has reached a feverish pitch with the agitating fishers trying to lay siege to the under-construction port at sea and on land.

The round-the-clock protest led by the Latin Catholic Archdiocese, Thiruvananthapuram, does not seem to be ending soon what with the protesters insisting that any compromise other than halting the multi-crore port work, the first phase of which is about to be commissioned next year, cannot be agreed upon. Their main demand is that the port construction should be stopped straightaway to take stock of the damage caused by the construction along the coast of Thiruvananthapuram.

The coastline of Kerala has been witnessing constant erosion in varying degrees due to seasonal changes in waves triggered by monsoons. This gets aggravated if there are cyclonic weather systems over the Arabian Sea and the Indian Ocean. The cyclonic systems will normally leave a long-term impact on the overall beach morphology. If there are any hard structures such as groynes, seawalls, or breakwaters constructed unscientifically, the morphological impact on its adjacent coastal region will be more severe.

Shaji E., Associate Professor and Head of the Department of Geology, University of Kerala, who headed a study on coastal erosion, coastal accretion, and shoreline changes (from 2006 to 2020) along the 58-km coastal stretch between Pozhiyoor and Anchuthengu in Thiruvananthapuram, says an increase in the number of cyclones over the Arabian Sea is one of the main reasons for the rise in shoreline changes along the southern coast.

However, the striking fishermen are not ready to buy the argument. "It is a known fact that the coast of Thiruvananthapuram is highly eroding even before the port construction. Normally, port activities are prohibited on eroding coast as any structure will only aggravate sea erosion. Disregarding these facts, the authorities went head with the work. Further, many scientific studies have earlier proved that coastal erosion is man-made. Even as everyone accepts the fact that coastal erosion has intensified along the coast of capital in recent years, the authorities are not ready to hold a scientific study stopping the port construction. It is against this backdrop the fishermen decided to stall the port construction until their legitimate demands are met," says Joseph Vijayan, spokesperson of Coastal Watch, an outfit which works for the causes of fishermen, Thiruvananthapuram. The social worker and local activist has fought a case in the

National Green Tribunal (NGT) against the port project

When environmental clearance (EC) for the project was challenged in the NGT, it appointed an expert committee and a cell to monitor the shoreline changes in the project area — within 10 km on either side. These committees have been monitoring shoreline changes along a 20-km stretch (Instead of the mandatory 10 km) on either side of the port every six months and filing reports. Contrary to the argument of the fishermen and the Latin Archdiocese, none of these reports endorses any form of coastal erosion due to port construction.

Coastal erosion in Kerala is not limited to Thiruvananthapuram alone. Valiyathura and Shangumugham beaches are the most erosion-hit areas about 13-15 km north of the port site. However, there is no major accretion or erosion in Adimalathura, Pulluvila, and Poovar regions on the south side. Port development is likely to cause minor accretion for about 2.6 km to the south of the port, the maximum rate being 21.6 m per year which will reduce to 0.6 m per year by the tenth year and will stabilise thereafter, according to studies carried out by L&T-Ramboll Consulting Engineers Limited in connection with the Environmental Impact Assessment.

A reference manual on Climate Change Adaptation Guidelines for Coastal Protection and Management in India prepared by the Asian Development Bank for the Ministry of Water Resources, and published in 2019, notes that the Valiathura is typical of a tropical coast which has waves as the predominant hydrodynamic force controlling the coastal processes.

The data available with the National Institute of Ocean Technology say that during the Ockhi cyclone, the maximum wave height along the coast had touched 7.29 metre. The highest maximum wave height was recorded during the time of cyclone Tauktae in 2020 at 9.44 metre.

There is a constant longshore sediment transport along the coast of Kerala that indicates the transport, or drift, of beach material caused principally by the action of waves and tidal currents. When there is high wave activity induced by cyclones, depression or low pressure during monsoon, a large portion of the beach will be gnawed away by the waves. This has become a regular feature on the Kerala coast.

The proposed Vizhinjam port is being constructed inside a ‘sediment cell,’ which is a pocket-like area in which interruptions to the movement of sand along the coast do not significantly affect the adjacent length of coastline. Further, it has been found that shoreline changes are negligible to the north of the proposed port even after the complete phase of development, according to the L&T study.

In addition, around five-km north of the port site are rocky headlands and pocket beaches where the rate of sediment movement along the coast is significantly low, says the study. Several other studies had reported the high erosion zones along the coast of Thiruvananthapuram. The Department of Ocean Engineering, IIT, Madras, in a report to the government in 2007, stated that Beemapally and Shangumugam stretches were under constant threat during high wave seasons.

Applications Centre in 2014 has also found Valiyathura and Poonthura coastal areas vulnerable to high-intensity erosion. This is mainly due to the unscientific construction of seawalls and groynes in the south of Valiyathura to check erosion, says the ADB report. There has been no proper impact assessment preceding the construction of coastal structures at many places, says a senior officer at Vizhinjam International Seaport Limited (VISL). The unscientific construction of a breakwater at Muthalapozi is an example where scores of fishermen have lost their lives, where sand bypassing is urgently required to mitigate the problem, he says.

“Coastal erosion is a reality and the rate of erosion has increased recently, especially after Ockhi. It is not right to club erosion with port construction as there are permanent mechanisms to monitor the shoreline changes due to construction. Perhaps this is the only port project in India that began after completing all comprehensive studies to address all impact with a high level of stakeholder participation,” says VISL CEO Jayakumar.”

Kerala: Fishers told to switch to petrol or diesel engines

<https://www.thehindu.com/news/national/kerala/fishers-told-to-switch-to-petrol-or-diesel-engines/article65802232.ece>

"Traditional fishing boats might have to switch to engines which run on petrol or diesel, now that the Centre has refused to allocate more kerosene for the State, Minister for Sports, Wakf and Haj Pilgrimage V. Abdurahiman has said.

Replying to a calling attention motion by P.P.. Chitharanjan on the hardships faced by traditional fishers because of the shortage of kerosene and the need to rehabilitate families living along the coast, Mr. Abdurahiman said that a meeting of fishermen and trade unions would be called soon to discuss the issue of switching from kerosene to petrol or diesel as fuel for fishing boats.

The Centre had been apprised of the difficulties faced by the fishermen because of the non-availability of kerosene. The State was facing severe sea erosion at 50 locations. The State government was implementing Punargeham, a rehabilitation scheme for fishermen whose homes were just 50 meter from the high tide line, at ₹2,450 crore.

The government reckons that 21,000 families would have to be rehabilitated. None would be forcefully removed. A total of 8,375 families had volunteered to move away from the coast and for them flat complexes had been proposed in nine locations, Mr. Abdurahiman said."

Kerala: Seeks ₹2400 crore Central aid for coastal protection

<https://www.thehindu.com/news/national/kerala/kerala-seeks-2400-crore-central-aid-for-coastal-protection/article65779309.ece>

"The State has sought ₹2,400 crore financial assistance from the Centre for coastal protection works, Minister for Fisheries V. Abdurahiman has said. Mr. Abdurahiman, after meeting the Union Minister for Fisheries and Animal Husbandry, Parshottam Rupala, in New Delhi on Wednesday, said that the Union Minister had assured that a favourable decision could be expected on the matter.

Financial assistance was sought for planning novel methods for protecting the coastal stretches from erosion and to adopt urgent measures for the protection of hotspots identified in eight coastal districts, the Minister said. With coastal erosion emerging as a major challenge in recent years, the State government had earlier announced coastal conservation measures estimated at roughly ₹5,300 crore over the next five years.

During his meeting with Mr. Rupala, Mr. Abdurahiman also urged the Centre to release its 50% share for the Savings-Cum-Relief Schemes (SCRS) meant for traditional fishermen. This is the only scheme aimed at the welfare of fishers during the trawling ban and periods of distress. Kerala has sought ₹72.75 crore as the Central share for the 2018-19 to 2021-22 period and ₹26.36 crore for the 2022-23 period for SCRS. Mr. Abdurahiman also pointed out that the shortage of kerosene was creating hardships for fishers who used it as fuel in the outboard engines in fishing craft. There were around 36,000 outboard engine-rigged fishing boats registered in Kerala, according to the Minister."

Kerala: Fisherfolk stir outside Vizhinjam port intensifies; Kerala govt says housing issue to be resolved soon

<https://theprint.in/india/fisherfolk-stir-outside-vizhinjam-port-intensifies-kerala-govt-says-housing-issue-to-be-resolved-soon/1084580/>

"As the fisherfolk's protest against alleged neglect of their demands by the Kerala government intensified outside the under construction Vizhinjam port, state Transport Minister Antony Raju said steps were being taken to allocate land for constructing flats for those who lost their homes to the sea.

Raju said that one of the main problems being faced by a large section of the fishing community was the loss of their homes to the sea and to address that directions have been issued to allocate land by August 22 for construction of flats for them. The objective is to provide homes without any further delay, he said while speaking to reporters here.

He also said that when the fishermen had staged protests outside the Secretariat here, the government had indicated its willingness to hold discussions with them to address their concerns. "Actually they (fisherfolk) are facing various problems which need to be addressed in a time bound manner. In the coming days, the government will take a final decision on ensuring housing for those who lost their homes," the minister said.

On stopping the port construction, which is one of the demands of the protesters, Raju said the state government cannot take such a decision on its own as the Centre is also involved in the project regarding which orders were also issued by the Supreme Court and the National Green Tribunal. Meanwhile, the protest outside the port intensified with a huge number of protesters, primarily youngsters, arriving there wearing black clothes and carrying black flags.

One of the priests leading the protest, while speaking at the protest site, said the day was being considered as 'black day'. Protesters were seen trying to push away some of the barricades set up by the police several meters outside the port's main entrance, but it did not lead anywhere.

A large number of police personnel were deployed outside the port in the morning in anticipation of the protest. Earlier in the day, Monsignor Eugene H Pereira of the Latin Archdiocese told media that the fourth phase of the protest was being held with the slogan 'Vizhinjam chalo'. Black flags were hoisted on churches of the Latin Archdiocese in the state capital and a bike rally to the port's main entrance was also held.

The priest said the protest was not just confined to the problems being faced by members of the fishing community in Thiruvananthapuram, as those in Kollam, Alappuzha, Kochi and other coastal areas were also facing various issues, including coastal erosion. Successive governments

made various promises and announced several relief packages and projects, but either they were not properly implemented or in some places nothing happened at the ground level, the priest claimed.

He alleged that the successive governments were more interested in taking the port project forward rather than listening to what the fisherfolk had to say. He also alleged that the contract with the Adani group for construction of the Vizhinjam port was a “fraud”.

Another priest of the Latin Archdiocese told reporters that the agitation was against the government’s “arrogant belief” that they can do anything in the name of development without taking into account the plight or suffering of a section of society. The protesters have been alleging that the unscientific construction of groynes, the artificial sea walls known as “pulumutt” in local parlance, as part of the upcoming Vizhinjam port was one of the reasons for the increasing coastal erosion in the district. Last week, hundreds of fisherfolk had taken out a massive protest rally in the state capital and laid siege to the Secretariat here with boats and fishing nets, alleging that the Left government was neglecting their demands."

Kerala: Massive protest by fishermen brings Capital to a standstill

<https://www.newindianexpress.com/cities/thiruvananthapuram/2022/aug/11/massive-protest-by-fishermen-brings-capital-to-a-standstill-2486273.html>

"Hundreds of fisherfolk on Wednesday took out a massive protest in the capital and laid siege to the Secretariat with boats and fishing nets, seeking urgent intervention of the state government into various issues including coastal erosion in the district. The march, which saw protesters raising slogans against the government that it neglected their demands, brought the city to a standstill for several hours.

The Latin Archdiocese supported the protest march of fishermen from several coastal areas in the district against the coastal erosion that occurred owing to construction of Vizhinjam port. City traffic went haywire as the agitators brought fishing boats on trucks to various places, including Thiruvallam, Pettah, General Hospital Junction, and Enchakkal on NH 66 bypass junction. Members of the fishing community, including women, who came from different coastal hamlets in the area, were led by a group of priests. They stopped major city routes for hours while raising slogans against the government.

When the police attempted to prevent demonstrators from moving ahead at Shankumukham, Enchakkal, Pettah, and General Hospital, tension prevailed throughout the city for hours. When the motor vehicles department employees attempted to forbid the fishermen from transporting

sizable boats that were attached to vehicles, the fishermen reacted angrily in a number of places. The police and fisherman reportedly got into a small altercation. Police said that the fishermen were not permitted to protest with boats, and they did not seek authorisation from the police in advance for the Secretariat march. Later on, though, the cops had to let them go.

Fishermen then marched with their boats from the Museum to the Secretariat. Then, the women and fishermen surrounded the Secretariat on MG Road. This led to traffic chaos in Palayam, East Fort, and Vellayambalam. Several motorists had to rely on byroads to reach their destinations. The police had blocked one side of MG Road from 11 am as a precaution. But for over four hours, the protesters besieged the area, blocking the entire route. All prominent priests of the Latin Archdiocese, including former Archbishop Soosapakiam, came to the protest venue to express solidarity with the agitators.

The coastal residents raised demands such as solving the coastal erosion allegedly due to the construction of the Vizhinjam port, ensuring rehabilitation of those who lost their jobs due to the port project, ensuring safety in places where there is constant danger, and reducing the price of kerosene for fishermen. As coastline erosion worsens during monsoon and more homes are lost, they sought a long-term solution to the issue. Additionally, they claimed that the government had not yet given them any assurances.

In Kerala, kerosene costs Rs 125 per litre, up from Rs 25 in Tamil Nadu. According to the protesters, this is having an impact on fishermen's lives. The protesters urged that the development of the Vizhinjam port be halted until a thorough study is conducted. The government, according to a woman protestor, is doing nothing to address the serious coastline erosion that has been occurring for years. According to them, 500 homes had been lost in several coastal hamlets, and the government needed to act quickly to assist families that had lost their houses.

Another fisherman claimed that hundreds of families, including his own, have spent the previous four years living in government godowns because strong waves and coastal erosion had wrecked their houses. He added that the protest was a token one and it would be intensified if the government did not respond to the requests of the fishermen."

Kerala: On India's Arabian Sea coast, villages pay brutal price of 'stolen' shoreline

<https://www.arabnews.com/node/2125251/world>

"When the sea destroyed her home, Mary Joseph had to move to a warehouse, a shelter that she and her children now share with more than 20 other families displaced by coastal erosion

in Valiyathura, a former port area of Trivandrum, the capital of Kerala state. The rising sea levels in the state that spans almost 600 kilometers on the southwestern coast of the Indian subcontinent is one of the reasons that people are losing their houses and livelihoods, but climate change is not the only culprit.

In Trivandrum, more than 20 percent of the city's Arabian Sea coastline is affected by erosion, much of it caused by artificial seawalls and riprap revetments protecting infrastructure projects, according to local government data. Hundreds of fishing families from Valiyathura and about a dozen other neighboring villages have been forced to abandon their houses in the past few years. "It's terrible living here where you don't have any privacy," Joseph, who has two teenage children, told Arab News.

"Life in the warehouse has not only dehumanized us, but has also brought health problems, with many of us suffering from respiratory problems because this building used to store cement earlier." Since May, the displaced villagers and civil society groups have been protesting a multibillion-dollar seaport project built in nearby Vizhinjam, which they say has deprived local communities of homes by increasing sea levels at a pace much faster than climate change.

The Adani Vizhinjam port and container transshipment facility, developed in a public-private partnership since 2016, has already affected about 200,000 people and the number is increasing, according to Trivandrum-based environmentalist A. J. Vijayan.

"We have seen that every year at least 100 houses are getting lost after the port project started," Vijayan told Arab News. He estimates that more than 650 families have since moved to temporary shelters in nearby schools and warehouses. Vijayan is one of the organizers of the protest to stop the development and compensate the fishermen who have lost their lands.

"For land and housing, they should be adequately compensated," he said, adding that protesters also want the local government to restore the eroded coastline that provided livelihoods to those dependent on it. "Stolen Shorelines," a documentary film by K. A. Shaji, a journalist from Kerala, shows how development projects in Trivandrum are pushing coastal communities into homelessness and poverty.

"The coastal region of Kerala is facing massive sea erosion. Massive sea erosion is visible in Trivandrum and the surrounding areas for the last four and five years, and now it has escalated to alarming levels," Shaji told Arab News. "At one level climate change is a villain. On the other level there are many contributing factors that are aggravating the crisis created by climate change." The local government has policies to rehabilitate displaced communities.

“We are giving 10 lakhs rupees (\$12,600) of which six lakhs is for buying land and four lakhs for building houses,” Sheeja Mary, deputy director of the Kerala Department of Fisheries, told Arab News. “These projects are for those who live within 50 meters of the high tide line and those affected by sea erosion.”

She said that under the program, the government has so far helped 3,000 people and plans to rehabilitate a further 15,000. But the assistance covers all those displaced along the hundreds of kilometers-long Kerala coast, which means that only a fraction of the people affected will receive funding. And if they do, it may be too little to rebuild their households and livelihoods.

Reni Dixon, another resident of the Valiyathura warehouse, said that with the government assistance she would fail to buy land in any port city of Kerala, where her family could rely for sustenance on what they know best — fishing. “If we shift to the rural areas then our livelihood is lost,” she added. “We have lost not only our houses, but also our livelihoods, and the government is not willing to accept that this is a problem.””

Kerala: Fishers’ hunger strike against Adani port development enters seventh week

https://www.adaniwatch.org/fishers_hunger_strike_against_adani_port_development_in_kerala_enters_seventh_week

"The determined members of a threatened fishing community in India’s southern state of Kerala are now in their seventh week of a relay hunger strike outside an airport operated by the Adani Group. The protest has been prompted by Adani’s massive port redevelopment at Vizhinjam, which has been blamed for coastal erosion and impacts on fishing resources. Seventy-one families have lost their homes to the encroaching sea. The sathyagraha (fasting protest) has, of course, been attacked by supporters of Adani’s port development. Yet the beleaguered fishing community is in a fight for its very existence.

The protest, which began on June 5, World Environment Day, completed 44 days on 18 July. It will carry on for an indefinite period as community members participate on a relay basis. Due to severe coastal erosion that some blame on Adani’s port project, many members of the community have been forced to take refuge in warehouses and schools that have been converted

into evacuation areas. The people live like refugees in close proximity to the state's administrative headquarters. (See videos of the tough life at the camps.)

The phrase 'caught between the devil and the deep blue sea' has become literal for Kerala's fishing community. On the one hand, these hardy people have to flee for their lives to escape the increasing onslaught of the seas. On the other, they have to face the devilry of the Adani Group and its backers in the government and development lobby.

Local people say that time balances everything; this holds true for the seas. If the seabed is dredged, it will take sand from the shores. If you drop rocks into the sea to create a shore at one end, a shore from another end will disappear. Humans are helpless in front of this 'oceanic justice'. But those in power continue to dredge the ocean floor and pile up massive breakwaters while people who reside on the coast are forced to flee. Fishing boats have been destroyed at the Vizhinjam Harbour, with lives lost. Even before the monsoon struck, several fishing villages in Thiruvananthapuram like Poonthura were hit by severe erosion.

The protests against Adani's Vizhinjam port project have gathered steam lately. An alliance of fisherfolk, unions, farmers' organisations, ecologists and conservation NGOs was formed prior to World Environment Day and began the relay Sathyagraha in front of the Thiruvananthapuram International Airport.

The protest alliance is composed of the Kerala Swathanthra Matsyathozhilali Federation (Federation of Independent Fishing Labourers), Rashtreeya Kisan Mahasangh (National Alliance of Farmers), Sewa Union, Coastal Watch, TFM Union, Coastal Students Cultural Forum, Tree Walk, AICUF, Sthri Niket Vanitha Federation, Western Ghats Conservation Society, SUCI, Ekta Parishad and Voice. I.P. Udayakumar, who led the Koodamkulam Nuclear Plant protest, inaugurated the Sathyagraha, whose numbers have been swelling.

One of the key demands of the protest is to compensate the people who have lost their homes. The alliance insists that the people responsible for this plight, the government and Adani Group, must offer solutions. Sea walls are ineffective in the long run. Depletion of beaches has impacted the livelihoods of the fishermen as there is a lack of space to pull up the nets from the sea. Coastal residents say that the port project is not even half done and already hundreds of homes have been destroyed. They fear that if the project continues, the beaches, roads, houses and allied infrastructure will be engulfed by the sea.

The Adani Group originally signed the agreement for the port project with the then United Democratic Front (UDF) state government. However, the current Left Democratic Front (LDF)

government is also facilitating the smooth execution of the project. Both parties have been taking turns in ruling the state for decades and both are reluctant to oppose Adani publicly. In response, the protest alliance has beseeched everyone who is in favour of shutting down the port project to join them in the agitation.

Udayakumar said in 2016 that the Vizhinjam Port project is a huge scam. Speaking during the inauguration of the Sathyagraha, he warned that the Kerala and Tamil Nadu coasts will be destroyed if the port is completed. He said that this is the struggle of those who depend on the sea for their survival. While visiting the protest camp on 17 July 2022, prominent Supreme Court lawyer Prashanth Bhushan said that due to the construction of the Vizhinjam port, fishermen have been forced into relief camps. People should take to streets against this, Bhushan added. His criticisms of the pro-Adani policies of governments have also been aired through Twitter.

A joint petition highlighting these concerns, signed by 70 acclaimed authors, environmentalists and scientists, was submitted to Chief Minister Pinarayi Vijayan on 26 June. The petition said that while the Vizhinjam Port might be a dream project of developers, it will irrevocably destroy the lives and livelihoods of coastal residents.

The minister for ports has predicted that the Vizhinjam development will welcome its first ship towards the end of the year. This is a bold forecast considering with the project only 33% complete. The Adani Group has already made it clear that it will just procure raw materials during the monsoon and resume construction in the sea after the rainy season. In June 2022, the group also submitted a renewed construction schedule to the government which states that the first schedule will only be completed in December 2024. The government claims that it has not approved this new schedule.

The port-construction contract stipulated that the first phase of the project was to be completed by 3 December 2019. It remains incomplete. A legal tussle is occurring between the Kerala government and Adani Group on this failure to complete the project in line with scheduled milestones. The government issued a notice in March 2020 fining the company. Adani argued that its construction schedule had been impacted by ‘force majeure’ occurrences such as natural disasters and the Covid-19 pandemic. The Group has asked for a five-year extension to complete the project. The Arbitration Tribunal is hearing the case.

Poonthura is one of the highly populated fishing villages in Thiruvananthapuram and lies on the northern side of the Vizhinjam development. Kerala’s first sea wall to prevent tidal waves was constructed in Poonthura in the 1970s. Incursions of the sea began here after small breakwaters (of about 600 m each) were built for the Vizhinjam harbour’s fish-landing centre. The sea wall

has been renewed a few times over the last 50 years. Several groynes (small breakwaters of 25 m each) were built along with the sea wall 15 years ago...

Kerala: Chellanam model fishing village to be developed at a cost of ₹750 crore

<https://www.thehindu.com/news/cities/Kochi/chellanam-model-fishing-village-to-be-developed-at-a-cost-of-750-crore/article65507250.ece>

"The development of the Chellanam model fishing village project will involve an investment of approximately ₹750 crore. The report on the project is in its final stages and is expected to be submitted to the government later this month.

An interim report on the Matsya Gramam project was submitted earlier this year after consultations with all stakeholders. Sources in the Kerala Coastal Area Development Corporation, which is collaborating with the Kerala University of Fisheries and Ocean Studies (KUFOS) to implement the project said around ₹150 crore had been allocated in the current State budget for the project, while the rest of the money would have to be sourced from financial agencies. The proposals for the development of the model fishing village will be submitted to the State Planning Board for approval before the sourcing of funds is finalised.

KUFOS Vice Chancellor Riji K. John said there would be a holistic approach to the development of the model fishing village taking into consideration the social and economic uplift of the people in the coastal village.

Chellanam is among the 10 coastal spots identified as affected seriously by sea erosion along the Kerala coast. The problems have turned more acute after cyclone Okhi hit the coast in December 2017. Dr. John said stakeholders had been consulted to elicit their views on the ways the coastal village should be developed as a model for the entire State.

Economic security, protection of life and property, sustainable agriculture and fish production, and development of social and physical infrastructure, including in healthcare, are the key issues that are being addressed in the masterplan for the village. A ₹344-crore project to protect the Chellanam coast utilising tetrapods is progressing fast. Nearly 7 km of the most vulnerable segments of the coast will be covered by the tetrapod projects in its first phase, while groynes will be erected in the second phase."

Kerala: Shattered lives of fishermen left high and dry

<https://www.newindianexpress.com/cities/thiruvananthapuram/2022/jun/08/shattered-lives-of-fishermen-left-high-and-dry-2462943.html>

"Erratic weather conditions due to climate change, threat of cyclonic storms round the year and advancing sea the fishermen community in Thiruvananthapuram is fighting many odds each day. With their livelihood hampered, these fishers are struggling to support their families. Due to weather disruptions, they rarely get to fish these days. These families are in constant danger of displacement and starvation. Ever since Ockhi hit the shores, cyclonic storms have become a regular affair in the state but Kerala is still not prepared to handle them. In the past three to four years, the coastal areas have been eaten away by sea erosion. The state departments lack the experience to prevent such natural disasters.

The intermittent hike in kerosene price has also crippled the fishing community. Jackson Pollayil of the Kerala Swathanthra Matsya Thozhilali Federation said "Even if the fishers go out in the sea, they are unable to make any profit as they are spending more on the fuel now. The number of days they can fish has also reduced largely," said Jackson. In 2021, the fishers in Kerala lost around 76 working days. "The state government should compensate the fishermen for the days they lost. Precautions being taken as part of disaster management is stifling their livelihood. The government agencies should write off all the loans given to fishermen who are struggling for survival. The agencies like Mathsyafed are offering loans to fishers at 12.5 percent interest with an additional service charge," said Jackson.

Valiyathura, a coastal hamlet in the capital, is the worst hit. Over the last four years, around 1,200 homes were destroyed and swallowed by the sea in Valiyathura alone. The situation is similar at Cheriyaathura, Bheemapally, Kochuthoppu, Valiyathopp, Kannanthura and Vettucaud. Xavier Andrews, a traditional fisherman, and his family from Valiyathura are constantly living in the fear of displacement. "Around four rows of houses along the Valiyathura coast have been washed away by the advancing sea. My house, which belonged to my mother, where I have been living for the past 45 years, will be gone this monsoon. The government should take steps to protect us and our property. Every year, hundreds of houses are getting washed away. I have been asked to move to the relief camp," said Xavier.

Lack of profit has plunged Xavier's family into a deep financial crisis. "There is no shore for fishing. We have to go to Vizhinjam to venture into the sea. Local fishermen there often create friction. But this is the only job I know to do," he added. Former Valiyathura ward councillor Tony Oliver said 50 out of the 140 constituencies in Kerala are coastal areas and the changing governments have failed the fishermen community. "They have no clean drinking water or sewage lines. Apart from announcements, no projects were launched to protect the coast from the advancing sea. They just want our votes. There is no opposition to help raise our demands either," said Tony.

The destruction of the shoreline has adversely affected the livelihood of around 4,500 kambavala (gill nets) fishermen. There are around 87 kambavala units in Poonthura. “Fishing equipment worth lakhs have been damaged and I am in a deep financial crisis. We have to dole out more money for fishing and it’s not profitable anymore,” said Antony Stancilas, a traditional kambavala fisherman.

“The state randomly issues warnings on days and restricts us from venturing into the sea, even when the weather is normal. This should stop. Weather warnings should be more accurate as our livelihood depends on this. Unscientific fishing activities by industrial units have become rampant. Many countries and other states are curbing trawling activities to improve marine resources. Traditional fishermen are returning empty handed because of all this,” said Anto Elias, vice chairman of the Mathsyathozhili Karshaka Samyukta Samara Samiti.

Kerala: Stir by fishers at Shangumughom enters second day

<https://www.thehindu.com/news/national/kerala/stir-by-fishers-at-shangumughom-enters-second-day/article65500636.ece>

"An indefinite stir launched by fishers and backed by farmers at Shangumughom, which sought the State government stop work on the Vizhinjam port project and rehabilitate families left homeless by coastal erosion, entered the second day on Monday. They have demanded a comprehensive study on the coastal situation and demanded that the families be adequately compensated. The ‘Relay Satyagraha’ was kicked off near the Shangumughom gate of the Thiruvananthapuram domestic airport on Sunday evening.

Rashtriya Kisan Mahasangh vice chairman John Joseph, inaugurating the stir, said hundreds of people were left homeless and that was proof enough that the port project was detrimental to the interests of the State. Continuing with the “unscientific construction”, he said, would destroy the Thiruvananthapuram coast. Kerala Swatantra Matsyathozhilali Federation State president Jackson Pollayil presided.

According to fishers, the government’s assurances regarding compensation packages remain unfulfilled. The government also ignored the federation's demand that a scientific panel be constituted for assessing the damage caused the by port project to the coastal ecosystem. Fishers from various parts of the State would join the 'relay satyagraha' in the days ahead, Mr. Pollayil said.

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Kerala: New rescue shelters under consideration for fishers in Kozhikode

<https://www.thehindu.com/news/cities/kozhikode/new-rescue-shelters-under-consideration-for-fishers-in-kozhikode/article65470029.ece>

"Rescue shelters exclusively for fishermen families living close to the coast under the threat of sea erosion are likely to be a reality soon, as part of a finalised action plan for mitigating monsoon-related calamities in Kozhikode district. In Kozhikode city limits, there will be at least four such shelters for the speedy relocation of affected families.

Revenue and Fisheries department officials will team up for finalising the spots and making the necessary arrangements. Similar arrangements will be made at other vulnerable coastal areas in Koyilandy, Payyoli and Vadakara. The support of charitable organisations and voluntary sponsors will be sourced to ensure the proper management of such facilities.

The action plan suggests the opening of such shelters to cover the vulnerable coastal areas around Bepore, Puthiyangadi and Santhi Nagar in the city limits. Recurring incidents of sea erosion and the hardship faced by underprivileged families prompted the disaster response teams to suggest a separate action plan for the coastal community.

Revenue department officials said the additional shelters would help reduce overcrowding in relief camps. The opening of separate shelters for fishermen families was a long pending demand put forth by various fishermen's welfare organisations. According to them, the relocation of a large number of families to relief camps was creating a lot inconvenience. They had said that the fishermen were the majority in the affected group and they should be given priority. According to the latest figures of the Fisheries department, the highest number of families living close to vulnerable coastal areas in the Malabar region is in Kozhikode. There are 2,709 such families in the district. Though the department is constantly in touch with them for their permanent relocation under the 'Punargeham' scheme, only 273 families have agreed to cooperate."

Kerala: Government's relocation plans fail to move fishers in Malabar coast

<https://www.thehindu.com/news/national/kerala/governments-relocation-plans-fail-to-move-fishers-in-malabar-coast/article65453897.ece>

"Along the riskiest Kothi coastline is the tile-thatched house of 32-year-old N.V. Jerseena. The woman stands fearless in the congested fishermen colony where mighty waves frequently peep through the seawall. She is one among the 41 families in the coast where they stick to a minimalistic living. Not that they hate a better living, but the pain of losing everything to the furious sea is beyond a wild guess for anyone.

The children around her neighbourhood are least aware of the risky lives. Twelve-year-old Mohammed Basith and his friends are always busy playing football. But, Ajmal, a class five student, looks a bit serious. "I have seen many fishing boats being washed away during high tide," says this young boy.

The highest number of such vulnerable families in northern Kerala coastline is in Kozhikode. There are now 2,709 families living under sea erosion threat, where the district has already lost about 80 metres of its coast. Of the group, only 273 are willing to relocate.

"Moving to a remote place with the high price of land is impossible for us. It is also tough to travel from such locations to harbours with the fish implements," says K.V. Basheer, a fisherman from Nainamvalappu, another badly affected coastline. He laments that the offers from the government are hardly attractive for a sudden shift.

The sentiment is almost the same in Malappuram district where there are 1,806 families settled along the riskiest coastline. So far only 157 families have accepted the State government's aid for relocation. Though 1,143 families are willing, it may take several years to fulfil their dream.

"People are ready to shift if they get a convenient spot closer to the harbours," points out P.K. Alavi, an elderly fisherman from Tanur in Malappuram. He feels that many are uncomfortable with the relocation plan as they have already learnt to adjust with the challenges.

In Kannur, the sea erosion threat is continuing to be a problem for 1,583 families. Yet, only 118 families have registered to cooperate with the relocation plan. Only 30 houses are now under different stages of construction.

Though the number of affected are comparatively less in Kasaragod, there are 1,230 families in need of help. The hope is that 540 families have already agreed to shift. Many others believe that they may get a better package with the acquisition of their land for coastal highway projects.

Fishermen from Kannur and Kasaragod say many of them are not happy about leaving their existing spacious homes as the value of their current property can never be compared with the offers from the government. They also fear the takeover of their abandoned property by private

investors for tourism purposes.

Fisheries Deputy Director P.P. Ranjini says the department is making all possible efforts to convince the reluctant families about the risk in continuing at the current spot. “They are not supportive of the idea of demolishing the existing houses. If they accept the package, they will have to move out from the existing land,” she points out."

Kerala: Voice of the fisherfolk

<https://www.newindianexpress.com/cities/kochi/2022/may/12/voice-of-the-fisherfolk-2452424.html>

"Thiruvananthapuram’s coastal areas have been facing severe sea erosion for the past few years. Many fisherfolk who lost their home to sea attack live in rehabilitation camps. Journalist K A Shaji’s new documentary focuses on coastal erosion and debates the idea that Vizhinjam international port construction activities contributed to this.

Titled Stolen Shorelines, the 35-minute documentary tries to capture the life of coastal areas. It voices the concerns of fisherfolk and alleges that port construction activities causes sea erosion. The documentary talks about their trials and tribulations, and struggle to bring this issue to the fore.

Written and directed by K A Shaji, the documentary showcases how fishing villages like Kovalam, Vizhinjam, Veli, Valiyathura, Kallumoodu, Bheemapalli and Muttathara have been affected by sea erosion. Shaji, who used to frequently visit Vizhinjam and other coastal villages to write news stories, wanted to narrate their struggles to a bigger audience.

The documentary has visuals captured over a year worth of conversations with fisherfolk where they talk about their struggles. “Human interventions amplify coastal and environmental degradation. We documented the changes happening in the coastal areas. After speaking to experts, I found that port construction caused it. This issue affects the lives and livelihoods of fisherfolk. It shouldn’t be taken lightly,” said Shaji.

Environmental activist AJ Vijayan says in the documentary that Vizhinjam isn’t a natural port

and building an artificial port has led to coastal erosion and accretion. “This causes beaches to erode and affects natural sediment transport. As the construction activities at the port progresses, it will lead to further environmental disasters,” said Vijayan.

The documentary will be released on June 5, World Environment Day. It will be screened in Valiyathura in the presence of the coastal community and field experts. Shaji hopes to screen the documentary across the country and generate awareness about the issue. “This is a larger environmental issue and the documentary was conceived on those lines,” says Shaji.

Syed Shiyaz Mirza and Sooraj Ambalathara handled the camera. Kalyani Vallath is the narrator, while Roshni Rajan, Bhavapriya J U, Salini Reghunandan and Archana Kala Sajikumar took care of research and documentation. Kannan Mamoo made the sketches and posters were designed by Shafeek Subaida Hakkim."

Goa: Fishermen will face same fate like Kerala if Sagarmala project not scrapped

<https://www.heraldgoa.in/Goa/Fishermen-will-face-same-fate-like-Kerala-if-Sagarmala-Project-not-scrapped-NFF-/189856>

"The National Fishworkers' Forum (NFF) on Sunday cautioned that fishermen from Goa would face situation like Kerala if the Sagarmala Project is not scrapped. The forum demanded that the government should immediately stop port expansion plans in Kerala.

NFF General Secretary Olencio Simoes said that NFF ended its third State “Machhimar Sangharsh Yatra” at Kerala, where the team visited affected Valiyathura village in Thiruvananthapuram, where nearly 400 families have been displaced because of sea erosion due to dredging of Vizhinjan seaport.

Simoes demanded that the Union Ministry of Ports, Shipping and Waterways should immediately stop port expansion plans in Kerala. “During the yatra, the NFF team highlighted that Goa's fishermen and coastal dwellers would meet the same fate if the Goa government doesn't scrap Sagarmala plans in the State,” he said.

The NFF general secretary also demanded that the Union government should pass the Coastal Rights Bill in order to protect the livelihood of people engaged in or depending on fishing activities. Meanwhile, the fourth “Machhimar Sangharsh Yatra will be held in Goa on June 16 and 17. NFF Chairperson Leo Colaco, Vice Chairperson K Yellayya and other Union members will visit highly affected areas where fishermen have been deprived of their rights and livelihood."

Kerala: Voice of the fisherfolk

<https://www.newindianexpress.com/cities/kochi/2022/may/12/voice-of-the-fisherfolk-2452424.html>

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Kerala: Fish famine, livelihood loss because of upcoming Vizhinjam port, say fishers

<https://india.mongabay.com/2022/05/fish-famine-livelihood-loss-because-of-upcoming-vizhinjam-port-say-fishers-of-south-kerala/>

"Vizhinjam was once known as the harbour of pro-creation," Father Michael, parish priest of Lady of Good Voyage Church in Vizhinjam, Kerala, told Mongabay-India. But today, the reality is different.

Vizhinjam is a coastal region approximately 16 kilometres south of Trivandrum, stretched between Kollam and Kanyakumari in the southern district of Kerala. The seabed in this area is full of rock formations, sandy bottom ridges, floor slopes and sloping ridges, making the space a rich breeding ground for mussels and a variety of marine organisms. At least 12 unique reef systems have been discovered here, say researchers from Friends of Marine Life, an indigenous coastal community non-profit composed of scientists, scuba divers and fishers in south India. In 2016, they carried out a survey of the sea bed of Vizhinjam, to document the biodiversity of the region. Kumar Sahayaraju, a marine biotechnologist, who was part of the team, told Mongabay-India that the region is "like a forest in the sea."

"The sea bed is full of sessile and sedentary marine life. There are at least 12 different reefs, forming the perfect habitat for fish to live and breed. And now they don't have a home," he said. Father Michael said, "fishers from all the 20 coastal villages surrounding us would come here during the monsoon months to fish."

This ecologically rich region is also the site of the Vizhinjam International Sea Port, an 'international transshipment deepwater multipurpose seaport' that is being developed by Adani Ports as a public-private partnership (PPP) project on a design, build, finance, operate and transfer (DBFOT) basis. The PPP structure is based on a landlord model where land will be owned by the Government of Kerala (GoK) through Vizhinjam International Seaport Limited (VISL), a special purpose vehicle set up to manage the port development.

Vizhinjam International Seaport is an 'international transshipment deepwater multipurpose seaport' that is being developed by Adani Ports in a public-private partnership model with the government of Kerala. After going through a series of objections and court cases filed by environmentalists and citizen activists, the port secured all clearances for construction in 2015. However, over the last seven years, Vizhinjam and its neighbouring villages have witnessed a

steep fall in marine biodiversity, a decline in fish catch, loss of thousands of livelihoods, uncomfortable rehabilitations, and a general sense of misery amongst its populace.

Experts warn that port activity will destroy the wadge bank, a unique fertile fishing ground in the ocean, and rich in biodiversity, like a warehouse for feeding fish. There are 20 wadge banks around the world and one of them is situated southwest of the coastline of Kanyakumari in south India. While the port is soon going to become a reality, and compensations are being provided for livelihood and land lost, the affected people argue it is not enough.

The project has been in the making for a long time. The port's development was envisaged by the Kerala government in 1999 and the site was chosen primarily because of the geomorphological features of this region — Vizhinjam has a natural bay, a natural depth of 18-20 metres that would allow the parking of cape-size vessels without additional dredging. And it is only about ten nautical miles from the international shipping route of Malacca strait, one of the busiest shipping channels. Capesize vessels are large-sized bulk carriers typically above 150,000 deadweight tonnage (DWT). Due to their large dimensions and deep draughts, they are suitable to serve only large ports with deep water terminals in the world.

The site seemed like the perfect pit stop for cargo vessels passing by. It is designed to cater to container transshipment besides multi-purpose and breakbulk cargo. The private partner, Adani Vizhinjam Port Private, manages the port including the civil infrastructure, supra-structure (terminal) and provides cargo handling services to the port users.

The construction of the project started in 2015 and it involved reclaiming 130 acres of land from the sea, building a new harbour, a jetty with pillars to allow the parking of capesize vessels, breakwaters running up to three kilometres, and dredging of shipping channels. According to the master plan, the total requirement of the land for the project is about 238 hectares. Of the total land required for the project, about 30 percent of the land is to be used for real estate development in the form of hotels, commercial buildings and residential apartments.

Not that there wasn't any protest against it but after going through a series of objections and court cases filed by environmentalists and citizen activists, the port received all clearances and commenced construction on December 5, 2015. It is now slated to be commissioned by October 2023.

For the people of Vizhinjam, life has been divided into two parts – before the port, and after the port. They say it wasn't as if everything was rosy before the port was constructed. They were sold the idea of a dream destination, that the port will bring them new opportunities, a better,

more secure future. But the reality could not be further from this dream.

According to the local people and experts, who are working in the area, Vizhinjam and its neighbouring villages have, over the last seven years, witnessed a steep fall in marine biodiversity, a decline in fish catch, loss of thousands of livelihoods, a rise in the number of fisher deaths, coastal erosion, uncomfortable rehabilitations, and a general sense of misery amongst its populace. For the people, from a harbour of pro-creation, it has become a harbour of desolation..."

Kerala: In this coastal school, fisherfolk have spent years awaiting rehabilitation

<https://www.thenewsminute.com/article/school-coastal-kerala-fisherfolk-have-spent-years-awaiting-rehabilitation->

"Stepping into the compound of the Government Upper Primary School at Valiyathura in Thiruvananthapuram, one is met with a rather strange intersection of two worlds. In one of the buildings, students sit in their classrooms, attentively listening to their teachers. In another, scores of families go about their household chores. The UP School, located in the coastal region of Valiyathura around 10 km away from the city, has become a 'permanent shelter' of sorts for many area residents who have lost their houses in the recent years due to recurring coastal erosion, rough weather, and the Cyclone Ockhi of 2017.

"It has been three years since we began our stay in this building. I have seen several deaths and births ever since. Now it seems like we too will end up dying here. We cannot even afford to rent a house, so we have no place to go," says Baby, a fish vendor who began to live in the school building with her family after her house was destroyed in sea erosion. Though some of the families who used to stay with them in the building have been shifted to a flat complex at Muttathara, which was built by the government for the rehabilitation of displaced fisherfolk, many say their names were nowhere to be seen in the list.

There are three buildings in the school compound that have been divided using a sheet. One side comprises two buildings – both used as rehabilitation shelters – while the single building on the other side of the sheet continues to function as the school. This division was made after offline classes resumed for students in November 2021, after a long break owing to the COVID-19 pandemic. Many families, however, have been living in the school since 2016, when coastal erosion started to become a recurrently destructive affair, rendering their houses unusable. To make things worse, Cyclone Ockhi unleashed catastrophe in the coastal region in 2017, causing even more people to abandon their seaside houses that frequently suffered damages due to the wildly temperamental sea.

Every room in the two ‘shelter’ buildings of the school is inhabited by two or three families, each comprising three to five people. A big hall has been divided into several parts using bed sheets, with each division serving as a ‘house’ for one family each. Home appliances such as television and fridge are placed in the corners of the room, and the beds have been arranged in the little space left. Food is also served and eaten in the hall. The only space that allows the children and the elderly to breathe freely is the courtyard outside. “Teenage boys and girls live in the building with no privacy at all. We parents have to always be cautious to ensure that our children do not watch and imitate everything we do. We are scared for our kids’ future,” Christy, another resident, tells TNM. Earlier, young boys and men used to sleep on the verandah of the third building, which was functioning as the school. However, after the school reopened, this had to be stopped. “When that was the arrangement, we at least had some privacy because half of the residents used to sleep there,” she adds.

Most of the men who live here, except the elderly, are fishermen, while some women work as fish vendors to make a living. “We lost our house to sea erosion in 2016, before Ockhi. At the time, there were 19 families living in the school. Now, up to 110 families live here. The number started to go up because rough seas and erosion became a regular occurrence after Ockhi. This is only going to become more frequent in the coming years. The situation in the area is already very intense, so much so that we are not even able to go to work at times,” says Christopher, who has been staying at the school with his family for seven years.

Christopher opines that some families were not added to the list of beneficiaries to be rehabilitated because they were not members of the Kerala Fishermen’s Welfare Fund Board. “I finally got membership in the Board two years ago. Government officials recently came and collected my family details, so we are hopeful that we will soon make it to the list,” he says.

However, according to the authorities concerned, every family that submitted relevant documents had received a flat at Muttathara as part of the government’s rehabilitation efforts. “Not everyone who is currently staying in the school lost their houses in sea erosion. Some of them used to live in rented houses. Earlier, a hearing was held to allocate four flats, which were left vacant after rehabilitating the beneficiaries at Muttathara, to people who submit the relevant documents. Even then, some people failed to produce documents,” says Sheeba Patrick, a Congress member and former councillor of Valiyathura. Irin Dasan, the current ward councillor, echoes Sheeba’s words.

“All those who submitted documents got houses. Besides, even if they had lost their title deeds, an authorisation letter from the village office would have been enough for them to be

rehabilitated. Some flats were even allotted with former neighbours' testimony alone. We just needed them to confirm that the beneficiaries used to own the house they were living in," the CPI(M) member says, adding that those who are yet to receive houses will be considered in the next phase of the government's rehabilitation project."

Kerala: Shoring up our shores

<https://www.newindianexpress.com/cities/thiruvananthapuram/2022/apr/26/shoring-up-our-shores-2446430.html>

"With cyclonic storms, sea advancement and rough sea conditions posing constant threat to the coastline in Kerala, the irrigation department has come up with a comprehensive Shore Management Plan for the state. Shankhumukham and Pozhiyoor beaches in the capital are two of the ten hotspots identified by the department for the shore protection plan.

The plan is to come up with suitable sea protection designs to prevent sea erosion and protect the shorelines and help tourism and fishing activities in the state. The department has tied up with the National Centre for Coastal Research (NCCR) for preparing the detailed project report (DPR) for the protection of the identified hotspots. A senior official told TNIE that the NCCR has already come up with a design for the protection of the Kollamcode beach at Pozhiyoor.

"We have already kicked off beach protection work at Chellanam in Kochi — one of the worst-hit coastline in Kerala. The project is being implemented with financial assistance from KIIFB (Kerala Infrastructure Investment Fund Board). Shankhumugham and Pozhiyoor are the other two priority spots identified which are being included in the shore management plan," said the official. The DPR for Pozhiyoor is ready and NCCR has proposed a sea wall there.

"The interventions are being recommended based on a study on the particular coastline and NCCR has recommended a 1.6km-long sea wall at Pozhiyoor and the project is estimated to cost around Rs 50 crore. The plan is to implement the project within a time-frame of two years," said the official.

On Monday, a team from NCCR along with officials of the irrigation department visited Shankhumukham and Pozhiyoor beaches. The NCCR has recommended offshore breakwater for Shankhumugham beach. With complaints mounting on the durability of off-shore breakwaters using geotubes, the department is planning for a different approach. The Kerala Coastal Zone

Management Authority (KCZMA) is currently implementing an off-shore breakwater project at Poonthura at a cost of Rs 19 crore.

“Geotube offshore breakwaters are turning out to be a failure in many places. Hence, we have decided to construct an offshore breakwater using stones and concrete armour units. The design of the project is ready and we will submit the proposal to KIIFB within two or three weeks,” the official said.

According to officials, the offshore breakwater project at Shankhumukham is likely to cost more. “The project is going to cost more than Rs 50 crore and it will take two to three years to be completed. A similar project has been implemented at Ullal in Mangaluru,” said the official. The official said KIIFB is trying to get the World Bank or Asian Development Bank to fund the project. “We will be submitting the project to KIIFB and the source of funding is yet to be finalised,” the official added.

Latest development on Monday, a team from NCCR along with officials of the irrigation department visited Shankhumukham and Pozhiyoor beaches. With complaints mounting on the durability of off-shore breakwaters using geotubes, the department is planning for a different approach

Kerala: Housing Rehabilitation in Coastal Kerala through Fishers’ Perspective

<https://www.epw.in/journal/2022/9/commentary/contested-relocations.html>

"Rehabilitation is always a challenging project. This article is an attempt to analyse the process of housing rehabilitation among the coastal community through the perspectives of traditional fishers.

Kerala has a coastal line of 590 kilometre (km), out of which around 350 km are under the severe threat of coastal erosion and vulnerable to a range of hazards. It is the fourth most extensive coastline of India’s 8,118 km sea coast. The consequences of hazards, such as floods, tsunami, sea wave formations, coastal erosion, cyclones, and high power tides have affected the lives and livelihoods of the coastal communities in the state. The never-ending physical and social vulnerability makes them a consistent tagline of “outlier” from the so-called achievements of the state (Kurien 1995). Landlessness, poor housing, relatively high infant mortality and maternal mortality, low level of life expectancy, worsening sanitary conditions, adverse female–male ratio, poverty-induced disease, to name a few continue to beset these groups (GoK 2011).

The Government of Kerala (GoK) has been a front runner in social innovations and introduced a

series of fishery interventions to better their socio-economic position. Housing is one area of innovation that has been incorporated in the policy and programme of rehabilitating the fishers from the disaster-prone area, especially those living within 50 metres (m) from the high tideline (HTL). Before this, the fisheries department has delivered housing needs under the two lakh and four lakh housing schemes, the 10 lakh housing rehabilitation project, the Ockhi house scheme and finally, the house repair scheme (GoK 2020a)....

Kerala: Kambavala fish workers in distress

<https://www.thehindu.com/news/national/kerala/kambavala-fish-workers-in-distress/article38350895.ece>

"For Nazir's family, fishing using 'Kambavala' (gill nets) is a traditional method handed down over generations. The uniqueness of their method is that unlike many other fish workers, Nazir and his kin do not venture out into the deep sea. A group of 30 to 40 fish workers, who work with a 'Kambavala', lays out the long net stretching hundreds of meters in the waters close to the shore, waiting patiently for a considerable catch. However, in recent years, the catch has been disappointing due to various reasons, including overfishing in the deeper waters. Their problems gets further compounded by a shrinking of the coastline.

'Best returns' "It is during these three or four months of relatively calm waters that we get the best returns. But now, there are several days on which we hardly get anything. Today, after many days, we got squid worth ₹10,000, but when it is divided among 30 people, it is nothing. Earlier, we used to get fish worth more than ₹1 or 2 lakh on the good days. Many of those who are working with the 'Kambavala' are elderly fish workers who do not venture out much into the sea. I own two such nets, each of which costs a few lakhs to make. When the catch dwindles, we struggle to pay the loans and give wages to the other workers," says Nazir.

Along the capital's coastline, there are around 80 such nets registered with the Trivandrum Kambavala Matsyathozhilali Federation, each of its employing 30 to 40 fish workers. Many of them have been struggling for the past few years with constant sea erosion washing away the shore at Shanghumukhom, Poonthura, and other areas. To prepare the 'Kambavala' for fishing as well as to dry it later, they need larger sandy expanses, which have disappeared in many of these places. According to these fishermen, the work on breakwaters in other areas might have contributed to the shrinking coast in Shanghumukhom and nearby regions. "Fishing in the deeper waters at night time using LED lights also has contributed to this situation.

We have been raising the various issues faced by us with the government for quite some time, but there has been no response. When the Vizhinjam rehabilitation package was awarded, we were also promised of aid, although of lesser amounts compared to those who used to fish in the

project area. But although our work has been affected due to the shrinking coastline caused by the breakwater constructions, we have not yet been given any compensation,” says Davidson of Poonthura. Tony Oliver, president of the Trivandrum Kambavala Matsyathozhilali Federation, said the government should take steps to either aid the ‘Kambavala’ fishermen by protecting the coastline or provide them adequate compensation and rehabilitate them.

Kerala: Focus on vulnerability mapping and bio-shields for coastal protection

<https://www.thehindu.com/news/cities/Kochi/focus-on-vulnerability-mapping-and-bio-shields-for-coastal-protection/article38283093.ece>

"A study of the coastal protection requirements of vulnerable segments like Chellanam by the Kerala University of Fisheries and Ocean Studies (KUFOS) has said that an issue-based management plan must be developed rather than a resource-based plan. The study on coastal protection and social perspectives also emphasised protection of morphology while adopting coastal protection measures. Among the suggestions that evolved during a meeting of stakeholders on social and environmental issues was the need for mapping of land use, land form, assets and people’s requirements. The suggestions will be submitted to the government. Conservation and vulnerability mapping must be carried out to develop a comprehensive coastal protection strategy in view of the conditions caused by the effects of climate change even as monitoring of the existing system should be done to suggest sustainable development protocols.

The study also said a coast-specific management approach was needed in most of the segments while seawall alternative could be developed in the Chellanam area using mangrove planting. Developing a bio-shield of a 30-metre-wide mangrove line along the coast could help Chellanam. Stakeholder and community participation at the base level should be ensured for the sustainability of such measures, the study said. Chellanam is among the most vulnerable coastal segments in the State and the government has announced a series of measures to protect the coast. Chellanam’s sea erosion problems, though in the news for long, came into prominence after Cyclone Ockhi hit the coast in December 2017.

Periodic sea water incursion and flooding of homes have made lives of the coastal population difficult, prompting the government to announce rehabilitation programmes such as ‘Punargeham’. Meanwhile, KUFOS is expected to submit its final report for turning Chellanam into a model fishing village soon after a final round of studies. The government had announced a ₹344-crore programme to strengthen seawalls, erect geotextile tube barriers and build breakwaters to protect the coast.

Kerala: 16 fisher families take refuge in crammed Valiyathura godown

<https://www.newindianexpress.com/cities/thiruvananthapuram/2021/dec/18/16-fisher-families-take-refuge-in-crammed-valiyathura-godown-2396754.html>

"Friday marked 28 days since Anushka R was born. A black thread was tied around the baby's waist and black bangles were put on her. The 28th-day ceremony was held in the sombre setting inside the godown of Kerala Maritime Board, Valiyathura, where the makeshift relief camp has been opened. Reni A, Anushka's mother, while rocking the baby, says that life has been a struggle ever since they moved in to the camp. "There is dust all around and this isn't a space to raise a baby," says Reni. She lives with her husband and their two daughters in the tiny cubicle set up in the godown. Her mother and family live in another cubicle. Reni gave birth to Anushka in the camp set up at St Roch's High School, Valiyathura, where she had been residing for nine months after sea waves destroyed their house at Valiyathura.

Just a few days after giving birth to the baby, Reni was forced to move out with 15 other families on December 3. "The school authorities and residents of the area arrived one fine evening and asked us all to move out. They knew the classes would begin and could have given us a heads-up. Instead, they drove us out, throwing all our goods out. We have lost a lot of our belongings," says Mary. The families live in the dingy cubicles that have been set up in the godown, amid the dust, without electricity. Ask Mary how the families cook. She takes you by out to one of the crammed rooms, which has a gas stove, but no burner. "How can we cook? When they threw out our belongings, we lost a lot of things," says Mary.

With the bare minimum facilities in the godown, the residents are finding it difficult to live, and some have chosen to stay in the verandah of the building. Eighty-year-old Alice who has suffered a stroke lies on the verandah. Not a moment passes without flies hovering around her. Sixty-year-old Matilda who takes care of her mother says that her mother needn't be shifted to the hospital and all that they want is a proper space to live. "I can take care of my mother. There is no need to shift her to the hospital," she says. Officials from Muttathara village office arrived in the afternoon to check on Alice. "We arrived after hearing that she was unwell. But she is refusing to be shifted to the hospital," says village officer Kumar A.

He said electricity will be provided to the facility soon. The 16 families residing in Kochuthoppe were asked to move to the relief camp at the school after their houses got destroyed in sea erosion. "We lived well. We had enough rooms, privacy and a good space to live. It is not our fault that we lost everything to sea erosion. Ever since the Vizhinjam project began, we have been bearing the brunt. The government has promised us homes and that the foundation stones of our homes will be laid in January.

If that doesn't happen, the repercussions would be heavy," says Mary. In the two godown spaces of the building, the 16 families took refuge, along with the families already living at the facility.

“The godown spaces were used to store cement, so there is a lot of dust here. And there is no electricity and we are forced to sleep outside,” says Jesse. Jesse lives in one of the makeshift cubicles set up in the godown along with her husband, son and daughter-in-law. Jesse’s husband Antony suffered a stroke which has affected the movement of his left arm and left leg. Antony who used to go fishing can no longer do that and the whole family survives on Jesse and her son’s earnings. “We can’t stay here forever. We had our own homes where we lived in peace and dignity. Our lives are now reduced to these dingy rooms. Our request is to give us what is ours,” she says.

Kerala: 41% of coastline under erosion threat: Study

<https://www.newindianexpress.com/states/kerala/2021/dec/12/41-of-keralas-coastline-under-erosion-threat-study-2394576.html>

"Giving enough reasons for the state to worry, a study report tabled in Parliament by the Ministry of Earth Sciences reveals that 41% of the coastline in Kerala is under varying degrees of coastal erosion. The National Centre for Coastal Research has monitored the shoreline changes along 6,632km of Indian coastline from 1990 to 2018. The results of the study are mainly classified into three different categories — erosion, stable and accretion. The overall long-term (1990-2018) shoreline change result shows that about 32% of the coastline is under varying degrees of erosion, while 27% is of accreting nature and the remaining 41% is in a stable state. The state-wise shoreline analysis reveals that 60% of the West Bengal coast was noticed with varying degrees of erosion followed by Puducherry (56%), Kerala (41%) and Tamil Nadu (41%). Accretion was dominant along the Odisha coast with 51% followed by Andhra Pradesh (48%).

This is not the first time the grave situation along the 590km-long coastline — one of the most densely populated in the country and exposed to rogue waves — is being exposed. The ‘National assessment of shoreline changes along Indian coast: A status report for 26 years (1990-2016)’ prepared by the National Centre for Coastal Research had revealed that around 45% of Kerala’s coastline is eroding while 34% is stable and 21% accreting. The report said coasts of Kasaragod, Kannur, Malappuram, Ernakulam and Kollam are dominated by both erosion and stable condition with a few pockets of accretion. Another study, ‘Coastal Morphology and Long-term Shoreline Changes along the Southwest Coast of India’, conducted by the National Centre for Earth Science Studies and published in Journal Geological Society of India, revealed that almost 60% of the state’s coastline is eroding with about 29% showing an accreting trend.

A 46-year-period from 1968 to 2014 was studied using multi-dated shoreline images and Survey of India topographic charts. All these studies point to factors like construction of structures such as fishing harbours, ports, groynes, sea walls and beach sand mining for monazite ores for

altering the nature of the coastline and induced changes. M C Dathan, scientific advisor to the chief minister and a former director of ISRO's Vikram Sarabhai Space Centre (VSSC), said, "Coastal erosion is more vigorous and rampant along the coastline of Kerala as more energy is stored in the waves of the Arabian Sea as compared to the Bay of Bengal. There are a lot of global factors which influence the sea surface temperature and wind patterns over the sea. We have been following various methods like construction of a sea wall, diaphragm wall etc here to dampen the force of waves. It is to some extent useful but, certainly, more needs to be done."

Kerala: Final survey for Chellanam model project to start today

<https://www.newindianexpress.com/states/kerala/2021/dec/10/final-survey-for-keralas-chellanam-model-project-to-start-today-2393785.html>

"The Kerala University of Fisheries and Ocean Studies (Kufos) will launch the final survey for the Chellanam model fishing village project on Friday. A group of 80 Bachelor of Fisheries Science (BFSc) students will visit around 8,500 houses in the coastal village over the next 10 days to collect suggestions on steps to be taken to empower and rehabilitate villagers and find a permanent solution to their miseries. The survey will start from Mundamveli Kattiparambu at 9 am. Kochi MLA K J Maxi, Kufos Vice-Chancellor K Riji John, registrar B Manoj Kumar and other top officials will be present on the occasion. Kufos Chellanam nodal officer and head of aquaculture department Dinesh Kaippilly will lead the survey.

"We have prepared a questionnaire with 39 questions to understand the social and economic status of the villagers. We will record their suggestions on basic infrastructure facilities required and steps needed to address their woes. Each student will visit 100 households, ask questions and fill the questionnaires based on the residents' responses. The questions have been uploaded on Google forms and students will fill up the forms using the mobile app. We will then analyse this data and submit a detailed report to the government," said Dinesh. The Chellanam model will be a pilot project, which will be extended to other coastal villages based on the results here. The Kufos had submitted an interim report to the government earlier with suggestions on immediate measures to be taken to protect the villages that have been battered by coastal erosion. The report recommended steps to improve infrastructure, ensure economic and social security and address livelihood issues. It also suggested the construction of T-shaped groynes to check tidal waves.

newindianexpress.com 2021"

Kerala: 45 percent of coastline facing erosion

<https://keralakaumudi.com/en/news/news.php?id=702640&u=>

"A study conducted by the National Center for Coastal Research (NCCR) has found that 45 per cent of the coastline of Kerala is subject to varying degrees of erosion for over two and a half decades. The shocking fact was mentioned in the National Shore Line Change Assessment Mapping for Indian Coastal Report by the NCCR. According to the report, unscientific construction of structures such as fishing harbours, ports, groins and seawalls, sand mining, climate change, monsoon fluctuations, and rising sea levels due to global warming have largely contributed to the erosion of the coastline. The coastline of Kerala is 592.96 km long. The coastal area is up to seven and a half meters above sea level.

This area, which covers only 10.25% (3979 sq km) of land area, is very densely populated. The population density of Kerala is 810 per sq km. However, in coastal areas, the population density is as high as 2168. Hot spots and threats

1. Thiruvananthapuram: Construction of harbour at Thengapattanam and dredging at the port
2. Kollam: Sand mining activities in Alappad
3. Alappuzha: Unscientific construction of harbour from Purakkad to Chellanam
4. Ponnani-Kasargod: Unscientific construction activities

Rising sea level

1. During the period 1993-2015, the sea level in the country rose by 3.3 mm
2. Increase of 1.75 mm in sea level per year along Kochi coast
3. An area of 169 sq km in Kochi is at risk of floods.

Kerala: Satellite data reveals 41% of state's coastline is facing erosion: Govt

https://www.business-standard.com/article/current-affairs/satellite-data-reveals-41-of-kerala-s-coastline-is-facing-erosion-govt-121113001782_1.html

"Satellite data from 1990 to 2018 has revealed that 41 per cent of the coastline of Kerala is subject to varying degrees of erosion, the Parliament was informed on Tuesday. ""Some stretches of India's shoreline are subject to varying degrees of erosion due to natural causes or anthropogenic activities. The National Shoreline Change Assessment Mapping for Indian coast carried out by the National Centre for Coastal Research (NCCR) using 28 years of satellite data from 1990 to 2018 revealed that 41 per cent of coastline of Kerala is subject to varying degree of erosion,"" Minister of Fisheries, Animal Husbandry and Dairying, Parshottam Rupala told the Lok Sabha said in reply to a question by Congress leader Shashi Tharoor.

Stating that the coastal erosion does impact coastal communities residing in the erosion prone areas including fishermen, Rupala said that the Department of Fisheries, under the Centrally Sponsored Scheme - Blue Revolution Integrated Development and Management of Fisheries, implemented during the period from 2015-16 to 2019-20 - provided financial assistance of Rs 93.84 crore for fishermen welfare-related activities including construction of fishermen houses. Besides, under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) being implemented with effect from 2020-21, a sum of Rs 50.89 crore has also been provided to the Kerala government for implementation of welfare related activities, including livelihood and nutritional support to

socio-economically backward active traditional fishers' family, he said. Fisheries sector plays an important role in the socio-economic development of about 28 million fisher-folk, providing food and livelihood security, the government said adding, the contribution of the fisheries sector in the National Gross Value Added (GVA) during 2019-20 stood at Rs 1,26,370 crore (at constant basic prices; 2011-12) constituting 0.95 per cent to the national GVA and 6.42 per cent of the agricultural GVA. Tharoor's question, however, was about GDP and not GVA. He had asked: ""Whether the country's fisheries sector enormously contributes to food security by employing more than 14.5 million people and contributing to 1.07 per cent of the GDP and 5.37 per cent of the agricultural GDP.""

Kerala: Experts recommended fishermen at Vypeen should adopt novel methods where they can increase fish harvest and thereby increase their income

<https://timesofindia.indiatimes.com/city/kochi/call-for-novel-fishing-methods-at-vypeen/articleshow/87724018.cms>

"Experts recommended fishermen at Vypeen should adopt novel methods where they can increase fish harvest and thereby increase their income. The recommendations were put forward on the second day of the workshop on 'Vypeen island protection and sustainable development' on Monday. "The availability of quality fish is coming down in the state. Hence, prospects for aquaculture methods like cage fish farming and biofloc is high at Vypeen which is a favourable place for fish production. "Farmers can cultivate and harvest Vannamei shrimp (whiteleg shrimp) on the compounds of their houses itself. It has high export opportunities," said Kerala University of Fisheries and Ocean Studies (Kufos) registrar B Manoj Kumar. "Shrimp can be cultivated in biofloc method and harvested in seven months. By expanding pokkali farming, cage farming can be done along with prawn farming at pokkali fields.

Aquaponics method also can increase job opportunities," he said. Other than creating job opportunities associated with fish farming, export of marine and value-added products also will create employment. The workshop also discussed the prospects of inland tourism in the area by giving thrust to the tradition of the island, culture, history, pokkali farming and water resources. "Since the population density is high at Vypeen, possibilities of setting up small-scale industries in electronics, organic vegetable farming and waste management can be explored," Kumar said. The workshop is held in the backdrop of climate change induced incidents at Vypeen. The area witnesses recurring episodes of sea erosion and high tide. It has been envisaged to formulate a master plan for the island by consolidating the expert views and traditional knowledge emerged at the workshop. The workshop will conclude on Tuesday and water resources minister Roshy Augustine will inaugurate the valedictory function.

Kerala: Fishers on Mossodi beach yet to get compensation for destroyed houses

<https://www.thehindu.com/news/national/kerala/fishers-on-mossodi-beach-yet-to-get-compensation-for-destroyed-houses/article37262204.ece>

"Whenever the meteorological department issues alerts of heavy rain in the wake of a depression in the Arabian sea, fishermen such as M. Abdul Majeed and others on the Moosodi beach at Manjeshwar in Kasaragod have a sleepless night. For the past two years, such alerts have portended a nightmare for them with houses being damaged or totally destroyed in the cyclone and the consequent sea erosion. There has been no significant support from the government, except for a small compensation, which some of them have already used for paying the rent for the houses to which they have been forced to move following the disaster. Riyaz, a fisherman here, who lost his house two years ago, received a compensation of Rs.95,000. But since then, he has been living in a rented house with his family.

"I have finished the money paying the rent for the house, which is Rs.5,000 per month. Now, we have lost all hope of receiving any help from the government", he said. Mr. Majeed, another fisherman, is forced to live at his brother's house after his own dwelling collapsed in front of him during cyclone Tauktae earlier this year. "My house was partly damaged in 2018, but in March this year, the seawater completely destroyed the house in front of us," he said. Except for empty promises of compensation by the government of paying Rs.10 lakh for construction of a new house, they had received anything, he lamented. After knocking on every door of government offices, he finally got a relief of Rs.95,000 recently. But the officials had not still confirmed when the promised Rs.10 lakh would be paid.

More than 10 persons now live in the house belonging Mr. Majeed's brother. That house too is near the beach and the fear of waves taking away this house too constantly looms in their mind. Till now, the Fisheries department has helped in constructing houses for only two fishermen who were affected prior to 2018. Another fisherman, who approached the court, received the complete compensation of Rs.10 lakh. Many here lamented that they were not financially sound to approach the court against the inaction of the authorities. However, P.V. Satheesan, Deputy Director of Fisheries Department, said they would allot the compensation to fishermen families if they identified a suitable land for constructing the house.

Many of them had not identified such land while several others were not fishermen or were working in other places, including abroad, he said. Mr. Satheesan said that the authorities were constructing flats for 140 families at Kozhipadi in Kumbala at a cost of Rs.23 crore. However, members of the fishermen community said there was an attempt to uproot them from their land.

They alleged that flats were constructed to help people who had a vested interest in their land. They demanded that the fishing community be given the land near to the beach where they live now.

Kerala: Keeping alive a mangrove conservationist's legacy to protect

<https://india.mongabay.com/2021/09/keeping-alive-a-mangrove-conservationists-legacy-to-protect-kerala-coast/>

"Born into a marginalised family in 1937 in Kerala, his umbilical cord looked almost like a bloated seed of a common mangrove tree. So, his parents who worked as farm labourers named him Pokkudan, which in the local language, refers to infants with such umbilical cords. The man, who was unable to complete elementary school education due to poverty and caste-based discrimination, died on September 27, 2015, leaving behind a rich legacy of protecting 22 species of mangroves from local extinction. Better known as Kallen Pokkudan, the Dalit from Kannur district became a celebrated guardian angel of Kerala's mangrove forests through dedicated interventions over the years.

Pokkudan travelled across Kerala's coast telling the local communities, especially fish workers, that only mangroves could protect coastal assets during hazards such as cyclones. On his travels, he collected seeds of 22 species of mangroves. There were only a few takers in those years for his argument that mangroves are one of the vital long-term solutions to sea erosion and storms, which turn coastal communities into climate refugees. To prove his point, Pokkudan had created mangrove walls at Choodat beach in Kannur and Arattupuzha in Alappuzha and prevented sea erosion-related issues that concerned the respective local fishing communities. Now, climate change and rapid, unscientific development of mega infrastructure projects have crippled everyday life on the 590-km long Kerala coastline; sea-erosion and sea accretion are worsening the situation.

Experts have warned that coastal areas in the state will witness an increasing number of sea surges in the coming years, primarily due to rising sea surface temperatures. Experts advocating for nature-based solutions involving the active participation of coastal communities are looking to answers such as those spotlighted by Pokkudan, who consistently argued that erecting granite seawalls would turn counter-productive. Restoring coastal vegetation, mainly mangrove forestation, is the need of the hour, they say. "It was 1989; my father started planting mangroves seedlings along mud-bunds which protect the traditional shrimp fields in the brackish water wetlands of Kannur where wet paddy and fish are cultivated. He was 52 then. Soon he started mounting public opinion against land reclamation, garbage dumps and deforestation that threatened coastal forest ecosystems.

Then based on the traditional knowledge he gained and practical expertise from the local fisher community, he concluded that mangroves are the best available deterrent against sea erosion,” said Anandan Paithalen, elder son of Pokkudan, a schoolteacher by profession. Anandan is now on a unique mission with his five siblings. They revived the defunct Kallen Pokkudan Mangrove Trust in recent months, formed by their father in 2013 to impart mangrove conservation literacy to society. With the help of Kerala government’s social forestry and education departments and environmentalists, the trust has started preparing mangrove nurseries in schools, youth clubs, and voluntary organisations in ten coastal districts to generate enough seedlings to plant in areas that witness sea erosion. The Kerala coast would get a mangrove protection wall in another six years as per the ongoing project.

“My father had incurred financial debt by devoting himself to promote the mangroves. After his death, the immediate priority of the family was to clear the debts. Now we are reviving the trust using our resources and his legacy through conservation activities,” said Anandan Paithalen’s sister Pushapalatha. “They can buffer erosion, enhance bio-biodiversity, prevent high tide incursion, and even reduce the impact of future tsunamis. So, we have high hopes for the initiative started by Pokkudan’s family. The appreciative aspect is that they collect the seeds and make them available free of cost at the respective nurseries to local communities. The government departments and environmentalists can only meet expenses of the upbringing at the nursery,” said Jaffer Palott, noted environmentalist.

According to P Sujanapal, a scientist with Kerala Forest Research Institute, Kerala’s mangrove cover has severely disintegrated in the last four decades with their spread declining from 700 sq km to 24 sq km in that period. Of the remaining wetlands, Kannur has 45 percent of the total mangroves, largely thanks to Pokkudan. Now the effort is to increase the mangrove cover manifolds mainly in the coastal region. Like Pokkudan, his children also live in close contact with the wetlands of Kannur and collect, preserve, and plant the seeds, primarily of the “mad mangrove” tree – the long-fruited, stilted mangrove known as *Rhizophora mucronata*. They are also promoting some other rare species of mangroves. In total, 22 varieties of mangrove trees welcome you to Pokkudan’s village Pazhyanagadi in Kannur district, including *Clerodendrum inerme*, *Premna serratifolia*, *Acanthus ilicifolius* and *Derris scandens*. The surroundings of Pokkudan’s ancestral home have now turned into a massive mangrove nursery. Interestingly, what had led to Pokkudan’s passion for mangroves was political disillusionment.

Pokkudan had spent a significant share of his life organising and strengthening the labourers’ union of the Communist Party of India (Marxist). He started noticing how monsoon storms were drenching little school-going children while they walked to the school through narrow mud paths in his hometown. During heavy monsoon days, the lashing winds would take their umbrellas away. The high-energy storm waves would destroy embankments around the paddy cultivating

areas. Over the years, the mangrove wetlands in his hometown had turned into garbage dumps for neighbouring towns. Such a situation had severely affected the ecological functions of the wetlands; it had impacted their nutrient cycling, flood control function, groundwater recharging, salt dissipation, absorption and dilution of pollutants, and the creation of microclimatic niches that support different forms of life.

The mangroves always remained a rich medicine, food, and fuel source for the marginalised community (Pulayan) Pokkudan belonged to. “The fish, the birds, and the people all depend on the mangroves,” says Anandan. He said his father called the trees “the security guards of the earth” and was convinced that floods in coastal regions would not kill so many if there were mangroves. According to Pokkudan’s younger son Sreejith, collecting the seeds of the mangrove trees is strenuous work. Besides, the swamps where mangroves grow often remain choked with waste. “Our father aimed to construct a mangrove wall in the coast, and we will fulfill it,” said Pushpalatha, one of Pokkudan’s children.

“In the past, our father had led a one-person movement for mangroves. Now, his family is in the process of evolving it as a mass movement with the involvement of students, fish workers, and farmers,” she added. “So far, the government has dumped granite boulders mined from the Western Ghats on the coast. The construction of granite boulder walls that began in the 1960s turned into a wasteful process with huge expenditure from the public exchequer. The ideal option is creating a green belt comprising the finest varieties of mangroves in the coastal region. It must be a unique wall that can grow organically and ensure a sustainable livelihood option for coastal communities,” says Anandan. “Numerous mangrove restoration projects were initiated after the 2004 tsunami.

Mangroves can rapidly diminish the height of wind and the swell of waves. Even during relatively large storm surges, the leaves and branches of the forest canopy will help reduce wave energy providing the trees are tall enough,” points out coastal zone expert Max Martin. According to aquatic biologist A. Bijukumar, restoring the coastal mangrove ecosystem is a challenging and gradual process that needs to be scientifically robust. “The effort is to plant mangroves in areas where they were not in existence for long, especially the mudflats. In such areas, saplings that can withstand soil erosion and wave action must be preferred. Low oxygen availability due to constant moisture is an issue in mudflats, and that may cause high seedling mortality and stunted growth. So the choice of local good quality seed is important,” he said. “Some mangrove species tolerate greater saltwater flooding than others.

They must be preferred. To create a multi-species community we need to combine species that complement one another. Involving the local communities, especially fish workers, in the process is supreme. Local communities know much about successful mangrove management, and their involvement is key to long-term success in restoration, management, and benefit

flows,” he said. Inspired by Pokkudan, 55-year-old fish worker T P Murukesan of Vypeen in Kochi started his mangrove nursery and plantation initiative ten years ago to prevent sea erosion and flooding on the coast. In collaboration with Pokkudan’s family, Murukesan is engaged in plantation drives in coastal villages of Cherai, Njarackal, North Mulavukad, Nayarambalam, Vallarpadam, Mangalavanam, and Chellanam with the forest department. The mangroves he planted grow lush, providing animals and birds with a safe environment.

As per the initial plan, seedlings prepared in the nurseries would be taken to the coast for planting by October end coinciding with the opening of educational institutions in Kerala after COVID-19 lockdown. The trust feels that the involvement of school and college students is critical in promoting mangroves. The same kind of activities would be undertaken by the trust every year. “We are also determined about the involvement of the fisher community,” says Anandan.

Keeping alive a mangrove conservationist’s legacy to protect the coast of the south Indian state of Kerala

<https://india.mongabay.com/2021/09/keeping-alive-a-mangrove-conservationists-legacy-to-protect-kerala-coast/>

"Born into a marginalised family in 1937 in Kerala, his umbilical cord looked almost like a bloated seed of a common mangrove tree. So, his parents who worked as farm labourers named him Pokkudan, which in the local language, refers to infants with such umbilical cords. The man, who was unable to complete elementary school education due to poverty and caste-based discrimination, died on September 27, 2015, leaving behind a rich legacy of protecting 22 species of mangroves from local extinction.

Better known as Kallen Pokkudan, the Dalit from Kannur district became a celebrated guardian angel of Kerala’s mangrove forests through dedicated interventions over the years. Pokkudan travelled across Kerala’s coast telling the local communities, especially fish workers, that only mangroves could protect coastal assets during hazards such as cyclones. On his travels, he collected seeds of 22 species of mangroves. There were only a few takers in those years for his argument that mangroves are one of the vital long-term solutions to sea erosion and storms, which turn coastal communities into climate refugees. To prove his point, Pokkudan had created mangrove walls at Choodat beach in Kannur and Arattupuzha in Alappuzha and prevented sea erosion-related issues that concerned the respective local fishing communities. Read more: <https://india.mongabay.com/2021/09/keeping-alive-a-mangrove-conservationists-legacy-to-protect-kerala-coast/>

Kerala: Chinese fishing net operators fall on hard times, decry apathy

<https://www.thehindu.com/news/cities/Kochi/chinese-fishing-net-operators-fall-on-hard-times-decry-apathy/article36444093.ece>

"Seventy-year-old Kunjappan pointed to a wooden stump on the famed Fort Kochi beachfront, the sole remnant of a massive Chinese fishing net he owned till a few years ago. This and many other Chinese nets that still proudly adorn tourism brochures about Kochi would still have been operational, if Kerala Tourism's Rs.2.44-crore long-overdue project to help renovate the nets using lengthy teak and Kalasanthi wood logs had materialised. "I began pulling the cantilever nets in 1965. Inadequate government support and sea erosion due to dredging of the shipping channel resulted in the number of nets dwindling from 25 to eight during the past three decades. Much of the delay in kick-starting renovation work could have been avoided if Kerala Industrial and Technical Consultancy Organisation (KITCO), the implementing agency to whom the Kerala Tourism handed over half the project cost, had been proactive in sourcing lengthy teak logs [which constitute the cantilever frame of the nets] from the Forest Department," Kunjappan said.

Many of the iconic nets withered away or were dismantled, since net operators found it tough to procure teak wood on their own to replace the worn-out logs. In addition, the tough grind involved in six people having to pull the nets simultaneously, be it rain or shine, has resulted in it becoming difficult to get workers, he added. Franklin, a worker who earned a living for decades pulling the nets, pointed to how people like him fell on hard times owing to high operational cost and dwindling fish catch. He pointed to termites and the elements destroying many of the over a dozen Kalasanthi wood logs that were unloaded at the Vasco Da Gama Square over three years ago. "They could have been used to form 'hinges' which supported the massive teak logs, if the logs had been made available in time," he said.

Apart from their tourism value, over 10 families are dependent on income from each net. A senior Kerala Tourism official said the project that was set in motion in 2014 was caught in red tape and many avoidable delays in implementation. "A litigation on who would install the logs too caused delay. Soon after the Forest Department sanctioned teakwood for the purpose and issued a three-month deadline to take their possession, the pandemic set in. We have begun the process of procuring the wood in earnest," he added. He confided that Fort Kochi would lose its value as a pristine heritage locale and go the Kovalam way in less than a decade, if the nets were not conserved. In addition, encroachers who have set up kiosks and vends must be removed.

Kerala: Why the problem of open defecation persists in coastal regions

<https://www.thenewsminute.com/article/why-problem-open-defecation-persists-kerala-s-coastal-regions-154719>

"Manjush, a traveller from West Bengal, visited Kerala in January 2021. Staying in a homestay in Poovar, he had a very bad experience when visiting the nearby beaches. "When you go to the popular beaches here, what puts you off is the plastic waste strewn all around. But in Poovar when I visited some of the lesser-known beaches, I saw men defecating in the open and washing in the sea. I once accidentally stepped on human faeces," he recalled. "I knew open defecation is quite common across our country, including my state, but I didn't expect it in Kerala," he added. In 2018, Kerala was declared an open defecation free state. But travelling through some of the regions in the state, it is apparent that the declaration is not valid. Coastal regions are one of the main examples of this.

Those who visit rural beaches that have no crowds have the unpleasant experience of spotting or stepping on human faeces. "Kerala becomes the first high density populated state in the country to achieve Open Defecation Free status today on its formation day," Kerala Chief Minister Pinarayi Vijayan announced in a tweet in January 2018. But some regions in the state still need awareness to complete the achievement. In coastal regions, some people are used to the practice of defecating on the beach as they have to go fishing early in the morning. "Fisherfolk go to the beach at 2 am or 3 am to check the weather conditions at sea. After reaching there, they don't go back home for their morning necessities. This is an issue across the state, however the younger generations are not practising it," Jackson Pollayil, President of the Kerala Independent Fisher Workers Federation, told TNM. He added that since the fishermen have to go to work early in the morning, it is a question of how to solve the issue.

Charles George, Mathsya Thozhilali Aikya Vedi President, also echoes the same opinion. "The older generation has been practising it. Now there is a rule that bigger boats should have toilet facilities," he said. Kristuraj, a 45-year-old fisherman from Thiruvananthapuram's Pozhikkara, says, "Not everyone does it, but a few people follow this habit even now, conveniently defecating in the sand. It's a nuisance not only for visitors but for other fishermen too. The offenders know our children come to play here in the sand, but they are not bothered," he said. The fishermen associations are not very focused on the issue as they have to deal with a lot of other troubles faced by the community. "We have warned them about this many times. Though they have a toilet at home, they find it easy to defecate on the beach. They say they need to go to work early in the day. We have no idea how to solve this issue," Roseline, a former panchayat ward member from a coastal village in Thiruvananthapuram, said.

On the other hand, the community also faces the issue of lack of toilets. Massive beach erosion and high tides have caused major damage to the houses and toilets of people living in many of the coastal regions. Amina, who lives near Kozhikode's South Beach, says they depend on open air for defecation. "Most of the toilets in our area were destroyed by the sea. Some of them were partially destroyed, with the roof and door gone missing. Since our houses are so close to the sea,

new construction is not allowed. Men go to the toilet easily in the open, we wait till late night,” she said. Most of the houses are on poramboke land so the municipality also does not help them. Similar is the situation in Thiruvananthapuram’s Valiyathura, where the toilets and houses were destroyed in sea attacks, following which the residents have been forced to defecate in the open.

“Across the state many of the toilets have been damaged due to sea erosion. There are still many houses in the coastal areas with no proper toilets. Many residents are also forced to live in relief camps for a long time,” Mageline Philomina Yohannan, a renowned activist working among the fishing community, said.

Kerala: Minister announces Rs.344.2 cr project for coastal protection

<https://english.mathrubhumi.com/news/kerala/relief-for-chellanam-minister-announces-rs-344-2-cr-project-for-coastal-protection-new-project-for-chellanam-1.5956976>

"Minister of Water Resources Roshy Augustine announced the Chellanam Coastal Protection Project. The Minister announced Rs 344.2 crore for the protection of the coast using tetrapods. 'Chellanam residents are the first to flee their homes whenever low pressure area and cyclone forms in the sea. A permanent solution is needed in this area as no temporary solutions are possible. The government is planning to implement a scheme in such a way that the residents will not have to be relocated due to adverse weather conditions. The government has sanctioned `Rs 1500 crore for the first phase of the project.

The tender process will start by September 15, ”said Minister Roshy Augustine. The minister announced the project at a function held in Chellanam Bazaar on Monday. With this, the locals and the government are hoping that the ongoing problems in the area will be resolved. The coastal protection project is conceived with the help of modern technology based on a study conducted by Chennai-based National Centre for Coastal Research. A study on coastal areas across the state has identified 10 hotspots facing severe coastal erosion. Of these hotspots, priority is given to Chellanam coast. In addition to protecting the coast with tetrapods, activities using the geotubes are also being implemented in the area.

The first phase is the rehabilitation of the sea wall near the harbour in Chellanam panchayath and the construction of a 1.90 km tetrapod at the Bazaar Kannamali area. The first phase of construction will begin on ten hotspots facing the severe tidal wave attack. Rs 5300 crore will be fully utilized within five years for coastal protection. A tourism centre will be established in Chellanam with the collaboration of the Department of Tourism. The Minister said that the Irrigation Department has started the process of establishing dam centred tourism centres. The government has earmarked Rs 5300 crore for coastal protection activities across the state. The Irrigation Department, with the help of KIIFB, has approved a project of Rs 344.2 crores to set

up tetrapods at Chellanam. The project aims to solve the problem of tidal wave attacks and make Chellanam a model fishing village. Interestingly, Chellanam is selected for Kerala's first fish village project.

Kerala: Coastal families look up to sky with worry

<https://www.newindianexpress.com/cities/thiruvananthapuram/2021/aug/25/coastal-families-look-up-to-sky-with-worry-2349269.html>

"With the Northeast Monsoon and next cyclone season fast approaching, the coastal belt in the capital continues to be under strong sea erosion threat. Almost every project planned by the government to address the coastal erosion remains on paper, putting hundreds of fisherman families under threat. The project to construct a 700-metre-long breakwater to protect the shoreline from Poonthura to Valiyathura — one of the worst-hit areas in the capital, continues to drag on. Though the state government announces huge financial packages to protect and develop the coastal belt which is deteriorating year after year because of the unpredictable weather conditions, cyclones and unscientific constructions, the funds remain unutilised because of lack of projects. This year too, the state government has announced a whopping Rs 11,000-crore package to mitigate coastal distress and ensure the protection of the shoreline.

More than 28 per cent of the entire fishermen community in the state is from Thiruvananthapuram. Hundreds of families have lost their homes and continue to live in relief camps and every year more families are getting displaced. The entire coastal belt is severely battered by heavy sea erosion making it impossible for the fishermen even to venture into the sea. Fisherman forced to go to Vizhinjam Debyans S, a fisherman hailing from Poonthura, said the fishermen from the area are forced to go to Vizhinjam for fishing as it's impossible to venture into the sea at Poonthura because of severe sea erosion.

"This is one of the worst-affected areas and everyday we travel to Vizhinjam for fishing. If the project is implemented, we can do it here itself and save money which is being spent on travelling," says Debyans. The Poonthura breakwater project has faced a major setback with IIT Madras raising concern about the quality of the material being used for its construction. The project has suffered huge delays because of the pandemic and tender-related issues. The offshore breakwater is planned 120 metres away from Poonthura coast. There will be five small breakwaters of 100 metres in length lined up at a depth of six metres in the sea. The geocomposite tubes, filled with sand, is expected to weaken the waves and also help beach formation. The pilot project, which is estimated to cost around Rs 18 crore, is being implemented with the technical support of the National Institute of Ocean Technology (NIOT), which carried out a model study for the project.

An official of Kerala State Coastal Area Development Corporation (KSCADC), the agency implementing the project, said the IIT hasn't approved the material and more samples would be tested to get the approval. "It took almost two months to get the quality check report from IIT Madras and we have decided to approach other internationally accredited agencies to check more samples to avoid further delay," said the official. They cannot go ahead with the project without getting the quality approval of the material used for the project. "The contractor would start the work immediately once we get the clearance and would be completed in no time," the official added. Fishing harbour remains on paper. General convenor of Valiyathura Thuramugha Samrakshana Vikasana Samithi Melvin Vinod said several projects being planned remain on paper, including the mini-fishing harbour project.

The Kerala Coastal Zone Management Authority had granted clearance for the fishing harbour project back in 2014. "As per the environmental impact study, the fishing harbour would have helped mitigate sea erosion along the coast. The project had proposed a groyne field consisting of three T-groynes on the northern side of the harbour to combat sea erosion. This would have helped avoid the sea erosion at Poonthura, Valiyathura and Shankhumukham," said Vinod. Former Valiyathura councillor Tony Oliver said hundreds of families are on the verge of displacement. "The sea has turned unpredictable like the weather conditions. The families are getting displaced after every cyclone and monsoon. Hundreds of families have lost their homes and a large majority are yet to get houses promised by the state government. More families will lose homes if the government fails to protect the coast," said Oliver.

Kerala: How climate change is taking a toll on livelihoods of small-scale fishers

<https://india.mongabay.com/2021/08/how-climate-change-is-taking-a-toll-on-livelihoods-of-small-scale-fishers-in-kerala/>

"Until recently, Kerala's coastal population had every reason to rejoice the arrival of the monsoon in the state. Apart from numerous good fishing hauls, the important celebratory moments like weddings came about during the monsoon season which spans from June to August, as they generally attained economic stability during the period. However, over the last few years, climate change and the ensuing shifts in the marine environment have disrupted the rhythm of their lives. Long gone are the days of big catches and the subsequent rise in seasonal income for the small-scale fishers. "Our age-old custom of planning and celebrating big events during the monsoon season has come to a halt as this period no longer offers us a stable income for the past few years.

Lately, the monsoon is quite erratic in its patterns resulting in a reduction in the number of fishing days, and thus becoming the worst-hit season of the year," says 55-year old Ponnann K., a traditional fisherman from Alappuzha. - Erratic monsoon patterns and other disruptions by

climate change are reducing number of fishing days as well as fishing stock in the waters of coastal Kerala. - There has been a steady decrease, over the past five years, in the availability of oil sardine and this is hitting the economic stability of coastal communities. - The income of small-scale fishers in Kerala, who depend on fishing for daily needs, has drastically reduced in recent years. People are quitting fishing and looking for other livelihood options to support their families.

In addition, the unavailability of commercially important fishes also adds to their woes. “These days we return with empty boats. Going out fishing only adds to our debts,” says Unnikrishnan T.B., another fisherman from Vypin in Ernakulam district.

Like Ponnann and Unnikrishnan, as many as 1,37,248 active fishermen in Kerala are passing through a difficult phase in their life, as the impacts of climate change are taking a toll on the livelihoods of the small-scale fishermen who go for fishing primarily to feed their families on daily basis. A series of environmental phenomena such as rapid warming of the Indian Ocean, sea-level rise, frequent occurrences of cyclones and associated impacts such as the vulnerability of many fish stocks and disruption of fish food like planktons are attributed to climate change by marine scientists. Loss of working days coupled with the depletion of resources has spelled doom for the livelihood of resource-poor fishers in Kerala.

A drastic drop in the availability of the Indian oil sardine has further deepened their trouble. Loss of fishing days In a recent research article Changing Status of Tropical Cyclones Over the North Indian Ocean published in the journal *Climate Dynamics*, a group of scientists observes that the frequency, intensity and duration of cyclonic storms have increased in the Indian Ocean. According to them, the frequency of cyclones has increased by 52% in the Arabian Sea (during 2001-2019) and that of very severe cyclones has risen by 150%. While the intensity of the cyclones increased in the region by about 20% to 40%, the duration of very severe cyclones is up by 260% in the Arabian Sea, says this study.

“The sea surface temperature (SST) has increased by 1.2 degrees to 1.4 degrees for the past century. The surface temperature in the Arabian Sea sometimes rose to 31°C-32°C which is 28°C-29°C normally,” says Roxy Mathew Koll, Climate Scientist with Indian Institute of Tropical Meteorology, Pune and one of the authors of this study. Rapid warming of the sea and associated impacts, including cyclonic storms, adversely affect the fishing calendar days. With a substantial increase in alerts on cyclones or extreme weather conditions followed by Cyclone Ockhi in 2017, the number of fishing days has drastically come down, impacting the livelihood of fishermen. Annual marine fish landing estimates of the ICAR-Central Marine Fisheries Research Institute (CMFRI), Kochi shows Kerala experienced a fall of 46% in the number of fishing days in 2017 compared to the previous year due to Cyclone Ockhi. Some scientists call

the phenomena ‘weather shocks’ which according to them have adverse effects on marine environment.

“Change in ocean ecosystem following a series of climatic issues directly affect the small pelagic resources such as oil sardine,” says Grinson George, marine scientist and Senior Programme Specialist of the SAARC Agriculture Centre, Dhaka, Bangladesh. According to George, who works on climate-related aspects in fisheries and aquaculture in South Asian region, weather shocks and associated developments in the waters influence the distribution pattern, life cycle, behavioural changes, migration pattern and reproduction of the fish stocks. Vulnerability of fish to climate change Another study by Koll signals the reduction of primary productivity such as phytoplankton in the waters owing to rapid warming over the tropical Indian Ocean. The study, published in the Geophysical Research Letter, finds that “enhanced ocean stratification due to the rapid warming of the waters suppresses nutrient mixing from subsurface layers”, which affects fish resources.

Rapid warming of the Indian Ocean may potentially turn this biologically productive region into an ecological desert, the study warns. ICAR-CMFRI’s vulnerability assessment of Indian marine fishes to climate change also shows that ocean temperature, current speed, direction and chlorophyll have an influence on the biology of fishes. According to this study, 30% of fish species are vulnerable to climate change along the south-west coast (Kerala, Karnataka and Goa). “Large magnitude of changes in ocean temperature is expected by 2055 affecting the highly vulnerable species. These would influence changes in distribution and species composition. Our study finds that fishes which lead complex lifecycle, high exploitation and low adaptive capacity are prone to climate change,” remarks P. U. Zacharia, Principal Investigator of this study.

Drop in sardine catch deepens trouble The very familiar common name “kudumbam pularthi” (family provider or family caretaker) of oil sardine among the fishing community, implies the economic significance of the species in Kerala. The decrease in the availability of oil sardine is hitting the economic stability of coastal communities. In a recent study, the ICAR-CMFRI points out that oil sardine resource in Kerala waters is severely affected by climate change related disruptions. After a record harvest of nearly 4 lakh (400,000) tonnes in 2012, catch of oil sardine is on a declining trend in Kerala every year. For the last five years, there has been a sharp decline of oil sardine along the coast of the state.

The fish registered a slight increase in 2017, but continued to slide during the following years. In 2019, the catch of sardine was just 44,320 tonnes and the yield again dropped to one-third the following year. E. M. Abdussamad, Principal Scientist at CMFRI who works on oil sardine says, “The unfavourable conditions in the ocean ecosystem following El Nino seriously influence the growth and reproduction of oil sardine resources in Kerala.” The fish landing data throws light

on the disquieting condition of Kerala's active fishermen, out of which 68% fall under BPL (Below Poverty Line) category, according to the latest census report. Normally, sardine harvest fetches good income to the traditional fishers during the monsoon period and a decline of this resource alone can trouble their economic safety. Substantiating this view, another CMFRI study reveal that following the reduction in oil sardine landings, the average net returns of Kerala's outboard fishermen using ring seine experienced a sharp decline from Rs. 12,000 per fishing trip to Rs. 2500 during the period from 2014 to 2018. The period saw a drop of the sardine catch from 2.5 lakh (250,000) tonnes to 77,000 tonnes.

Fishermen in this category lost 50% of fishing efforts due to lesser availability of sardine, according to the study. Social and economic catastrophe Charles George, an activist and the president of the Malsyathozhilali Aikya Vedi (Fishermen Unity Forum) calls the situation a "social and economic catastrophe," adding that the traditional fishing community in Kerala that is already marginalised socially and economically, is reeling under the impact of the climate-induced crisis.

"Income of fishermen in the state, who depend on fishing for their daily needs, has drastically reduced over the past three years. People are forced to flee from fishing and find some other livelihood options to support their families," he says. He further demands that a fish famine package be allowed to compensate their economic loss due to climate change and "fish drought". Responding to a query on awareness of climate change, Basheer T.K. a fisherman from Tanur in Kerala's Malappuram district says that climate change is a reality. "We are aware of this through our continuous interaction with the sea.

According to our indigenous traditional knowledge we can see the sea has changed a lot. We could feel warming of the waters upon our venture into the sea. There have been drastic changes in ocean current and we could sense changes in the fish habitats," he says. We used to venture into the sea by picking up certain signs from the sea, wind, clouds, etc. But climate change has disrupted this way of fishing too, he adds. Coastal lives in peril Storm surge, high waves, sea erosion and extreme weather conditions have put the lives of Kerala's coastal people in danger. Many coastal villages like Chellanam in Ernakulam district, Vizhinjam and Poonthura in Thiruvananthapuram district are increasingly becoming vulnerable to sea erosion which leaves many fisher families homeless more often. In May this year, hundreds of people residing in the coastal village of Chellanam were impacted when Cyclone Tauktae struck.

Houses collapsed and a vast area along the coast, which extends to about 15 km, was flooded following storm waves. According to Sebastian D.S., a fisherman residing at Chellanam, the sea is encroaching into their land each year. "This year the sea erosion is severe after the Cyclone Tauktae", he says. Livelihood issues apart, such incidents are posing threat to their life and coastal assets, putting their lives at peril. At the same time, marine experts are of the view that

storm surge will occur more frequently in the coming years. According to them, alarming winds by the cyclones help form storm surge in the waters which results in high waves, sea erosion and flooding in the coastal hamlet. Safety issues Another lurking issue faced by the fishers is the lack of proper 'social safety nets' such as insurance coverage in the sector.

A 2017 study carried out by Shinoj Parappurathu, Senior Scientist at CMFRI, Kochi shows that though accident risks of fishermen are covered, other risks such as vessel loss or damage and loss of other coastal assets due to natural disasters are covered only at a limited scale in India. "If suitable insurance schemes were available, the lives of the coastal people would not have become this pathetic. Their only livelihood option is at stake owing to climate change and related fallouts", says Parappurathu. He further states that the fishermen need to be equipped with on-board safety equipment to ensure disaster-proofing. Lack of advance warning system and means for two-way communication exacerbate the risk involved. Fishermen are pushed to bear the brunt of the natural calamity in the light that only 4.25% of fisher families have GPS and 0.67% use wireless communication.

"ICAR-CMFRI is working for assessing the vulnerability of the marine fisheries sector in the future," says A. Gopalakrishnan, Director of ICAR-CMFRI. "The institute has come up with a slew of adaptation strategies that include adoption of climate-friendly technologies or green practices, assurance of capacity building to make fishers climate-smart, development of knowledge base for climate change and marine fisheries and promotion of coastal aquaculture or cage fish farming. This is an outcome of a recent research project Impacts, Vulnerabilities and Adaptation Strategies for Marine Fisheries in India with the support of the Ministry of Environment, Forest and Climate Change. The predicted scenarios in different radiative changes will help the policy planners to go ahead with suitable plans to tide over the uncertainties," he remarks.

Kerala: Peoples panels to help convince fishers on housing scheme

<https://www.thehindu.com/news/national/kerala/peoples-panels-to-help-convince-fishers-on-housing-scheme/article35719966.ece>

"With sea erosion on the rise and fisher families increasingly reluctant to relocate to safer locations, the Fisheries Department has decided to form new people's committees, with the help of local bodies, under the 'Punargeham' project to speed up its implementation. In the first phase, the new committees will come up on in Beypore and Kadalundi coastal areas. Under the project, a family will be given ₹10 lakh in various stages to purchase three cents of land away from the coast and build a 600-sq ft house.

Though it was launched years ago, less than 25% of the eligible families have cooperated with its implementation. Most are not keen on accepting the package as such. The responsibility of the new committee will be to identify such families and prompt them to cooperate with the project. In Kozhikode district, 2,606 families have been identified as requiring speedy rehabilitation. Of this, less than 600 families have accepted the package. Many say the package does not meet their actual requirements. Most coastal families are big and they are not ready to shift to a smaller house. They say that a sum of ₹10 lakh will not suffice to purchase land and build a house in the existing market rate. They are calling for a major revision in the package.

The distance factor Another major reason for the opposition is the possible distance of the new properties from the coastal area. Most fisher families want a living space closer to the harbours and fish landing centres as it would reduce their travel time. Their affinity for the coastal area too is preventing many from accepting the offer. **Unused revenue land** The Fisheries Department officials have made it clear that fisher families living close to vulnerable coastal areas will have to shift on account of their safety. Efforts are also on to identify unused revenue land in the urban area for the purpose of their rehabilitation.

Kerala: Over 100 Chellanam families evince interest in rehabilitation project

<https://www.thehindu.com/todays-paper/tp-national/tp-kerala/over-100-chellanam-families-evince-interest-in-rehabilitation-project/article35618944.ece>

"More than 100 families in the coastal village of Chellanam, suffering from relentless sea erosion and flooding of homes, have expressed interest in being rehabilitated under the 'Punargeham' programme announced by the State government nearly two years ago. Fisheries Department sources said more than 200 families in Ernakulam district had expressed interest in being rehabilitated and relocated in the wake of severe sea incursion. Enquiries from Chellanam, one of the most affected areas, stood around 150, said sources. The Punargeham programme involves relocating families living within 50 metres of the high tide line (HTL) along Kerala coast.

The Fisheries Department has sent out a call to owners of land measuring 50 cents, not falling within the Coastal Regulation Zone, for the erection of housing complexes. Department sources said the land would be acquired by the government for constructing the housing complex that would accommodate the families requiring relocation. The owners of land have been asked to contact the Fisheries Department by August 13 with all documents. Department sources said that only those willing to be rehabilitated would be accommodated under the project and that no one would be forced to relocate. 'Bid to trick people' A spokesman for Chellanam Janakiya Vedhi, a forum demanding measures to protect the coastal village, described the Punargeham programme as an attempt to hoodwink the people.

While the government was offering massive incentives to landowners who might have to cede land for the semi-high speed rail corridor, coastal residents were being given very little, he said. Former finance minister Thomas Isaac had said in his budget speech in January 2021 that a total of 13,018 houses had been built in the coastal areas over the previous five years and that 7,500 houses would be built at an expense of Rs. 300 crore under the LIFE Mission in 2021-22. The aim of the Punargeham programme was to rehabilitate 2,500 coastal families at a cost of about Rs. 250 crore.

Kerala: Harbour dept to initiate study on shore protection

<https://timesofindia.indiatimes.com/city/kochi/harbour-dept-to-initiate-study-on-shore-protection/articleshow/84595231.cms>

"With the massive sea erosion irrespective of weather patterns eating up chunks of beach at Kovalam, Harbour engineering department is set to undertake a detailed study on shore protection works at Hawa beach in Kovalam. The department has invited tenders for data collection and investigation, which is crucial to identify the exact strategy for shore protection at Kovalam. The investigation work will be carried out at Rs 14.68 lakh. "The investigation will focus on factors which have led to erosion at Kovalam. We also need to do a comparative analysis of pattern of erosion over the years," said an official with the Harbour engineering department. As per the annual report on shoreline change of Vizhinjam coast between 2018 and 2019 submitted to Kerala coastal zone management authority (KCZMA), the beach on the northern part of the port between Kovalam-Panathura and Poonthura showed erosion trend for both post monsoon and fair weather periods.

In the pre-monsoon period of 2019 (April to May), significant erosion was noticed at the northern side of the port, Valiyathura to Thumba. Kovalam, Panathura and Cheriyaathura showed accretion. The beach volume changes for February 2015 and February 2019 showed accretion at Valliyaveli to Vettucaud, Mullur to Adimalathura and Poovar and erosion at Shangumugham to Beemapally, Punthura, Pannathura, Kovalam, Poovar to Edapadu beach, as per the report. The shoreline change reported for 2019-20, however, showed Kovalam was one of the areas where accretion was reported. Recently, owing to recurring instances of sea erosion, beach nourishment technique was proposed by transport minister Antony Raju.

Raju has demanded that the sand being mined as part of the construction of Vizhinjam harbour shall be deposited on the coast from Poonthura to Veli. The minister gave a letter to fisheries minister Saji Cherian citing the need for preparing a project report. According to experts, natural and manmade factors have contributed equally to depletion of sediment deposit on the beaches along the district coast. Cumulative erosion has been detrimental to the beaches. Earlier, the district used to have a regular weather pattern like monsoon from June to September and then

there would be a fair patch which will begin from October till April. This period used to witness a natural beach building process. Even if beaches got washed away during rain, part of it or even more would come back in the following months. Periodic cyclonic activity, storm conditions, extreme rainfall situations and some manmade reasons may have resulted in this, the officials said.

Kerala: Restore beaches, create bio-shields to check Chellanam’s coastal erosion: KUFOS

<https://www.thenewsminute.com/article/restore-beaches-create-bio-shields-check-chellanam-s-coastal-erosion-kufos-152423>

"Over a month after the Kerala government announced that the coastal village of Chellanam in Ernakulam district would be turned into a model fishing village, the Kerala University of Fisheries and Oceanographic Studies (KUFOS) has submitted its recommendations for the project. The interim report prepared by KUFOS was handed over to Minister of Fisheries Saji Cherian by KUFOS Chairman Riji John on Thursday, July 15. From restoring beaches to providing coastal protection by creating bio-shields with mangroves, KUFOS has made numerous recommendations to the government, including focusing on the agricultural and fisheries sector in the region. Chellanam is one of the coastal villages in Kerala that has witnessed severe coastal erosion. This has resulted in acute floods and the destruction of property since 2017. In May 2021, even amid the raging COVID-19 pandemic, hundreds of families in the panchayat bore the brunt of the floods. For many years now, the residents in the region have been demanding that a sea wall be constructed to prevent coastal erosion.

Though a project to construct a geo tube seawall was commenced in 2019 by the state government, it is yet to be completed. One of the prime recommendations given by KUFOS is to take measures for beach nourishment and “heaping of sand in the nearshore waters, like Holland model, for coastal protection”. The sand from dredging conducted by the Cochin Port Trust is proposed to be used for this purpose. Creating bio-shields with mangroves is the other key recommendation by the KUFOS team to address the issue of coastal erosion. The team also noted that restoring the canal and drainage system of Chellanam and its surrounding regions is of key importance. Unauthorised constructions and invasions should be evacuated, it said. A special officer with statutory powers should be appointed for this. KUFOS has recommended a multi-purpose rehabilitation centre to be constructed with a minimum total area of 9,000 square metre to rehabilitate people on ‘turbulent days’.

The facility can be used for purposes related to tourism during other times. The plan also focuses on the health care facilities in the village. “A full-fledged government hospital and recreation centre should also be formed,” it said. “People of Chellanam had been recognised as very good in farming and fishing in the past but unfortunately they lost the glory in recent times which

needs to be revamped to protect the livelihood of thousands of families. Since socio-economics is an integral part of the development index, a comprehensive socio-economic study has been proposed by the KUFOS team,” it added. The KUFOS team has also stressed the need to enhance the fisheries sector, by “improving the cold chains for attaining better price levels, value addition of fishery products and utilisation of waste materials”.

Kerala: 3,000 houses built under Punargeham project

<https://www.thehindu.com/news/cities/Kochi/3000-houses-built-under-punargeham-project/article35293185.ece>

"The second Pinarayi Vijayan-led Left Democratic Front (LDF) government has initiated a slew of measures to find solutions to problems faced by the fisher community in the State in five years, Fisheries Minister Saji Cherian has said. Mr. Cherian was distributing Mikavu-2020 awards, instituted by the Matsyafed, to students of the fisher community who scored high marks in the last year's SSLC and Plus Two examinations here on Monday. The Minister said the government was constructing 20,000 houses under the Punargeham project to rehabilitate fisher families living within 50 metres of the coastline in the State. "The construction of 3,000 houses under the project has been completed. The government is committed to providing housing to all fisher families," he said. The previous LDF government launched the Punargeham project to provide housing for all fisher families residing in areas vulnerable to sea erosion and tidal wave attack in nine coastal districts of the State.

Mr. Cherian said the government was implementing projects worth Rs.12,500 crore for coastal protection. "The completion of the coastal highway project will bring a new wave of development to the coastal areas. Hatcheries will be started in different parts of the State for production of 12 crore fish seeds in three years," he said. On improving basic infrastructure facilities in schools in coastal areas, he said the construction of buildings for 36 schools was progressing. The Chethi Fishing Harbour in Alappuzha would be realised soon, the Minister said. A total of 318 SSLC students and 104 Plus Two students were given awards comprising a cash prize of Rs.5,000 and a plaque. P.P. Chitharanjan, MLA, presided. Alappuzha district panchayat president K.G. Rajeswari, Aryad block panchayat president K.D. Maheendran, Mararikulam south gramapanchayat president P.P. Sangeetha, Matsyafed managing director Lawrence Harold, and others spoke.

Kerala: NGO asks govt. to initiate steps for coastal conservation

<https://www.thehindu.com/todays-paper/tp-national/tp-kerala/ngo-asks-govt-to-initiate-steps-for-coastal-conservation/article34942237.ece>

"Blaming unscientific coastal structures for the worsening coastal erosion in Thiruvananthapuram district, the NGO Coastal Watch, Thiruvananthapuram, has urged the State government to abandon the Vizhinjam international seaport project and the move to construct more harbours and 'hard structures' such as seawalls and groynes. A Coastal Watch report, 'Displaced coastal communities: Problems and solutions', has blamed the breakwater being constructed for the Vizhinjam port for the severe erosion in the coastal villages north of it. Only a small portion of the breakwater has been completed, but even this has triggered unprecedented wave action in the adjacent fisheries harbour and the formation of a sandbar at its mouth, imperilling the lives of fishermen, notes the study and seeks a constructive review of the Rs. 5,300-crore package announced in the State Budget for coastal conservation.

Vizhinjam port "The State should take steps to abandon the construction of the Vizhinjam port, which poses a major threat to the life and livelihood of the coastal community and to prevent further destruction," according to the study. 'Hard structures' such as groynes and breakwaters impede natural sediment transport and have proven to be short-term solutions to coastal protection. 'Soft structures' such as geotubes should be experimented with for coastal conservation, instead. Seawalls are harmful in the sense that they are weakened by the scouring of sand from its base. They also cause 'end erosion' in the coastal stretches on either side of it, the study noted. Calling for sustainable coastal protection measures, the Coastal Watch also advises against the use of concrete tetrapods that are now widely used. Further, the organisation has urged the government to scrap plans for new harbours.

Kerala: Fisher rehab strategy skewed, says report

<https://www.newindianexpress.com/cities/thiruvananthapuram/2021/jun/24/fisher-rehab-strategy-skewed-says-report-2320506.html>

"The constant human intervention as a part of various developmental activities have led to coastal degradation affecting the fisherfolk adversely. The consequent rehabilitation of the fishers, however, has only displaced them from the coastal belt, which hampers their livelihood. Such a rehabilitation strategy must change and it is high time it was carried out by taking into account the priorities of the community, said a study by Coastal Watch, an NGO that focuses on the coastal belt of Thiruvananthapuram. In its report, 'Displaced coastal communities: Problems and solutions', the organisation has said that the families that are being rehabilitated should be considered as an 'ecosystem community' and they should be given suitable financial compensation proportional to the loss they are facing. The rehabilitation of the fisher community should only be carried out in such a way that their livelihood isn't affected, the report reiterates. Coastal degradation The report submitted to Fisheries Minister Saji Cherian points out how using hard structures for coastal protection are, in turn, detrimental to the coastal belt and lead to further ecological damage.

The construction of sea walls, groynes and tetrapods are to be avoided at any cost as these lead to various issues such as end erosion, which is the erosion of sand from beaches at either end of the seawall. The government needs to resort to soft structures such as geotubes, the study says. The coastal protection measures and strategies should be formulated after understanding the unique beach system in an area. The NGO has asked the government to re-evaluate its project, 'Punargeham', to rehabilitate fishers living within 50 metres from the tidal area. Compensation not enough "As per the state government's rehabilitation programme for fisherfolk, `10 lakh is being given to those living in coastal regions facing threat. This is inadequate," says Dr Tito D'Cruz, a fisheries expert who prepared the study report. The study has observed that most of the fishers who live in the coastal regions facing threat often do not come forward as they fear getting displaced to makeshift shelters when they are living in houses that are worth Rs 20 to Rs 50 lakh. Suitable compensation needs to be provided to those getting displaced and it is the right of the community to live in dignity.

"The amount of `5,300 crore allocated in the budget for coastal protection through hard structures should be used for the rehabilitation of the fishers. When the fishers are rehabilitated, they need to be relocated near the coastal belt itself so that their livelihood isn't affected," he adds. The fishers should get to live with dignity. "Wherever there have been human interventions like harbours, there has been coastal erosion. Whenever the fishers are rehabilitated, their needs aren't considered and are forced to move into flats. They should be relocated in a dignified manner where their livelihood isn't affected and not in shacks or slum-like areas. Any rehabilitation measure should ensure complete collaboration from the community," says Kerala Paristhithi Aikya Vedi convener Sridhar Radhakrishnan.

He also reiterates the need to stop using hard structures. "A panel report led by marine scientist Dr Bijukumar and the community-based report by Dr Tito reiterate beach itself is the best coastal protection measure or rather sand. So we need to replenish the area with sand and this requires natural remedies and engineering. The thrust should be on bringing back our beaches," he adds. Study carried out by Coastal Watch asks govt to rehabilitate affected community near shores, rather than in faraway slum-like areas or flats, so that they are not denied livelihood. They must be given adequate compensation. Using hard structures to protect beaches/ shores will only aggravate erosion. Efforts must focus on replenishing sand on eroded beaches.

Kerala: Missing fishermen and sea erosion in coastal area

<https://www.thecitizen.in/index.php/en/NewsDetail/index/13/20528/Missing-Fishermen-and-Sea-Erosion-in-Coastal-Kerala>

"The sight on the beach at Poonthura, nine kilometres away from Thiruvananthapuram Central in Kerala, was ravishing. As they hurled their fishing nets, about 20 fishermen sang an elegy to the

ground beneath their feet, that was slowly being stolen by the sea. As they stood on the now 20-metre-wide beach, which was one km wide, 15 years back, they sang a folk song praising the sea mother and a chant to confound the fish they caught in the nets. “Three years ago, my son ventured into the sea like any other day, but he never came back,” sobbed Adalette Alcese, gazing at the Arabian sea.

On a breezy day, as the waves came crashing in, the 75-years-old recounted the tragedy that occurred three years ago, in December, that left their coastal village bereft of countless fishermen; many dead, many missing. In the coastal town, countless people have similar stories. There are almost 40 fishermen from this coastal village still missing after the Ockhi cyclone that struck the coast in December 2017. The ramifications Ockhi brought with it did not stop with the casualties. The cyclone has furthered sea erosion in the region. The sea has eaten into the once wide beach, the waves flood the houses when the monsoon arrives.

“At the year-end, people make offerings in church for the dead people. Some women do not offer prayers for their missing family members with the hope that they might be stranded on some islands and will return someday,” said Herman Eldaphonse, a youth who had lost his uncle to the disaster. Poonthura has been facing neglect for a long time and it is one among a multitude of such towns in Kerala embroiled in these issues. The same stories resonate in Poonthura, Chellanam, Ponnani, other fisherfolk towns in the state. The locals were given lofty promises by politicians from the two main parties, the Left Democratic Front (LDF) and the United Democratic Front (UDF), for mitigating sea erosion and incursion. But nothing has come to fruition, said the locals. Bosco, a fisherman lamented about living in a constant state of fear for the loss of life and livelihood. “There were measures like planting mangrove forests, building groynes, sea walls and geo-tubes to overcome sea erosion, but not even one of these were implemented.

As the sea comes nearer to our homes, we have nowhere to go,” he said. The locals had asked for a mini harbour in the town for the past decade to reduce the force of the sea waves crashing in but to no avail. “All these years, we have faced nothing but neglect. If the fishermen lose their livelihood and this town, will people notice our wails?” Vizhinjam harbour has made the perils of sea incursion more prominent. “The water displaced after the harbour was set up is inundating our region,” said Herman Eldaphonse. With time, the sea has inched closer to the shore and has eroded the sea wall. The government has asked the locals to move to a different place, promising a sum of Rs 10 lakhs under the fisheries department’s Punargeham scheme. Benjamin, living in a house in an area of three cents, with his yard, full of equipment for his boat, said, “I have worked so hard and now my three children are well educated, one of them will go to Canada for higher studies in a month or two.

All this was possible with my income from fishing. What will Rs10 lakhs fetch me? How will I earn if I'm to desert the sea?" he said. The houses nearest to the sea are under the 50-metre distance and they are flooded during high tide. "The beach was wide enough for 100 fishermen to sell together with their catch 15 years ago, now the width has dwindled," said Peraprais, a 55-year-old fisherman. The rehabilitation scheme for those affected by sea incursion is not welcomed by the locals. "The Rs 10 lakh provided by the government for rehabilitation is too less an amount. The sea is the life and livelihood for everyone here, who would leave it?" he said. Adequate measures like groynes for curbing the frequency and intensity of sea incursion and geo-tubes for combating erosion have not been built in Poonthura.

The demands were made since the coast was hit by cyclone Ockhi as the cyclone had aggravated sea incursion apart from the material damage and casualties. John Mathews, a fisherman and politician, who was a part of rescue operations during Kerala floods said, "Despite confronting neglect in the face of disasters, we don't turn our backs on people who need help." Mathews along with 7 others from the town travelled to Pathanamthitta district in the state after floods wreaked severe damage and casualties in the district. "We went to Pathanamthitta in 2018, but it was not with the hope that the favour will be returned. The collectorate had offered us Rs. 3000 for it, but most of us did not take it. The engines of our boats were damaged after that, but we did not seek any compensation," he said.

Despite all the maladies striking them, people in Poonthura made news, not as the neglected lot, but as the lot creating a ruckus. The town bears little resemblance to the "misbehaving lot" picture, portrayed by the media. When the pandemic struck, the first case of community outbreak was reported here. Lockdown followed, 25 military personnel were deployed and the movement of the locals was closely monitored. "The mayhem in this town was extensively covered by the media. The locals were seen coughing at the healthcare workers who came to collect samples and assembled with no regard to physical distancing," said Herman.

"However, our hardships due to sea incursion and sea erosion seldom make the news," he said. Herman recollected an incident when his friends were taken into custody by police and were harassed after they told them they were natives of Poonthura. "Life is hard for us, especially after the pandemic. We are seen as the carriers of the disease, even though we fare better than other places in the district," Herman said. As natural calamities and constant bouts of classism strike the town, everyone turns a deaf ear at the stigma and sufferings borne by the locals.

Kerala: Sea surge on Kerala coast: Why experts are calling for nature-based solutions

<https://www.downtoearth.org.in/news/climate-change/sea-surge-on-kerala-coast-why-experts-are-calling-for-nature-based-solutions-77431>

"Kerala's 590-kilometre-long coastline — one of the most densely populated in India and exposed to rogue waves — has for long been susceptible to large-scale sea erosion. The Pinarayi Vijayan-led Left Democratic Front (LDF) government has adopted traditional measures such as seawalls and breakwaters to brace against the perceptible impacts of climate change. But there are reasons to believe they may not save the state from the rising seas. A recent study has flagged the possibility of coastal areas in the state witnessing an increasing trend of sea surge in the coming years, mainly due to the rise in sea surface temperature. The scientists have advocated for nature-based solutions, in such a case, involving active participation of residents of the coastal communities. Seawalls are walls or embankments erected to prevent the sea encroaching on or eroding an area of land. The scientists involved in the study termed the present practice of erecting granite seawalls as counter-productive.

They emphasised that mineral sand mining — rampant in coastal areas of Kollam, Alappuzha, and Ernakulam districts — be confined to public sector with strict monitoring amid numerous complaints of illegal extraction of mineral sand by private agencies. They urged the state government to focus on protecting and promoting mudflats, coastal wetlands, mangroves and sandy beaches to prevent further escalation of sea erosion, which has gained alarming proportions even before the onset of south-west monsoon. The study flagged the need for participatory seashore management and a coastal erosion map.

The joint study was conducted by: - A Biju Kumar (Professor and head of department, Aquatic Biology and Fisheries, University of Kerala) - KV Thomas (retired chief scientist and head of National Centre for Earth Sciences, Thiruvananthapuram) - Ajayakumar Varma (retired chief scientist and head of Natural Resources and Environmental Management wing of National Centre for Earth Sciences, Thiruvananthapuram) - E Shaji (associate professor and head, Department of Geology, University of Kerala) - TV Sajeew (senior principal scientist, Kerala Forest Research Institute, Peechi) Restore mangrove forests The increasing calamities faced by the coastal community has elicited the need to restore coastal vegetation, including mangrove forestation, which could act as a bio-shield to the coastal belt, Sanjeev told Down to Earth.

K V Thomas said: "More than 0.6 million people of Kerala are directly dependent on the sea for their livelihood. There is a vast segment that indirectly relies on the sea by way of fisheries, tourism, transport of goods and people, aquaculture, energy, materials for biotechnology, minerals, and metals. The sea and the seashore are the most threatened areas during the Anthropocene. The current and predicted climate change impacts threaten the very existence of seashore communities." He added that the most impacted communities in Kerala — bordered by the Western Ghats on the east and the Lakshadweep Sea on the west — live at the ecotone of land and the sea. This calls for urgent intervention of the state government. Seashore erosion has

worsened coastal ecological balance and we need to evolve better solutions based on nature and in tune with the integrated development of Kerala, he added.

The coastline has also been subjected to environmental dynamics of the past several thousand years that eventually led to the formation of a wide range of geomorphological features such as backwaters, bays, lagoons, salt marshes, sand dunes and sandy shores, said Thomas. The study noted: “Among the 44 rivers originating from Kerala in the Western Ghats, 41 empty into the Lakshadweep sea. The average distance between the seas and the Western Ghats is 55-56 km. The backwaters, formed when the seawater pushes back the river as it reaches from the plains into shallow areas, is a unique characteristic of Kerala. The vagaries of the sea level and beach barrier formed perpendicular to the shore that led to the formation of the backwaters like Vembanad, India’s largest backwater ecosystem.

The nutrient richness of the shallow seas in Kerala is due to the nutrients and organic matter brought by the rivers through the estuaries...” The ocean currents — in tune with the winds that bring cold, nutrient-rich water, which upwells in the Kerala coast — make the seashore productive, thereby ensuring good fish biomass. Residents thrive by extracting resources from nature around them and are tied to the ecosystems they live in. Any damage to the ecosystem will be at the cost of their livelihood, the study warned. The seashore degradation started in Kerala in the 1950s, primarily due to unscientific constructions in the seashore, said Biju Kumar.

“The constructions comprising mostly harbour breakwaters ignored the ecotone landscape’s dynamic nature. The beach nourishment systems adopted the world over during the construction of harbours was not implemented.” Hard armouring structures such as the seawall have been presented as the only solution to degradation; but they have only aggravated the issue. The degradation of rivers — that brought sand and sediments to maintain the seashore — also worsened the situation. “The life of the lowland people became a rope walk between the sea and the land, and many lost their homes and livelihood, said Kumar. He warned that the tourism industry has shifted to inland backwaters and the Western Ghats from the shoreless seashore.

The increasing number of hurricanes in the Arabian sea and the rising sea level may aggravate the situation. The seashore is maintained by the continuous process of accretion and erosion, according to the researchers. According to them: The ‘room for seashore’ must be taken up as an immediate slogan, they said. The decision to leave 50 meters distance from the shoreline for the sea to ensure the stability of beaches must be strictly enforced. The study suggested preparing a list of hotspots based on available studies on seashore erosion and field verification reports reported by local self-governments. Based on the intensity of erosion, the seashore should be classified as: - Severely eroded seashore (where the erosion is intense and no management method is possible) - Highly eroded seashore (where erosion is intense but management is

possible) - Moderately eroded seashore - Slightly eroded seashore - Seashore prone to erosion
- Erosion-free seashore.

The way ahead According to Sajeev, the current breakwater and seawall constructions have worsened the sea erosion scenario. Better structural features are needed for seashore maintenance after careful study of the current status. Beach nourishment methods and sand bypassing should be considered wherever possible, after site-specific studies, considering coastal geomorphology and dynamics. “India is envisaging an integrated coastal zone management project. Local-level participatory coastal zone management projects should be implemented as part of this. The district-level management committees should lead these projects,” observed E Shaji.

Among other suggestions were: - A coordination committee headed by the chief minister to complete the projects in a time-bound manner. - Institutions like KILA (Kerala Institute of Local Administration) should conduct training for local self-government representatives using the expertise available at NCESS, KFRI, CWRDM, Universities, and Geology, Marine Sciences, Ecology, etc. - The green army, civil society organizations, and citizen scientists should also be used to prepare local-specific coastal zone management plans. - A coastal zone monitoring network should link civil society groups, environmental activists and link all local self-government in the coastal zone to monitor violations of the coastal zone management Act. - Ecosystem services of the coastal zone should be assessed and sustainable management plans should be developed and implemented through integrative research. - The researchers said mining of the strategically important mineral sand should be regulated strictly and should be done only by the public sector.

Mudflats, coastal wetlands, mangroves, and sandy beaches should be declared as Ecologically Sensitive Zone 1. Dredging will be necessary at ports. It has to be made sure that the mud and soil excavated are not used to reclamation coastal wetlands. Sand mining should be prohibited at the hotspots. There should be a reliable enforcement mechanism for this. Shores, where the Olive Ridley turtles lay eggs, should be protected. “Studies based on predictive models should be started to develop better coastal zone management.

Nature-based solutions should be used to prepare green belts at the coastal buffer zone, and the activities should be linked to Rural Employment Guarantee programs and programs schemes,” said Thomas. Meanwhile, a webinar organized by the Central Marine Fisheries Research Institute (CMFRI) in Kochi also suggested similar steps. The webinar highlighted that the entire Kerala coast recently witnessed a ‘storm surge’ during the two cyclones — Tauktae and Yaas. “Kerala’s coastal region could be protected from the wrath of the sea to a great extent through the restoration of mangroves and other biodiversity in the region,” said CMFRI Director A Gopalakrishnan when contacted by Down to Earth.

Kerala: Budget gives a boost to coastal protection initiatives

<https://www.thehindu.com/news/national/kerala/budget-gives-a-boost-to-coastal-protection-initiatives/article34739536.ece>

"Efforts to protect the nearly 600-km Kerala coast and people living on the coast may witness a sea change, with the revised Budget for 2021-22 promising to tap into local knowledge, leverage green solutions, and adopt the latest engineering techniques for the purpose even as the Kerala University of Fisheries and Ocean Studies (Kufos) is set to finalise plans to establish a major mangrove research and propagation station. Coastal area conservation measures will be formulated to integrate new technologies and green solutions like mangrove vegetation, said Minister for Finance K.N. Balagopal in the Assembly on Friday. On utilising the knowledge of the local people and addressing their concerns, the Minister said: "Extensive stakeholder consultations will be conducted with local participation before finalising designs. For this, the views of community organisations working in coastal areas will be sought with the assistance of the Local Self-Government and Fisheries departments."

Going by the experience of the local people, green cover along the coast can help prevent sea erosion in places like Chellanam. K.K. Raghuraj of Kufos, an expert in mangroves, had said at a recent consultative meeting on Chellanam that the segment of the coast between Fort Kochi and Chellanam lacked substantial beach formation. Beaches are needed to grow mangroves and provide bioshield protection to the coast. Kufos Vice Chancellor Riji K. John said the proposal for establishing an international centre of excellence in mangrove research and development was being finalised. Once operational, the Rs.100-crore station will combine the vast resources available with Kufos for propagation of mangroves by providing knowledge backup as well as seeds and tissue-cultured plants.

The facility is slated to come up on 50 acres at the fisheries station of the varsity on Puthuvype island. A meeting of environmental and fisheries scientists in Kochi in May 2019 had proposed the setting up of such a facility. The task was then taken up by A. Ramachandran, then Vice Chancellor. The final proposal will be submitted soon to the Fisheries Minister, Dr. John said. He added that mangrove growth along the coast would not only help protect it but also, in places like Kochi, help lower temperature and increase oxygen availability in the atmosphere. Mangroves are also natural homes to dozens of local species of fish and crabs as well as migratory birds. Kerala has 15 mangrove plant varieties as well as 75 associated plants. Of them, 12 varieties and 66 associated plants are available at the Kufos fisheries station. The proposed research station will be a germplasm bank for the rich variety of mangrove vegetation in the State.

Kerala: Kozhikode fishers seek better financial support during trawling ban period

<https://www.thehindu.com/news/cities/kozhikode/kozhikode-fishers-seek-better-financial-support-during-trawling-ban-period/article34719540.ece>

"With just a few days left for the annual trawling ban to begin, fishermen's organisations in Kozhikode district are eagerly waiting for a better relief package from the State government amid the pandemic crisis. They are demanding a direct financial assistance scheme either in the form of one-time allowance or short-term credit by reworking the existing relief system that focuses only on the distribution of rice. At a recent district-level review meeting, they had taken up the demand with the district administration and the Fisheries Department authorities, stating that the supply of rice alone would not help underprivileged families which were struggling to cope with the "new normal" after the outbreak of COVID-19.

Many were in need of better medical support and financial assistance to facilitate the education of their children, they had said. "Only a nominal amount of ₹1,500 from the department's saving-cum-relief scheme reaches the fishermen's families as aid during the lean period. The sum will not be sufficient to buy even stationery articles for a school-going child," said Abdul Razak, a member of the Matsya Thozhilali Federation. He said the relief package should take into consideration the challenges of the pandemic situation and the steep fall in fishermen's daily income.

The majority of those campaigning for the revised compensation package are fishermen who recently faced huge losses following sea erosion along the Vadakara and Kozhikode coast. With the loss estimate preparation getting delayed in various villages, many of them have lost hope about being able to claim eligible government aid to rebuild their damaged houses. The stance of the Fisheries Department that it will not deal with any complaints related to the damage of fishermen's houses in natural calamities has added to the woes of many local self-governments which are running short of funds to extend interim aid for the struggling groups. Only fishermen whose boats or other fishing equipment were destroyed in natural calamities will be able to claim assistance from the department.

"Usually, the relief aid during the 52-day trawling ban period reaches only the members of the government's fishermen's welfare fund board. This discrimination should end and allied workers should also be considered for the aid," said Karichal Preman, vice president of All Kerala Fishing Boat Operators' Association. Any aid that was less than ₹10,000 for a family would be worthless during the pandemic period, he added.

Kerala: Government to implement 'model fishing village' project

<https://timesofindia.indiatimes.com/city/kochi/govt-to-implement-model-fishing-village-project/articleshow/83072489.cms>

"The state government has decided to implement 'model fishing village' project of the fisheries department for the first time in Chellanam coastal panchayat. The project envisages the construction of houses, provision of drinking water, sanitation, provision for health facilities, setting up of fish marketing centres, construction of fisheries schools, etc. Also, projects worth Rs 18 crore will be implemented in Chellanam on a war footing to prevent sea erosion and flooding. This includes the Rs 16 crore allotted by the previous LDF government under the 100-day projects and also the Rs 2 crore emergency fund allotted two days ago. The ongoing geotube project worth Rs 8 crore will be completed in a time-bound manner.

The decision was taken at a high-level meeting held in Ernakulam Guest House on Thursday that was led by industries minister P Rajeev and fisheries minister Saji Cherian to evaluate the loss caused by sea erosion in Chellanam and decide the actions to be taken to protect the coast. The meeting was attended by Hibi Eden, MP, K J Maxi, MLA, district collector S Suhas and several other officials. Model fishing village project aims at the comprehensive development of coastal villages through the coordinated efforts of various departments. The ministers said that the project will resolve the problems in Chellanam. Kerala State Coastal Area Development Corporation Ltd (KSCADC) managing director Sheik Pareeth has been entrusted with the responsibility of drafting a study report of the project.

A committee led by minister Rajeev will do the overall monitoring of the project implementation and a technical committee headed by Pareeth will monitor the technical aspects of the project. Earlier on Thursday, the two ministers and others, who attended the meeting, have visited Chellanam and interacted with the residents. They also visited the places which were worst affected by the sea erosion last week. Fisheries minister also said that the coastal development projects under the Rs 5,000-crore package announced by the state government will be completed in five years. Tetrapod barrier will be constructed using the Rs 16 crore allotted for seawall construction and the tendering will be completed by June 25. Cleaning and desilting of Vijayan Canal and Upputhodu will be completed soon.

Kerala: Infrastructure Projects amplified Cyclone Tauktae's impact

<https://science.thewire.in/environment/in-kerala-infrastructure-projects-amplified-cyclone-tauktaes-impact/>

"An eerie silence is still prevailing over Chellanam, a coastal village panchayat located between Ernakulam and Alappuzha in Kerala, where cyclone Tauktae barrelled dangerously into the tiny houses of COVID-battered fish workers a few days ago. Over 500 houses of the village were inundated in the worst-ever sea attack since Cyclone Ockhi of 2017. The primary health centre at Kandakkadavu in the middle of the panchayat was seen fully submerged in waist-high water due to Tauktae. With the help of fire and rescue workers, health department officials were

able to retrieve medicines and equipment stored there, especially those required for COVID-19 treatment. According to panchayat president K.D. Prasad, Chellanam witnessed a spike in COVID-19 cases when the cyclone Tauktae wreaked havoc in all 21 wards.

There were 601 active COVID-19 cases in the panchayat area, and even the facilities where the patients got accommodated were destroyed in surging waves. He said high waves continue to hit the coastal settlements despite cyclone moving away. A local resident Louis Abraham said that seawater intrusion into houses is continuing and most houses are under knee-deep water. “As COVID-related lockdown was strict in our area, rescue and rehabilitation work faced enormous hurdles. We had even to organise online protests to attract relief works and government intervention,” said Louis. The situation is almost similar in the Thiruvananthapuram district’s fish worker settlements such as Beemapalli, Vizhinjam, Anchuthengu, Muthalapozhi, Paruthiyur, and Kochuthoppu.

The road linking Thiruvananthapuram city with the domestic terminal of the local airport via the famous Shanghumukham beach was washed off. Though the cyclone killed only two people in Kerala, its intensity across the coastal region was heavy. The worst affected districts include Ernakulam, Kollam, Alappuzha, Kozhikode and Kasargod. “The nature and severity of cyclone Tauktae indicate that the Arabian Sea will witness more such severe storms in the coming days, especially during late monsoon season, due to climate change. Until 2014 when Cyclone Nilofar occurred, there were no cyclones in the entire Arabian seacoasts. Global warming, climate variability, and weather changes are increasing the risk.

As far as the Kerala coast is concerned, many human interventions make the cyclones severe. They include land reclamation, port developments, shrimp farming, river diversion, dredging, and sand mining,” points out S. Abhilash, a scientist with the Department of Atmospheric Sciences at Cochin University of Science and Technology (CUSAT). “Places like Chellanam have witnessed severe destruction because of the human activities which turned supporting factors for the natural forces. The cyclones have intensified the ongoing coastal erosion,” he observed. Abhilash stated that the cyclone frequency over the Bay of Bengal is on the decrease in the recent years, but they are increasing over the Arabian Sea around the onset phase of the monsoon.

He noted that cyclone Tauktae is the fourth cyclone in recent years to have developed in the Arabian Sea and in the pre-monsoon period of April to June. All these cyclones since 2018 have been categorised as either ‘severe cyclone’ or above. After Cyclone Mekanu, which struck Oman in 2018, the Arabian sea witnessed Cyclone Vayu in 2019, and it struck Gujarat. Cyclone Nisarga followed it in 2020 and struck Maharashtra. “All tropical cyclones require large amounts of energy to remain alive. Normally, this energy is obtained from the warm water and humid air over the tropical seas.

At present, seawater up to depths of 50 metres is hot in the Arabian Sea, and so the possibilities of more cyclones are in the cards,” he observed. While Thushar Nirmal Saradhi, a social activist who works with the climate change victims of Chellanam, emphasised that “for people outside Chellanam, sea erosion may be a new phenomenon propelled by the climate change-induced cyclones but for us, it has been happening for over six decades.” “It all began when a shipping route was dredged to Cochin shipyard through the sea close to our villages. The construction of the coastal highway connecting Kochi with Aapuzha has further intensified sea erosion. Now, the cyclones have turned into a regular phenomenon posing a severe threat to our people. In the previous years, the authorities have promised to construct sea walls using geosynthetic tubes. Still, synthetic geo constructions that began last year were washed away in the cyclone,” said Saradhi.

Impact of infrastructure projects The unscientific and rapid development of big infrastructural projects is being pointed out as one of the reasons for the intense impact of the cyclone. Max Martin, a researcher working with coastal communities in Southern Kerala, said: “The impact of the cyclone (Tauktae) was heavy on the northern parts of all major constructions in the sea in Kerala, mainly ports and breakwaters. Rampant coastal zone violations and destruction of adjoining wetlands have contributed immensely to the destruction. The coastal region of Kerala is now under high risk, and it is high time that ways are found to minimise the impacts of climate change.” A similar concern is being highlighted by those working with fishermen. “Every year, the sea is drawing closer to us. The wide beaches are getting smaller.

Cyclone Tauktae is not an isolated phenomenon. It is an extension of the disasters happening in the coastal region for a long time. The human factors related to sea erosion are often ignored conveniently,” said Joseph Jude, a rights activist working with Kerala fish workers. Albert Thomas, a fish worker of Arthunkal in Alappuzha observed that climate change has been affecting the character of the Arabian sea for a long time. “The sea started turning turbulent ever since the Tsunami of 2004. Ockhi further worsened the situation. Now we rarely see the sea calm. The height and force of the waves have increased in recent years. They are times, not just during the monsoon months of June to September but all through the year.

It’s difficult to predict how the sea will behave,” said Thomas. Fish workers also alleged that there is an alarming depletion in fish wealth in the Arabian Sea in the last three years. They state that because of the loss of beaches, they find it difficult to dry their nets and small fish under the sun. In Vizhinjam-Shanghumukham regions, fish workers accuse the Vizhinjam International Seaport, which is under construction, of inciting natural disasters. A news report said that Cyclone Tauktae severely damaged the breakwater of the under-construction seaport, and washed away vast amounts of stones and concrete pillars.

“The seaport has played a significant role in destroying houses in Valiyathura, Beemapalli, and Shanghumukham areas. Because of the constructions in the sea, the waves have become rougher. The breakwater has prompted the waves to hit the shores harder,” observes Joseph Vijayan, an expert on coastal communities in Thiruvananthapuram. Do seawalls work? In 2017, the international journal *Natural Hazards* published a paper ‘Impact of sea-level rise and coastal slope on shoreline change along the Indian coast,’ which said that the highest level of coastal erosion was occurring in West Bengal and identified Kerala as a close second. Other studies have also observed that the western coast of India was primarily stable except for Kerala’s coastline of 590 km. They estimate that about 63 percent of the state’s coastal region faces sea erosion. Earlier this month, the Kerala Coastal Zone Management Authority (KCZMA) distributed a draft coastal zone management plan among concerned local bodies in all coastal districts for discussion.

In Kerala, nine districts are affected by sea erosion. During each incident of sea turbulence, coastal communities seek solutions, and the government soon starts the construction of seawalls. As per data available from the KCZMA, seawalls have been erected in almost 60% of the Kerala coast, spread in 310 km. “Seawalls are not a solution to sea erosion. Fortifications of this kind are increasing the flow of the currents around the shore. That results in the intensification of waves to the north of the breakwater and subsequent further erosion of that shoreline. But the local people insist that fortifications are the only way they can save their homes,” observed Abhilash of the CUSAT. Joyce Mary, a 52-year-old resident of Kannamaly, said seawalls were a big failure in preventing the raging sea from entering households. Even huge stones and concrete pillars used for the walls have been washed away. Losing home, Joyce moved to a relative’s house where 15 people of three families now live.

According to Joseph Vijayan, seawalls and breakwaters are interruptions of sediments across the coast preventing the coastal areas from getting replenished. While Max Martin said: “We need to plant trees and plants in the coastal areas that protect our beaches. Only natural remedies can solve the issue, not human-made constructions. Coastal vegetation, as well as mangrove plantations, can hold the sand in the shore.” Activists want the state government to formulate a policy in this regard. “A state like Kerala with its long shoreline needed to have a clear policy outlook to protect coastal areas,” said Charles George, a leader of the Kerala fish workers forum.

Kerala: How infrastructure projects intensified cyclone Tauktae’s impacts

<https://www.moneycontrol.com/news/environment/how-infrastructure-projects-intensified-cyclone-tauktaes-impacts-in-kerala-6933501.html>

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the tiny houses of covid- battered fish workers a few days ago. Over 500 houses of the village were inundated in the worst-ever sea attack since Cyclone Ockhi of 2017. The primary health centre at Kandakkadavu in the middle of the panchayat was seen fully submerged in waist-high water due to Tauktae.

With the help of fire and rescue workers, health department officials were able to retrieve medicines and equipment stored there, especially those required for Covid-19 treatment. According to panchayat president K.D. Prasad, Chellanam witnessed a spike in Covid-19 cases when the cyclone Tauktae wreaked havoc in all 21 wards. There were 601 active Covid cases in the panchayat area, and even the facilities where the patients got accommodated were destroyed in surging waves. He said high waves continue to hit the coastal settlements despite cyclone moving away. A local resident Louis Abraham said that seawater intrusion into houses is continuing and most houses are under knee-deep water.

“As covid related lockdown was strict in our area, rescue and rehabilitation work faced enormous hurdles. We had even to organise online protests to attract relief works and government intervention,” said Louis. The situation is almost similar in the Thiruvananthapuram district’s fish worker settlements such as Beemapalli, Vizhinjam, Anchuthengu, Muthalapozhi, Paruthiyur, and Kochuthoppu. The road linking Thiruvananthapuram city with the domestic terminal of the local airport via the famous Shanghumukham beach was washed off. Though the cyclone killed only two people in Kerala, its intensity across the coastal region was heavy. The worst affected districts include Ernakulam, Kollam, Alappuzha, Kozhikode, and Kasargod.

“The nature and severity of cyclone Tauktae indicate that the Arabian Sea will witness more such severe storms in the coming days, especially during late monsoon season, due to climate change. Until 2014 when Cyclone Nilofar occurred, there were no cyclones in the entire Arabian seacoasts. Global warming, climate variability, and weather changes are increasing the risk. As far as the Kerala coast is concerned, many human interventions make the cyclones severe. They include land reclamation, port developments, shrimp farming, river diversion, dredging, and sand mining,” points out S. Abhilash, a scientist with the Department of Atmospheric Sciences at Cochin University of Science and Technology (CUSAT). “Places like Chellanam have witnessed severe destruction because of the human activities which turned supporting factors for the natural forces.

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Now, the cyclones have turned into a regular phenomenon posing a severe threat to our people. In the previous years, the authorities have promised to construct sea walls using geosynthetic tubes. Still, synthetic geo constructions that began last year were washed away in the cyclone,” said Saradhi. Impact of infrastructure projects on Kerala’s coastline The unscientific and rapid development of big infrastructural projects is being pointed out as one of the reasons for the intense impact of the cyclone. Max Martin, a researcher working with coastal communities in Southern Kerala, said: “The impact of the cyclone (Tauktae) was heavy on the northern parts of all major constructions in the sea in Kerala, mainly ports and breakwaters.

Rampant coastal zone violations and destruction of adjoining wetlands have contributed immensely to the destruction. The coastal region of Kerala is now under high risk, and it is high time that ways are found to minimise the impacts of climate change.” A similar concern is being highlighted by those working with fishermen. “Every year, the sea is drawing closer to us. The wide beaches are getting smaller. Cyclone Tauktae is not an isolated phenomenon. It is an extension of the disasters happening in the coastal region for a long time. The human factors related to sea erosion are often ignored conveniently,” said Joseph Jude, a rights activist working with Kerala fish workers.

Albert Thomas, a fish worker of Arthunkal in Alappuzha observed that climate change has been affecting the character of the Arabian sea for a long time. “The sea started turning turbulent ever since the Tsunami of 2004. Ockhi further worsened the situation. Now we rarely see the sea calm. The height and force of the waves have increased in recent years. They are times, not just during the monsoon months of June to September but all through the year. It’s difficult to predict how the sea will behave,” said Thomas. Fish workers also alleged that there is an alarming depletion in fish wealth in the Arabian Sea in the last three years.

They state that because of the loss of beaches, they find it difficult to dry their nets and small fish under the sun. In Vizhinjam-Shanghumukham regions, fish workers accuse the Vizhinjam International Seaport, which is under construction, of inciting natural disasters. A news report said that Cyclone Tauktae severely damaged the breakwater of the under-construction seaport severely, and vast amounts of stones and concrete pillars were washed away. “The seaport has played a significant role in destroying houses in Valiyathura, Beemapalli, and Shanghumukham areas. Because of the constructions in the sea, the waves have become rougher.

The breakwater has prompted the waves to hit the shores harder,” observes Joseph Vijayan, an expert on coastal communities in Thiruvananthapuram. Are seawalls successful in tackling sea erosion? In 2017, the international journal *Natural Hazards* published a paper ‘Impact of sea-level rise and coastal slope on shoreline change along the Indian coast,’ which said that the highest level of coastal erosion was occurring in West Bengal and identified Kerala as a close second. Other studies have also observed that the western coast of India was primarily stable except for Kerala’s coastline of 590 kilometres. They estimate that about 63 percent of the state’s coastal region faces sea erosion. Earlier this month, the Kerala Coastal Zone Management Authority (KCZMA) distributed a draft coastal zone management plan among concerned local bodies in all coastal districts for discussion.

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Kerala: Govt allots Rs.2cr for Chellanam

<https://timesofindia.indiatimes.com/city/kochi/govt-allots-rs-2cr-for-chellanam/articleshow/82920370.cms>

"The state government decided to allot Rs 2 crore for implementing emergency coastal protection measures in the Chellanam coast before monsoon. Also, the ongoing projects along the coast will be completed in a time-bound manner. The decision was taken in the high-level meeting held in Thiruvananthapuram to discuss the difficulties faced by the residents of Chellanam. Vijayan Canal and Uppu Thodu will be desilted within a week to ensure free flow of water in case of sea flooding. Project worth Rs 45 lakh to repair seawalls and geobags will be completed by the first week of June. The Irrigation Design & Research Board (IDRB) has been entrusted with the responsibility to complete the tendering of the projects worth Rs16 crore that was earlier announced by the government.

The meeting was attended by industries minister P Rajeev, fisheries minister Saji Cherian, irrigation minister Roshy Augustine, transport minister Antony Raju and MLAs K J Maxi (Kochi) and P P Chitharanjan (Alappuzha). Additional chief secretary T K Jose, Kerala State Coastal Area Development Corporation Ltd (KSCADC) MD Sheik Pareeth along with senior officials of various departments attended the meeting. The meeting decided that a comprehensive solution will be implemented in Chellanam to stop sea erosion and to ensure basic infrastructure development in the coast. KSCADC has also been directed to submit a detailed project report on Model Village Project within one month. The minister will convene a meeting in Ernakulam on Thursday with the participation of elected representatives from various places.

Kerala: A tale of woe and neglect along Thiruvananthapuram coast

<https://www.nationalheraldindia.com/india/a-tale-of-woe-and-neglect-along-thiruvananthapuram-coast>

"All along the Thiruvananthapuram coast from Shankhumukham, Valiyathura, Cheriyaathura, Thoppu to Poonthura, all you will hear are tales of woe. At Beemapally, near Poonthura, it is particularly worse. As soon as one turns into Muslim-majority Beemapally, broken homes, overflowing sewage, half-built groynes and a thin sandy beach littered with garbage is what can be seen. Youngsters in the area were cleaning up the beach because they were going to hold prayers to be able to catch fish. The local fishermen have not seen a good haul for more than eight months. This has them worried. The fishermen in the area use the traditional gill nets (kambavala) and seine boats (thattamadi), but they have not been able to get a good haul.

It takes at least 40 fishermen to work on the kambavala, but with hardly any fish being captured and each venture into the sea costs Rs 15,000. "When we come back empty handed, the loss

accrues. The problem is that fishermen from the nearby villages have been helped by various co-operative societies and they go out to fish in the night. When they do that, they capture all the fish by early morning, leaving nothing for us,” lamented Mohd Hussain, the owner of a boat. He was talking about fishermen from neighbouring Christian villages going out in the night on motorised boats for fishing carrying heavy lights. The continued erosion of the shore has them worried too.

“The coast has begun receding at a quicker pace once the construction at the Vizhinam port began. The sea had eaten into the entire shore till a few months ago. This pavement did not exist either. This pavement and the streetlight were rebuilt only recently by the MLA VS Sivakumar and MP Shashi Tharoor,” said Aboobacker, a fisherman. He added that these constructions were only temporary solutions as the sea was eating into their land. “We have had to rebuild our house multiple times. If you walk along this coast, you will see crumbled structures. These used to be homes of our brothers, but the sea destroyed it,” asserted Aboobacker.

The beach was where they used to dry the kambavala, but now there is hardly any space to dry the nets. “The children here used to play football, that’s how spacious the beach was. Now, the beach has become a narrow strip,” said Imtiaz. The wounds of Cyclone Ockhi are yet to heal here. “The government had promised several things. No one in Beemapally got any compensation for the destroyed homes, for the nets and the boats. No one from the LDF government can ever come here and make such a claim,” added Hussain. This time too the votes are likely to go in favour of UDF’s Sivakumar, whom they insist has helped them more than the government.

“The politicians come here during the election and then they mostly forget about us. We continue to remain poor. During Covid-19, we got kits, but that was not enough to sustain the entire family. The government forbade us from going into the sea last year. How can we not go to the sea?” said Aboobacker. According to AJ Vijayan, an environmentalist and a former member of Coastal Watch, Beemapally is usually a forgotten constituency. “As you travel along the coast, you will see the number of groynes are fewer in Beemapally, rehabilitation work is much less. It is because the community doesn’t hold much political clout.

Also, Beemapally fishermen continue to use the traditional method of fishing and it is tied to their culture, so they are unlikely to move away from it,” explained Vijayan. He is also the founder-member of the National Fish Workers Forum. Groynes are only a temporary solution, underscored Vijayan, and that too has not been done properly in Beemapally. “Here co-operative societies are inactive and in other places the church is active and that ensures an ear from politicians,” added Vijayan. In Poonthura too, most houses were destroyed and the shells of those houses remain along the coast. “During Ockhi the sea destroyed our homes.

At that time only Sivakumar came to our help. He came here when we could not go fishing during Covid-19 lockdown. CPI(M)'s Anthony Raju appears only during election season. We never see him after that. All we want is a harbour in Poonthura, but fisheries minister Mercykutty Amma says it would never happen," said Susheela Jeyaras, a resident of Poonthura. At Shankhumukham, the shore erosion has reached a critical stage where the entire stretch of the beach and the adjacent road were swept away last year.

"This worsened after they built the Vizhinjam breakwater. Now, they are building a wall along the coast. How will we access the shore? No politician ever thinks about our future," said Mary, who was selling fish on the broken portion of the road. Breakwaters are barriers constructed in the middle of the sea to control the waves and ensure calm waters. Of the 3.5 km-long breakwater required for the port, construction of around 650 metre structure has been completed. Vijayan asserted that the government was building the sea wall because they are afraid the sea would encroach the runaway.

"All this erosion began after 1970 when they began the fishing harbour construction in Poonthura. Then erosion began on the northern side and accretion started on the southern side. When the erosion began in 1970, more than 500 houses were lost. Then people were living on the Western side. As the sea encroached, they moved to the Eastern side, where they continue to live. Only the older generation knows about this. I grew up there, so I remember," added Vijayan. He added that the "sea is attacking us, but this is a man-made issue".

Along the West Coast, the sand and sediment move towards north along the West Coast and south towards Kanyakumari. When there is a construction along the coast, it blocks the movement of the sand. Initially, the erosion was only in Ponthura and to stop it sea walls were constructed. "The sea wall in Poonthura has been rebuilt seven times. If you dig, you will see piles of stones. They have all crumbled when the sea takes over. The current sea wall in Poonthura is hardly two years old. There is heavy erosion during the south west monsoon months of May-September, so there won't be any beach in most places along the coast. There is minor erosion during the north east monsoon between December and January, hence the sand movement along the coast is slow, so a thin beach strip is visible," explained Vijayan. The MS Swaminathan CRZ report of 2005 had highlighted that coastal erosion was a major concern along Kerala's coast.

"The agency considering hard measures, particularly groynes or breakwaters should be made responsible for protecting the shoreline at least 500 metre on either side of the shoreline from erosion. In case of breakwaters for harbours, the stretch of the shoreline to be considered for protection should be at least one km on either side of the structure," the report had mentioned. But courts and governments do not pay heed to any complaints of sand erosion. "We live at the mercy of the sea which can turn ferocious any time. The politicians and governments change, but

no one thinks about our future,” bemoaned K Patrik, a fisherman from Valiyathura.

Kerala: Sea of troubles for fisher families on the shore

<https://www.newindianexpress.com/states/kerala/2021/mar/27/sea-of-troubles-for-fisher-families-on-the-shore-2282158.html>

"Travelling through the coastal stretch straddling Ernakulam and Alappuzha districts, one can only marvel at the panoramic view of the ocean and the hubbub of the fisher families living on the shore. But just as the calm and inviting ocean is a deceptive camouflage for its ferociousness, the fishing community remains a simmering pot of discontent beneath their calm demeanour as they stare at a slew of problems, ranging from sea erosion and depleting marine resources to the potential intrusion by multinational companies threatening their already fragile livelihood.

The TNIE team that visited the coastal village of Chellanam met a community that was inundated in a deluge of woes. Elections don't excite them because they have met politicians of myriad hues. A long list of failed promises has made them sceptical of politics. "Every election, politicians approach us with a slew of empty promises like the construction of the sea wall, tube wall and groynes to check coastal erosion. Nothing has materialised. Whenever the sea turns rough, the village gets flooded in waist-deep water and we are forced to shift to relief camps like refugees. How can we sleep peacefully when the sea turns rough and the 20-year-old sea wall has broken?" asked Treesa Kuttappasery, a villager.

Drinking water scarcity is another problem faced by Chellanam. "Giving food kits during Covid crisis had helped assuage our hunger. But who will guard us against the raging sea?" asked G V Biju. Besides, the lockdown has left the coastal populace jobless. "We used to go fishing in our traditional boats. However, the depletion of marine wealth and increase in the number of mechanised boats have resulted in a low catch. We are struggling to make both ends meet," he added. Not only fishermen, but the boat owners, fish vendors and middlemen in the harbour are also facing the heat of depleting sea wealth and increasing fuel prices. "A fishing boat which goes out to the deep sea will take around seven to 12 days before it returns to the harbour. This means, on average, 3,000 litres of diesel is needed.

The cost of the fuel has nearly doubled -- from Rs 1.5 lakh in 2019 to Rs 2.5-2.75 lakh. The additional expenses include the cost of repairing the fishing nets. Each fisherman has to be paid 'bata' and 40 per cent of the price of the catch has to be given to the workers of the boat," said Gireesh P P, Munambam Matsyamekhala Samrakshana Samithi chairman. Irrespective of their political differences, they said the contract with EMCC International India, which was cancelled

after it kicked up a major controversy, will become a talking point in coastal areas. “Contracts like these which allow foreign trawlers to fish in our seas will affect the fisher folk and may lead to unscientific deep-sea fishing. Already, the fish wealth in our sea has depleted,” said Rajeev K B, managing director, Munambam Fish Traders’ Association.

The increasing pollution, waste dumping, especially plastic waste, and unscientific fishing are the main reasons for the depletion of sea wealth. “In the past, there was a plan to launch a programme under which the fishermen would be paid if they returned with plastic that get caught in their nets. However, that plan was not implemented effectively,” said Jackson Pollayil, state president of Kerala Swathanthra Matsya Thozhilali Federation. He said similar to the Forest Rights Act which ensures the rights of the forest-dwelling tribal communities, a Sea Rights Act should be enacted which will give fishermen the rights which are due to them.

Though it stands cancelled, the EMCC contract controversy will have an impact on voters living in the coastal belts, he believes. Asked about the protection of their rights, most of the fishermen said they do not want promises which will not be kept. “We were praised by many as the heroes during the floods when we went to other districts to help people with our boats. But when it comes to key issues like EMCC, we did not see many people, especially activists, coming up with protests. When the Opposition raised the allegation, the government said they have not inked any contract with the multi-national firm,” said John Kurishinkal, a fisherman.

Kerala: Plight of fishing community ignored

<https://timesofindia.indiatimes.com/city/thiruvananthapuram/plight-of-fishing-community-ignored/articleshow/81538737.cms>

"The last five years have not been easy for the coastal communities living in 59 constituencies in the state, especially those in the fishing sector. These people, numbering to around 10 lakh, belong to Hindu Dheevera, Latin Catholic and Muslim communities. Among them, around 7.5 lakh people live along the coast and the remaining reside in inland areas. They have been bearing the brunt of sea erosion and extreme weather events but their demand to the government to set its sights beyond subsidies have gone unheeded, they say. “Neither the state nor the Centre has done much for the community’s overall development. On paper, there’s talk of harbour development and modernization. Politicians play caste and religious politics with us and leave us divided during elections,” said Antony Kurusunkal of the Kerala Swatantra Matsyathozhilali Union.

“Fish drought, weather events leading to ban on fishing across the coasts followed by Covid and the economic slowdown, the rising kerosene and diesel costs have all affected our lives,” said Charles George a member of the fisheries protection council that launched protests against the

state government's deal with EMCC International for deep-sea fishing. Fishermen say both the central and state governments have been playing politics. "The kerosene subsidy was reduced to 25 litres per month from 128 litres for the past four years. Now, just last month, they have increased it again. It doesn't even last a month for the outboard engines in traditional boats. We still need to buy from the open market.

None of the MLAs listen to us over our concerns about diesel prices, licence and registration fees, etc," said Kurusunkal. The Dheevera community has been seeking representatives from the coastal regions to represent them. "The minority communities (both Latin and Muslims) have their representatives, but often these are people who have no connection with the community and its problems. They are picked just because they represent their religions. Since we are split across the south, central and north zones, we are not a unified political force. Even the campaigning by candidates are not on local issues that have an impact on us," said Praveen V, chairman, Dheevera Trust.

Kerala: Talks needed on Blue Economy policy

<https://www.thehindu.com/news/cities/Kochi/talks-needed-on-blue-economy-policy/article33951984.ece>

"The Coastal Agency for Development and Liberation (CADAL), an initiative of Kerala Region Latin Catholic Council, has urged the Centre to place the draft policy on Blue Economy (sustainable use of ocean resources), for wider consultations. In a letter addressed to the Economic Advisory Council to the Prime Minister, the organisation said the policy would have many implications on the marine communities and marine ecology. "The draft needs to be discussed with the people/ fishers and fishing communities who will have to undergo untold miseries by way of coastal erosion, fish resource depletion and drastic ecological disasters in the sea and the sea coast.

It will affect the life, livelihood and the very existence of fishing communities in the country," it said, requesting that the policy be put on hold for some time to enable discussions once the scourge of the pandemic was over. In a press release, the agency said that the draft policy was published on February 17 and the last date for giving opinions was February 27, which it said was too short a period to discuss something with far-reaching consequences as this.

Kerala: New system to check sea erosion

<https://www.thehindu.com/todays-paper/tp-national/tp-kerala/new-system-to-check-sea-erosion/article33856416.ece>

"In a departure from the traditional method of using seawalls to protect the shoreline from coastal erosion, the government has launched a pilot project to build a geotube-based offshore breakwater system at Poonthura. Chief Minister Pinarayi Vijayan launched the project online on Tuesday. "The accelerated erosion along the Poonthura-Valiathura coast and the failure of seawalls as an effective coastal defence mechanism led the government to think of this option," he said. The Rs. 150-crore project will be funded by the Kerala Industrial Infrastructure Fund Board (KIIFB) and implemented by the Coastal Development Corporation with technical support from the National Institute of Ocean Technology (NIOT).

The pilot phase will cover 700 m off the Poonthura coast. With the loss of sand from the beach, fishermen have been finding it tough to haul their boats ashore. During the monsoon when the sea turns rough, they have no option but to depend on the Vizhinjam harbour to put out to sea. The breakwater will intercept the waves and reduce their intensity to prevent coastal erosion and allow beach nourishment. It will be extended from Valiathura to Beemapally and Shanghumghom later. Fisheries Minister J. Mercykutty Amma presided over the function which also saw the inauguration of a project to deposit artificial reefs along the coast to provide a breeding ground for fish. V.S. Sivakumar, MLA, was among those present.

Kerala: Cyclone Burevi: Sea of worries for fisherfolk

<https://www.newindianexpress.com/cities/thiruvananthapuram/2020/dec/04/cyclone-burevi-sea-of-worries-for-fisherfolk-2231430.html>

"Adverse weather conditions and incessant cyclone threats continue to disrupt the daily lives of fisherfolk in the district. While the ban on fishing activities ahead of Cyclone Burevi has left them in the lurch, a plethora of worries -- ranging from drinking water shortage to lack of housing and means of livelihood and survival -- surround fishers. At a time when the entire coastal belt in the capital is bracing for Cyclone Burevi, 62-year-old Annakutty from Valiyathura is struggling to shake off the trauma of Cyclone Ockhi which ravaged her life and the Kerala coast nearly three years ago. Ockhi, which claimed the lives of 143 fishermen in the state, left a lasting impact on fisherfolk.

"My husband was left stranded in the sea when the cyclone came and he never returned, says Annakutty. Ever since the tragedy, her life has been miserable. Though the state government has come up with a relief package, a large number of affected families are yet to get the benefits. "The government is yet to hand over B20 lakh announced for the families of those who lost their

lives during Ockhi. This relief fund is mobilised through contributions from kind-hearted people but the government has only given us the interest obtained. I get B3,500 every month from the state treasury which is insufficient.

My application for pension was also rejected as I couldn't procure the death certificate of my husband whose body was never recovered, says Annakutty, whose son is yet to get the job promised by the government. Like Annakutty, there are 91 other families whose loved ones went missing in the sea during Ockhi. Only 53 out of the total 143 fishermen who ventured into the sea were reportedly recovered. - A fisherman taking a nap in a fishing boat at Vizhinjam. - With the MET Department issuing a cyclone warning, all fishing activities have come to a standstill, Lives continue to be miserable at the existing relief camps where displaced families of Valiyathura reside. - The ban on fishing activities has come as a huge blow to many families. Several families at the camp are more concerned about the lack of food and water than the incessant cyclone alerts.

Many don't prefer lives at the camp with hardly any space to move around Water everywhere, not a drop to drink Fifty-two-year-old Rubel J, who was seen quarrelling with a friend near her battered home in Valiyathura, is irked not because of the cyclone threat but because of the lack of drinking water. "I've lived near the sea all my life and the storm alerts are a daily affair now. Currently, we have no water supply. The authorities have restricted us from venturing into the sea which equates to zero food supply, she says.

The prohibition order on fishing has come as a huge blow to the displaced families residing at the relief camp at Valiyathura UP school. Sixty-four-year-old Jacinta and her family have been residing there for the past four years. "This is our fifth year in this camp. We are surviving on an insufficient ration, she says. "My son is the sole breadwinner of this family and for the past three days he couldn't go fishing because of the ban, says Jacinta, who used to live at a rented home which was destroyed in sea erosion in 2016. "My bedridden husband passed away in the camp. But I haven't been rehabilitated yet as I didn't own the previous house, as per the authorities. Also, I've been given the white APL card as I was told the yellow card was unavailable. For the past two years I have been trying to get my name removed from the APL list so that my family gets more benefits, she adds.

Kerala: Radio Kadal gives voice to the fisherfolk in capital

<https://www.thehindu.com/society/radio-kadal-a-community-radio-service-of-fisherfolk-in-thiruvananthapuram/article33200008.ece>

"That is how James Pethiru starts his Tamil kathaprasangam (story-telling performance). Apparently, nemmeen (seer fish) proposes marriage to velameen (white snapper) only to be declined by the latter. To know what happens next, tune in to the YouTube/Facebook page of Coastal Students' Cultural Forum (CSCF), an NGO working with youth and children of fishing villages in Thiruvananthapuram. James' performance is among the many uploaded by CSCF for its community radio, Radio Kadal. As its tagline says, 'kelkkaam, kaathu niraye kadal chethangal' (listen to voices from the sea), Radio Kadal, officially launched in August this year, is by, of and for the fishing community in the district. "Fisherfolk in Thiruvananthapuram are an indigenous group. Besides following traditional fishing methods, they have their own language, dialects, proverbs, songs, stories, celebrations, games.

But none of this has been documented or recorded and this channel is a platform to do that, says Vipindas, secretary, CSCF. He adds that there is "an identity crisis due to which the fisherfolk feel alienated from the rest of society. "Their minds have been fashioned to think so. Although the fishermen are hailed as Kerala's own 'army' after they rescued lives during the Kerala floods, not much has been done till date to understand their culture or indigenous knowledge. We wanted to do something to make them proud of who they are. Since radio is a medium that can easily connect with the common man, we decided to have our own channel.

As it will take some more time to get the licence and frequency, we are currently uploading programmes on our page, he says. Once the infrastructure is ready, the team plans to cover a 30-kilometre radius extending from Pozhiyoor to Adimalathura. Johnson Jament, mentor and advisor of CSCF put forward the idea. And, they found inspiration in Radio Mattoli, a community radio service in Wayanad for farmers and tribal communities. Song of the ocean "James, a traditional fisherman from Puthiyathura, regales listeners with stories and kadalpaattukal (sea songs). He is among the many fishermen who have a wealth of information about the sea and marine life, having lived in close communion with it.

These elders, whom we also call chelalikal, teach us songs, fishing methods they adopt, about varieties of fish and more, says Vipin. Topics featured on the channel include games that once used to be popular in the coastal belt. They have also uploaded segments on achievers from the region and those who have contributed to the development of the community. "Even as we feature cultural diversity of the community, listeners also get to know of issues the residents face, especially due to the pandemic. We have had traditional fish-sellers, both men and women, talking about their struggles and children opening up about online learning. In one of the episodes, people of Kochuthope have talked about how intrusive human development has led to

coastline erosion and how people are living in constant fear of their houses being washed away, says Jima Rose, the channel's station head.

Radio Kadal also covers programmes pertaining to various schemes and initiatives for the community. Mary Anitta, creative head, adds that most of them are unaware of the services they can avail from various offices, such as Matsyafed (Kerala State Co-operative Federation for Fisheries Development Ltd), Matsyabhavan or Kerala Fishermen's Welfare Fund Board. The channel also plans to give weather updates/warnings to the fisherfolk. "Their safety is often compromised for want of timely information. The Ockhi tragedy was an example. It is important to pass on information in the language they understand, which we hope to achieve when we get the required infrastructure, says Vipin. At present, the channel only has an office building at Karumkulam, provided by the Karumkulam Panchayat.

They are looking for funds to set up a studio and buy necessary equipment. "Now everything is done on our phones, be it taking bytes, voice-over, narration. We edit the content on our laptops. It is challenging in that there have been days when we go in search for silent spots to record voice-overs, says Jima, a post graduate in sociology. Ibin Nayakam, currently pursuing his masters from Central University of Jammu, and Romer Ignatius, an undergraduate student, are other members of the core team. Children and volunteers of CSCF chip in to help with interviews, recording, narration, editing and the like. Anitta, a postgraduate in linguistics, avers that the response from the community has been encouraging. "People now call us Radio Kadal, she says.

Kerala: Vizhinjam seaport is eating up Thiruvananthapuram's beaches and fishing villages

<https://www.huffingtonpost.in/entry/adani-vizhinjam-seaport-kerala-thiruvananthapuram-coastal-erosion-in-5f8080cfc5b62d09d272b28d>

"Shanghumukham Beach, just outside the domestic terminal of Trivandrum International Airport in Kerala, no longer exists. Once among the most popular landmarks in the city, it now lies completely submerged in the Arabian Sea. Large, angry waves have also eaten away at the coastal stretch of the only road that connects the domestic terminal to the rest of the city. Vehicles bound for the airport now struggle to pass through the narrow stretch that remains of the once well-laid road. Still unsatiated, the sea has now started advancing towards the airport itself. According to Vijayan Joseph, a former researcher with the International Ocean Institute, coastal erosion started in the region in the 1970s when a minor breakwater was constructed for the Vizhinjam fishing harbour.

However, the advancement of the sea has accelerated alarmingly after construction began in 2015 on Thiruvananthapuram's much-touted Vizhinjam International Deepwater Multipurpose

Seaport. The Rs 7,525-crore seaport is being built in a Public Private Partnership (PPP) between the Kerala government and the Adani Vizhinjam Port Private Ltd (AVPPL), a subsidiary of the Ahmedabad-based Adani Group's Adani Ports and SEZ Ltd (APSEZ), which won a bid for the project five years ago. Initially slated for completion in 2018, the project has been plagued by delays, but promises to be India's deepest port, capable of handling 80% of the country's cargo trans-shipments.

The state government has contributed 360 acres of land to the project and permitted AVPPL to reclaim 130 acres from the sea. But some environmentalists, activists, and fish workers blame the upcoming seaport and the construction of its breakwater for large-scale coastal erosion that is wiping out more than three dozen fishing villages, threatening the very existence of areas such as Kovalam, Valiyathura, Beemapally, Vizhinjam, Veli, Kallumoodu and Muttathara. Dr K.V. Thomas, a scientist with the National Centre for Earth Science Studies, told HuffPost India that the coastal erosion in the Vizhinjam-Shanghumukham Region will become worse in the coming years, even posing challenges to the airport and several establishments of Indian Space Research Organisation (ISRO) in Veli and adjacent Thumba.

“Unfortunately, neither the environmental nor livelihood impacts of the project have been assessed sufficiently or accurately. The port is irresponsibly sited in the erosion-prone coast of Thiruvananthapuram. Studies indicate that the coastline is not braced to subsume the potential impacts from construction and operation of the Vizhinjam port, he said. Pointing to the Coastal Regulation Zone (CRZ) Notification of 2011, according to which the construction of ports is not permissible in coastal areas prone to high erosion, Joseph expressed concern about further deterioration. “Only 600 metres of the 3.1 kilometre breakwater has been completed so far. You can imagine the horrific situation once the work gets completed. he said. One of the earliest opponents of the project, Thomas now heads the People's Vigilance Forum, a civil society group that consolidates protests against the construction of the seaport.

According to T. Peter, general secretary of the National Fishworkers Forum and a resident of the coastal village of Veli, the project has started affecting the livelihood of fish workers in the entire area. He told HuffPost India that sea erosion has already left 172 families homeless and that fishing would be reduced due to the maritime traffic and associated risks of coastal pollution once the project is operational. Peter died of pneumonia and multiple organ failure induced by Covid-19 on October 8, a week after speaking to HuffPost India. Environmental activist Thomas Lawrence also expressed concern about the rapidly deteriorating situation.

“Thiruvananthapuram is famous for its beautiful beaches like Shankhumukham, Kovalam, Valiyathura, Beemapally, Vizhinjam, and Veli. They all are eroding because of coastal erosion. Last year alone, 603 people from 143 families in the coastal fishing villages were shifted to relief camps due to incursion of the sea, he told HuffPost India. Both AVPPL and the Kerala

government vehemently deny charges of coastal erosion and ecological destruction. The compliance report of the seaport project for October 2019-March 2020, issued by AVPPL in consultation with the Kerala government, states that there is no shoreline degradation in the area as projected by those who oppose the project. This denial comes a year after Kerala Fisheries Minister J. Mercykutty Amma had acknowledged that construction of the breakwater for the port had led to high tides and erosion of the Thiruvananthapuram coast.

The minister declined to comment when asked about the issue and her earlier statement by HuffPost India. While awarding the work to AVPPL five years ago, the state government had fixed September 2018 as the deadline for the completion of Phase I of the project. It has progressed at a slow pace however, which Adani blamed on a severe shortage of granite needed for the construction of the breakwater, and setbacks due to Cyclone Ockhi. The deadline was later shifted to December 3, 2019, which was also not met. With the Covid-19 lockdown putting a halt to construction work in 2020, the government has now extended the project deadline to October 2021.

Apart from environmental concerns, the project has been assailed with questions about its economic viability since inception. A report submitted in 2013 by consulting firm Deloitte, which had put the total expenditure of all three phases of the project at Rs 14, 283 crore, concluded that the port was not “financially very attractive. Rubin D’Cruz, an activist from the region, says that the economic viability of the project has to be viewed in conjunction with environmental and livelihood issues. “Earlier, Kerala government authorities said Vizhinjam can send and receive huge amounts of cargo to different parts of the world without routing them through neighbouring hub ports such as Colombo, Singapore and Dubai. However, now experts in the cargo handling sector say Sri Lanka's Colombo port will pose a tough challenge to Vizhinjam.

At present, Colombo is handling around 35% of the cargo movement in the region, and is more easily accessible even from India's eastern coast. Kerala's own Vallarpadam container terminal, commissioned a decade ago, is accumulating losses due to lack of business and underutilisation of its capacities,' he told HuffPost India. Of the total project cost of Rs 7,525 crore, Adani's investment is Rs 2,454 crore, with the Union Government giving Rs 1,635 crore as a viability gap fund, and the state government's share being Rs 3,436 crore.

As per the agreement, AVPPL will operate the port for 40 years, extendable by 20 more years, while the state government will get a portion of the revenue from the port after 15 years. When the project was launched by the then Congress government in Kerala led by Oommen Chandy, in alliance with Adani Group in 2015, the CPI(M) had alleged that the project involved corruption worth Rs 6,000 crore. However, the party changed its stand after coming to power in 2016. Meanwhile, a Controller and Auditor General (CAG) report of 2017 found several inaccuracies

in the project and observed that at the end of the concession period of 40 years, the project would cause a substantial loss of Rs 5,608 crore.

The CAG had also found that the total project cost compared to similar ports in other states was highly unreasonable. “The project has already deposited 6 lakh tonnes of granite into the sea to construct the port, and most of it came from sensitive portions of Western Ghats. It will require one crore tonnes of granite to complete the rest of the work. A lot of public money is getting wasted, Joseph said. Even as the sea port's financial viability remains in question, Peter warned that this is only the beginning of the project's impact on the environment and the livelihood of locals. “The port is coming up just 250 metres south of the ever-busy Vizhinjam fishing harbour.

Both the fishing industry and the marine biodiversity of the region have been affected. Tourism in Kovalam and Shanghumukham beaches has already been affected. The situation will turn murkier by the time construction of the breakwater and quay walls for the port is completed, he said. He added that the construction is posing a threat to the rich marine biodiversity of the Wadge bank off the coast of Thiruvananthapuram, which is a breeding ground for over 200 varieties of fish and is the largest coral reef of the Indian Ocean.

“It is home to more than 60 species of ornamental fish and other oceanic animals. Commercially important fish such as squids, cuttlefish, carangids, tuna, anchovies and lobsters are available in abundance there. Despite the bank's status as a Marine Protected Area, the state government decided to go ahead with the project, he explained. Dr Thomas said that over 50,000 fish workers are being affected by the project as it has resulted in the destruction of breeding grounds, reduction in fish catch, loss of beaches, loss of access to fishing grounds and increased conflict with shipping vessels. “The increased turbidity of water as a result of reclamation and dredging has started reducing the fish catch as it destroys fish spawning and habitat site, he said. Fish workers say the dredging work has caused habitat loss for several aquatic organisms, especially mussels and lobsters.

According to Thiruvananthapuram-based geologist V. Nandakumar, 15 of the 33 reefs located close to Vizhinjam have been utterly destroyed, and 17 of them heavily damaged as a result of sand deposition from dredging. And yet, even amid the controversy, the seaport is not the only big infrastructure project in the area that has fallen into the lap of the Adani Group. In August this year, Adani Enterprises secured a 50-year lease to operate, manage and develop the 88-year-old Thiruvananthapuram International Airport following a Union Cabinet decision that was strongly opposed by the Kerala government.

“If the coastal erosion continues unabated, the sea will reach the airport and Adani can integrate both the seaport and airport here, perhaps the first time in the world, Richens Morais, a fisherman in Vizhinjam, said sardonically.

Kerala: Fishermen to protest delay in execution of housing project

<https://www.newindianexpress.com/cities/thiruvananthapuram/2020/oct/07/fishermen-to-protest-delay-in-execution-of-housing-project-2206697.html>

"Its been nearly eight years since the government launched a housing project to rehabilitate the families of nearly 32 fishermen who lost their homes to sea erosion in the state capital. The state government had sanctioned `2.8 crores to the Kerala State Coastal Area Development Corporation (KSCADC) for constructing homes in 42 cents in Valiyathura. However, the Corporation has finished constructing only eight out of the 32 homes, leaving the other families in the lurch. The beneficiaries of the project have landed in a fix after they were deemed ineligible for the Life Mission scheme of the current government. Though the beneficiaries have sought the intervention of Kerala State Human Rights Commission, nothing has happened so far.

On Tuesday, a group of fisherman families submitted a letter to the KSCADC announcing a protest. Renuka John, a beneficiary who sought the intervention of the Kerala State Human Rights Commission, said that life has been miserable after the pandemic outbreak. "I have two kids and have been living at the relief camp for the past 6.5 years. Since the pandemic outbreak, we are unable to continue at the relief camps. Recently, I tried to submit an application to get included in the Life Mission Scheme of the state government. But they rejected my application as I am already a beneficiary of another housing project, said Renuka John, who had to move to a relative's home.

"The complaint I submitted to the human rights commission has also gone in vain. They haven't called me or others, even for a sitting, because the officials didn't turn up for the sittings called by the commission, Renuka John added. Former Valiyathura councillor Tony Oliver, who is leading the protest, said that they have informed KSCADC about it. "We have decided to take to the street and protest, violating Section 144 restrictions, said Tony. A senior official of KSCADC said that they couldn't execute the project because of a dispute over the land earmarked for the project.

"The land identified for the project is located adjacent to St Anthony's School, Valiyathura, and the school authorities wanted the land in exchange for another plot owned by them. We are just an execution agency and the land was handed over to us by the civic body. We wrote to them, but we haven't got a reply yet. We have given a report to the fisheries department too in this regard. Now the government has to take a call, said the official. According to sources, the Harbour Engineering Department has taken over the project.

Kerala: Chellanam residents unhappy over coastal protection project

<https://www.thehindu.com/news/cities/Kochi/chellanam-residents-unhappy-over-coastal-protection-project/article32763211.ece>

"Chellanam residents are 'disappointed' that Chief Minister Pinarayi Vijayan's announcement of a bunch of projects to protect Kerala's coast did not hold anything new for the coastal village that has borne the brunt of severe sea erosion, made more severe since the Ockhi cyclonic storms hit the village in December 2017. "The Chief Minister has only listed the projects that are ongoing. Work on geotube bags as temporary sea walls has been an utter failure, said a spokesman for Pachima Kochi Theera Samrakshana Samiti on Saturday after the Chief Minister unveiled a ₹200-crore programme for coastal protection.

He said that even the project to build new breakwaters off Kannamaly and Malakhappadi coastal segment was an old one. "Contractors are not taking up the project despite the work being tendered, he alleged. Residents have called for a comprehensive long-term package of measures to protect their lives and property. The coastal segment between Fort Kochi and South Chellanam saw sea erosion and flooding during the first two weeks of August as the rain intensified. Kochi Janakiya Vedhi too expressed its disappointment with the Chief Minister's announcements. "It is an attempt to create a delusion even as elections to local bodies are around the corner, said a statement issued by Vedhi leaders here. The statement said that Fisheries Minister J. Mercykutty Amma had expressed the opinion that geotextile tubes were not effective enough for coastal protection. Despite that the Chief Minister highlighted works being done using the same technique, they said.

Kerala: 358 fisher families to get houses in Kollam

<https://www.thehindu.com/news/national/kerala/358-fisher-families-to-get-houses-in-kollam/article32649169.ece>

"Three hundred and fifty-eight fisher families from the district will be rehabilitated as part of Punargeham, a housing project announced by the government for those living within 50 metres from the coastline. The project, being implemented by the Fisheries Department, will be allotting each family ₹10 lakh, which includes ₹6 lakh for purchasing land and ₹4 lakh for construction. If the amount spent on purchasing the land is below ₹6 lakh, the rest can be used

for construction. Fishers across the State will benefit from the ₹2,450 crore project conceived to provide safe housing for all fisher families residing in areas vulnerable to sea erosion.

In a survey conducted by the Department 1,580 families currently residing in the coastal stretch from Paravur to Azheekkal were selected as the beneficiaries. Among them 358 families, most of them from Neendakara, Vaddy and Thangassery, have agreed to move. Ninety families have identified land for purchasing and 30 have already completed registration and received the money. Six families who found house and property together were given the entire amount of ₹10 lakh and the Department expects to complete the project in three years. “Fisher families residing in vulnerable regions and willing to move are being considered for the project. Bio walls will be raised in areas evacuated by the families, said Fisheries Deputy Director K.Suhar. Fisher families from nine coastal districts in the State will be the beneficiaries of the project which will be implemented in three phases. The department had already identified the land required for the project in each district.

Kerala: Schoolboy sends SOS to President Kovind as sea erodes his village

<https://www.deccanchronicle.com/nation/current-affairs/270720/kerala-schoolboy-sends-sos-to-president-kovind-as-sea-erodes-his-villa.html>

"Left with no other choice, a high school student from Chellanam, a tiny coastal village in Ernakulam, Kerala, has approached president Ram Nath Kovind seeking his intervention in protecting his village from the sea. Edgar Sebastian, a class 10 student from Chellanam, sent an email to Rashtrapati Bhavan and not only the boy but the entire village is pinning hopes on the president. “There is no one to help us. I am writing this mail out of fear. My family used to shift from our home every year during sea erosion. But this year we could not leave the house due to the coronavirus pandemic.

Though the villagers have approached several offices, the authorities failed to take any measures in protecting the village from ferocious waves, Edgar said in his email. According to the boy's email more than 400 houses in the coastal village were damaged during this monsoon. For the residents of Chellanam, sea erosion, inundation of houses and temporary relocation to relief camps or relatives' houses are annual affairs during the monsoon. But this year, the villagers, most of them fishermen, are facing an unprecedented crisis as they are caught between the pandemic and the rough sea. Signs of hopelessness and anguish are seen on the face of every villager as they stare at a bleak future. Many families have lost their valuables when mighty waves entered their small houses.

Children are worried over the loss of their online classes as many of them lost or damaged the television sets or mobile phones in flooding. The villagers are furious over the failure of the

authorities in addressing their demand for a permanent system to insulate the village from lashing waves. They are up in arms against the piecemeal measures taken by the authorities like construction of temporary sea wall using geo-tubes. More than 1000 families along the more than two kilometre coastal stretch where sea wall is broken are at the mercy of sea. “Though funds have been earmarked and works started for construction of temporary sea wall using geo-tubes it has not been completed. Every year, the authorities will take some measures for seawall construction during February and March which is just eye-wash.

Nothing will be realised, said Jinson Veluthamannungal, executive committee member of the West Kochi Coastal Protection Forum. The health authorities announced the densely populated coastal village is as a COVID-19 spread cluster with more than 260 reported cases. This is an unprecedented situation. As many of the villagers are under home quarantine, relocating to camps or other houses was not possible.

In many houses, women, children and the elderly had to spend day and night in the open terrace area during sea erosion. “Though the authorities have promised opening of relief camps, no one was willing to relocate as the officials failed to ensure COVID-19 protocol in the camps, said TA Dalfine, convener of West Kochi Coastal Protection Forum. “Though positive cases have been reported from only three wards in Chellanam, the entire panchayat area has been declared as a containment zone. But, the actual number of positive cases will be higher as only very few tests are being done in the area, he added. Even though the rough sea receded from the village with huge heaps of sand and mud deposited in every household, it will take several days to get back to normal life. In Bazar, the worst affected area, toilets have become unusable in most of the households with big heaps of sand. With heavy rains expected next month, the residents are worried over another episode of sea ravage.

Kerala: Kochi’s coastal areas hit by double whammy of sea erosion, Covid-19 spike

<https://www.deccanherald.com/national/south/kochis-coastal-areas-hit-by-double-whammy-of-sea-erosion-covid-19-spike-864352.html>

"The coastal areas of Kochi in Kerala are struggling with the spike in Covid-19 cases and flooding of houses owing to sea erosion. The Chellanam coastal areas were the worst-hit with over hundred houses getting flooded. Over 200 persons in the locality also tested Covid-19 positive. While a triple lockdown was put in place in the locality owing to Covid-19, those on quarantine were forced to come out of their houses. Many were taking shelter on rooftops. Though the people of the area earlier used to shift to houses of relatives, now it was also not

possible owing to the Covid-19 scenario. Covid-19 first line treatment was opened in the area and steps like free ration supply were initiated on the direction of Chief Minister Pinarayi Vijayan.

Kerala: Fishers fight a losing battle

<https://www.newindianexpress.com/cities/kochi/2020/jul/22/fishers-fight-a-losing-battle-2172924.html>

"For fishers in the state, the timing couldn't be worse. The closure of four major fishing harbours -- Munambam, Kalamukku, Thoppumpady and Chellanam - along with two major markets, Aluva and Chambakkara, as Covid-19 containing measures, has spelt doom for them. Already reeling from the ban on venturing into the seas or auctioning and selling their catch, the harsh climate has come as a double blow for them. If the previous lockdown hampered sales of fish and disrupted their livelihood, the fishermen community are now anxious about their lives, being situated in containment zones and Covid clusters. Moreover, the delay in receiving relief packages has added to their dismay. "Fishermen have been battling adversities of the sea their entire lives; Covid-19 has now added to their worries.

The fisher community across the state has been badly affected during the pandemic and the ensuing lockdown. Those living at Chellanam are, undoubtedly, going through the toughest phase in life. They're literally between the devil and the dead sea -- the virus on land and stormy seas. Earlier, they could move into a neighbour's or relative's house during sea erosion but with almost 200 people testing positive, natives of Chellanam are considered to be the harbingers of the virus. As a result, they have no chances of being rehabilitated either. Neither do they have the money nor liveable homes, said Charles George, president, Kerala Matsya Thozhilali Aikya Vedi. Charles reiterated that despite several hardships, they're yet to receive relief packages from the government which could have placed the community at a better place during the trying circumstances. "Since 2016, we have been asking for the fish famine package due to the decreasing number of fish in our seas.

In April, we demanded a Covid package -- that hasn't been granted either. A meagre sum of ₹2,000, part of the flood relief package, was the only amount given to the community, he said. Those in the trade require more than ration kits, Charles said. "The government could lend a hand and elevate online sales of fish, without the interference of middlemen. Shifting to the online platform can be a significant lifesaver for the community, he added. M Majeed, coordination secretary, Thoppumpady Kochi Fisheries Harbour, highlighted that there were numerous who weren't part of the fisher community, but handled related operations, who were hit massively due to the recent lockdown measures and containment zones.

“Small business people in the sector are unsure of the how to pay their loans, he said. Needed: A strong network The sector is also embroiled in unfair prices and lobbying. Joseph Xavier Kalappurackal, general secretary, All Kerala Fishing Boat Operators Association, had recently submitted a letter to the Minister of Fisheries J Mercykutty Amma, on the exploitation during the fish sales. “The prices are mainly decided by middlemen and exporters. In 1996, international rates of export-oriented fish were to be displayed on shores every week, but till date, nothing has been done. The government needs to take control and bring strict measures even when it comes to selling fish online. Most men in the sector are unaware of the know-how to handle the money they receive from the business. While they venture into the seas and bring the catch, women need to be handed over the reins of marketing and selling fish. Such a network can save the sector, he added.

Kerala: Hundreds of houses flooded in sea erosion at Chellanam, a COVID-19 cluster in Kerala

https://www.youtube.com/watch?v=Ng_sAv0cWOI&feature=youtu.be

"Ever since the Ockhi cyclone hit this coastal village in 2017, sea erosion had become an annual disaster for thousands of people in the panchayat.

Kerala: Chellanam residents seek lasting steps against sea erosion

<https://www.thehindu.com/news/cities/Kochi/chellanam-residents-seek-lasting-steps-against-sea-erosion/article32081346.ece>

"Residents of the coastal village of Chellanam have sought more permanent measures like erection of tetrapods to prevent sea erosion and consequent flooding of homes on a long-term basis, as the geo textile tube laying project is yet to be completed even after three years of efforts. Tetrapods are ‘four-legged’ concrete structures that can resist sea waves and coastal erosion. The demand was raised in the wake of heavy flooding of around 50 homes recently following a sea swell. Two houses were severely damaged, and residents came out of their homes to protest even as three wards of the panchayat have been classified as red zones to contain COVID-19 spread. K.V. Thomas, former head of the Coastal Processing Group at the National Centre for Earth Sciences Studies, echoed the feelings of Chellanam residents when he said that both immediate and long-term measures were needed to save lives.

According to him, geo textile tube laying is only a temporary measure, and a long-term study, which may take over two years, is needed to generate data for a long-term strategy to contain sea erosion and protect lives and property. T.A. Dalphine of Paschima Kochi Theera Samrakshana Samiti said people were tired of official apathy. The COVID-19 situation has made their lives even more miserable. There is also a prediction of rain getting more intense and the sea turning

rough. Charles George, veteran fisheries union leader, said the problem of Chellanam went back a hundred years, and that no strategy appeared to have been drawn up to help the residents.

There have been substantial changes in the flow of currents and tides over the last hundred years. Serious coastal erosion and flooding have several reasons, and developmental activity over the last more than 100 years, including dredging, is one among them. Dr. Thomas said ideas like recreation of the natural beach, being experimented in Cuddalore and Puducherry, and depositing dredged materials in an area needed to be explored. He added that data generation was important in developing a model.

Kerala: Many fishermen families decline to join relocation scheme

<https://www.thehindu.com/news/cities/kozhikode/many-fishermen-families-decline-to-join-relocation-scheme/article32007299.ece>

"The "Punargeham project, introduced by the State government for the relocation of fishermen residing along coastal areas which are prone to sea erosion, has not found favour with many of the beneficiaries identified in Kozhikode district. The scheme which was officially launched the other day in Vadakara taluk, includes just 14 families in the first phase. Though the year-long groundwork for the scheme identified around 550 fishermen families, 308 families declined to join the scheme owing to its alleged flaws. As of now, only 242 families have expressed their willingness to accept the scheme in various taluks in Kozhikode district. Though there are 66 fishermen families in Vadakara taluk who are ready to change their coastal houses, it is likely to take years to accomplish their dream.

The first 14 families selected for the scheme too will have to wait for months to get their houses constructed on the found 50 cents of land identified for the purpose. In Koyilandy taluk, there are 78 families that have expressed their willingness to cooperate with the scheme and shift from their houses. However, the project implementation is moving at a snail's pace. The same is the case with Kozhikode taluk where 98 families have expressed their willingness to cooperate with the scheme.

A suitable parcel of land is yet to be identified for the majority of applicants. Though the scheme offers a financial aid of Rs.10 lakh for a family to purchase the land and construct the house, the majority of the fishermen families consider the amount too small considering the increasing price of land and construction materials. Proposals related to land pooling and construction of flats to meet this challenge are yet to make any progress in the urban area. Leaders of fishermen organisations say the shifting of their houses from the coastal area to a remote place is hardly a practical idea as it will affect their vocation and life around harbours.

Kerala: Plan to relocate fishers to safer places yet to be a reality

<https://www.thehindu.com/todays-paper/tp-national/tp-kerala/plan-to-relocate-fishers-to-safer-places-yet-to-be-a-reality/article31783643.ece>

"The plan to shift around 2,600 fishermen families living along vulnerable coastal areas in Kozhikode district to safer locations has not turned a reality, with the authorities yet to identify a suitable spot for the rehabilitation project. Objections raised by fishermen families to some of the proposals have also affected the realisation of the project. According to sources in the Fisheries Department, only around 550 families have expressed willingness to accept the relief package and relocate from their existing locations. Most beneficiaries say that they deserve a better rehabilitation package with better monetary benefits.

Representatives of various fishermen's organisations claim that the State government's rehabilitation package gives only Rs. 10 lakh to a family to buy around three cents of land and build a house less than 600-sq. feet. However, many beneficiaries say it is not sufficient to meet the actual requirement, considering the high value of land, its distance from the harbours, increasing cost of construction and the difficulty in accommodating larger families in small houses.

A field study conducted by the Fisheries Department found that all the families identified for the proposed housing assistance scheme lived within 50 metres of the coastline, which is highly prone to sea erosion. According to the study, their relocation continues to be an important issue, considering the safety aspects and the increasing incidents of sea erosion every year. At the same time, Fisheries Department officials say they are not in a position to compel beneficiaries to accept the package and shift to newer locations.

According to them, they can only submit the list of interested beneficiaries to the government and implement the project in a time-bound manner. The department is also on the lookout for cheaper land, especially the poramboke land under the possession of the Revenue Department. Meanwhile, fishermen's association leaders say no one will cooperate with the implementation of the scheme if the government is not ready to revise the existing package. The new houses offered to them should be close to the coastal areas to support their vocation, they add.

Kerala: How small fishers in Kerala's Poonthura benefited from COVID time auction system

<https://english.manoramaonline.com/news/kerala/2020/04/28/how-small-fishers-in-poonthura-village-benefitted-from-new-auction-system-during-covid-19-lockdown.html>

"Marine fishing in India has largely come to a standstill in the wake of COVID19 outbreak. In Kerala, the government has banned operation of mechanised boats. But small scale beach landing crafts are allowed to ensure fishers' sustenance and food security needs of the

society. This relaxation is subject to the strict provisions that they should maintain physical distancing at sea and fish landing centres. Controlling the highly interactive fish landing centres in these times is a daunting task. Physical distancing hardly works in a market context where auctioning of the commodity is the norm. All public health warnings will be thrown to the fishy wind that blows across such fish marketing centres.

Village-level efforts And yet, in some of the most densely populated fishing villages in Kerala, nay India, the lessons from trial and error and the collaborative efforts of local institutions, fishermen and women, officials of cooperatives, state administration and the police seem to have achieved the impossible. At least for the moment. Of course, there is still a long way to go to perfect a fish selling system which is based on physical distancing, standardisation of weights and predictable prices. But numerous village-level initiatives in Kerala's Thiruvananthapuram and Kollam districts are showing the way forward. **Poonthura model** Poonthura is a large fishing village within the Thiruvananthapuram Corporation limits.

It has a population of nearly 10,000 and a coastline length of 1.2 kilometres of which one whole kilometre is stonewalled due to constant sea erosion and unfit for beaching fishing boats. Initially, the Church in this village - the most powerful socio-religious institution in any Christian fishing village - in keeping with the requirements of the lockdown, banned all fishing activities knowing that order would be difficult to maintain. But fishing continued in smaller and far less densely populated villages along the same coast. Fishers using small boats brought in small amounts of fish. Fish sales were organised by the initiative of the fishers, youth in the village, the parish priests and the police who were called to ensure that chaos did not ensue if a whole lot of buyers turned up on the beach.

The fishers of Poonthura spent a few days obeying the Church diktat. But they became increasingly restless when they heard that neighbouring villagers' tales of fishing and big earnings. One night, a few fishers in Poonthura broke the ban. They got a bumper catch of squid that fetched Rs. 2.5 lakh. Their joy, however, was short-lived. The Church committee intervened and forced them to remit their bonanza to its fund after deducting the operating costs for their illegal venture. Following this, a few of the fisher members of the Matsyafed Cooperative in Poonthura held a meeting with the parish priest.

They suggested ways for gradually reopening fishing, particularly in the light of the new government order permitting small-scale fishing, subject to the conditions of physical distancing and other public health considerations. The meeting concluded without arriving at a consensus. This prompted the cooperative members to create a multi-stakeholder committee of 22 members representing all the different interests involved in the fishing and fish selling activities of the village. The committee includes member and non-member fishers of the co-operative, private

fish auctioneers, women fish vendors, youth and elders of the village, officials of the Matsyafed and the church committee.

This committee decided to reopen fishing and regulate selling from April 17. The district collector hailed the decision, but he warned that fishing and selling would be stopped immediately if the activities violated physical distancing and public health norms. Difficulties In Poonthura, much of the village coastline is stonewalled and it cannot be used to land fish or sell in keeping with the stipulated norms. There is only one stretch of beach at the end of the village that could be used for organised fish selling.

However, this area had no proper road access. It was a major limitation to ensure orderly flow of people and fish. The committee got over this physical impediment by setting up two check-posts at the entry point. Vehicles coming to transport fish to the retail markets used one while fish buyers used the other. They were issued 15 tokens at a time that are valid for 45 minutes. How it worked At the sandy portion of the beach ahead, five numbered and enclosed spaces have been created with barricades.

Sorted fish brought from the boats in boxes are displayed and weighed here. Each barricade has 15 chairs - spaced out by 1.5 metres - to seat the buyers. The buyers will be allowed into the numbered barricades when the fish arrives, but only after police verify their entry tokens and face masks. The youth volunteers, Matsyafed officials and the police exhibit great efficiency and courtesy in their dealings. The committee has prepared a price list for each fish species. This will be revised every two days and displayed prominently outside the stalls. Buyers will be issued payment receipts from the cooperative. Initial days The initial three days were chaotic. High decibel shouting and disagreements between fishers and organisers rent the air. Questions were raised about prices and weighing. Buyers haggled over which fish variety should be sold first.

The new order appears to have disappointed traditional auctioneers as they find themselves marginalised. Fishing and fish buying involve a huge element of luck. A lottery element is innate to it. But ability, tact, quick judgement and prowess are the key ingredients of success. In one sense, bringing new order is creating chaos to the current system. But this is a process of learning. New social innovations can happen only like this. There are always gainers and losers. There must be ways to compensate or co-opt the losers least they try to sabotage the system. Auctioneers are the big losers in Poonthura and other large fishing villages. They are mostly influential persons in the church and society and pose a threat to the system. They provide the credit which keeps fishing going. Fishers are the biggest gainers in this process.

They benefit from negotiated fixed prices without fear of a slump when the fish catch is on the higher side. The women and men – particularly the smaller vendors – stand to gain if they can

organise themselves into small groups, pool their funds and purchase the premium species directly from the fishers, and sell it to the elite city consumers. Whether this new COVID-19 orientation to fishing and fish marketing will establish a new order will depend on how long we will keep these strict lockdown regulations in place and on whether a large enough number of key stakeholders see gain from the new practices. The support of local socio-religious institutions, government agencies and civil society will be key to ensure that this will be more than a transient experiment in social engineering.

Kerala: Fishers severely impacted by Covid-19

<https://www.newindianexpress.com/cities/thiruvananthapuram/2020/apr/23/fishers-severely-impacted-by-covid-19-2133893.html>

"Restriction on fishing activities due to the lockdown declared in the wake of Covid-19 has severely ravaged the livelihood of fisherfolks in the state capital. With the state government unwilling to lift the ban imposed on traditional fishing using gill nets (kambavala) and seine boats (thattamadi) to curb the spread of the pandemic, artisanal fishermen in the coastal villages of the capital are on a warpath. In a mark of protest, hundreds of traditional fishermen ventured into the sea violating restrictions imposed as part of the lockdown on Tuesday. Having been out of work for the past several weeks, their livelihood has been severely affected. Many are yet to get ₹2,000 announced by the state government.

“We are facing acute poverty and I cannot let my family starve. We had waited patiently for the past four weeks listening to the authorities. First, they asked us to wait till April 14 and then April 20. We are ready to adhere to all social-distancing norms put in place. We don't want to challenge the authorities; this is a matter of survival, says 72-year-old B Nijoob, a fisherman from Beemapally who uses kambavala. He is one of the 4,500 kambavala fishermen in the district. The police and district authorities are on their toes enforcing restrictions in the coastal villages here. The government has come up with strict norms to regulate fishing activities and has banned auctioning of fish. As per the current directive, fisherman can sell their catch without an open auction and the price of the fish will be fixed by the harbour management society. However, the decision hasn't gone down well with many.

“The police ordered us not to go fishing. Around 30 to 40 fishermen are involved in the operations of a single kambavala, alleged Abdul Nazir, another fisherman. The fishermen have decided to go ahead with fishing despite the restrictions. President of Kambavala Thozhilali Federation Tony Oliver said life is impossible for the hundreds of fishermen depending on traditional fishing. “The fishermen are ready to adhere to social-distancing norms while operating the kambavala. But it has been over a month and we cannot continue like this. The

majority of us don't have a membership with the welfare board and are ineligible for the benefits which makes life worse, said Tony.

He said that discussions are being held to resolve the issue. At the same time, some fishermen are unable to go fishing because of sea advancement and erosion. Fisherman Antony Stancilis said that there was no shore to operate karamadi (drag net) at Kuzhivilakam in Valiyathura. "Now we are forced to move to Shankhumukham, which is full already. We can fish only when the fishermen at Shankhumukham are not operating karamadi, said Antony.

Kerala: Geotube breakwater at Poonthura soon

<https://www.thehindu.com/news/cities/Thiruvananthapuram/geotube-breakwater-at-poonthura-soon/article31064447.ece>

"Coastal protection works using sea walls made of groynes and rocks maybe a thing of the past with the Fisheries Department going ahead with the first offshore breakwater using geotubing at Poonthura. Fisheries Minister J.Mercykutty Amma told the Assembly on Friday that the project is set to take off in April. The project is being implemented with the technical support of the National Institute of Ocean Technology (NIOT). The department had a few months ago begun a pilot of the project at Poonthura, with the construction of a 700-metre-long offshore breakwater using geotubing.

"The NIOT Director was in the State on Thursday. We conducted a review of the pilot. The tender has also been opened and we have identified a contractor. The first such breakwater in the State will be from Poonthura to Shanghumukhom. We expect the work to begin by April this year with an expected completion time of three months. The NIOT has experience in building breakwater using geotubes at Cuddalore in Tamil Nadu, which will be the model we will be following here, she said. The Minister said that if the project is proved successful, it can be replicated across the State's coastline.

This will help in protecting the coastline without mowing down hills for rocks. Funds for the project have been sanctioned from the Kerala Infrastructure Investment Fund Board (KIIFB). With the implementation of the project, the breakwater will intercept the waves 120m from the shore. The reduced intensity of the waves will prevent coastal erosion, and allow beach enhancement. Fishers too will have no problems in beaching their boats. The offshore breakwater will be built parallel to the shore. Five breakwaters of 100-m length will be installed initially. They will be situated 50 m apart. Boats will be able to reach the shore through these gaps.

Kerala: The dying lake of Wayanad

<https://www.thehindu.com/news/national/kerala/the-dying-lake-of-wayanad/article31026664.ece>

"Debates on conserving biodiversity-rich areas often fall on deaf ears. The Pookode Lake in Wayanad, an ecologically fragile district, is a glaring example. The second largest freshwater lake in the State is dying. A large part of the 5.172 hectares of the lake has turned into green grassland because of soil erosion brought about by uncontrolled construction and farming activities taking place in areas around the lake. The lake is dying mainly due to anthropogenic activities, eutrophication (a process by which waterbodies receive excess nutrients that stimulate excessive plant growth), and accumulation of sediments owing to soil erosion. According to a study, the maximum depth of the lake has declined to 6.5 metres from 12 metres nearly four decades ago.

Construction activities by the Tribal Development Department atop the hill, hardly 500 metres away from the lake to provide houses to landless tribals, pose threat to the waterbody. Four streams originating from the surrounding hills provide the lifeline of the waterbody. Any construction activity on the nearby hills will sound the death knell for the streams and finally, the lake. Pookode Lake is an important eco-tourism destination in the district. According to a recent study by the Centre for Water Resources Development and Management (CWRDM), Kozhikode, every year the number of tourists visiting the lake is on the rise.

The study also found that the environmental quality of the lake was deteriorating owing to various human activities. The lake environment is extremely sensitive to environmental changes in its watershed. Worse, when phenomena like eutrophication and pollution occur, even though they may proceed slowly, the damage caused is correspondingly difficult, if not impossible, to reverse. Though the lake is in the possession of the Fisheries Department, it has been developed as an eco-tourism centre on the direction of the district administration in the 1990s. It is the habitat of several endemic and critically endangered fish species, including *Puntius pookodensis* (Pookode Barb).

The lake shore is also a major habitat of nearly 70 species of birds and nearly 60 species of Odonate. Today, more than half the portion of the lake is covered with three species of water weeds. The long-term damage to aquatic native biodiversity they can cause is still unknown. It is high time an urgent intervention was made to preserve the lake. Unfortunately, the district administration is yet to adopt measures to save the dying lake. Though a main stream of the Thalipuzha River, a tributary of the Kabani, originates from the lake, the natural flow of water has been closed by the Tourism authorities for boating purposes. We should pay heed to experts on freshwater resources who warn that while what happens in the air, on land, and in the sea, affects lakes and rivers, we are all affected by what happens in lakes and rivers.

The eroding shorelines of Thiruvananthapuram, Kerala

<https://www.thehindubusinessline.com/blink/cover/coastline-erosion-in-keralas-capital/article30818347.ece>

"Thiruvananthapuram's Shanghumugham Beach is shrinking by the day, as the sea is continually pressed inland by a combination of climate-related and man-made causes. On weekends, there is hardly any elbow room on Shanghumugham Beach in Kerala's capital, Thiruvananthapuram. The smell of roasted corn hangs in the air, vendors mill around the walkway that leads to the beach, families lounge around a 35m-long sculpture of a reclining naked woman 'Jalakanyaka' by Kanaayi Kunhiraman that seems to strain against Kerala's conservative ethos yet has come to be one of the most recognised landmarks in the city. It is a familiar beach scene. The only problem is there isn't much beach left.

"Every year, I feel the sea is drawing closer, says Indu, a 44-year-old Thiruvananthapuram resident who has been coming to Shanghumugham since her childhood. "The beach is so much smaller than it used to be. We would come here to get away from the congestion in the city, and now look how congested the beach has become. She points to a row of fishing boats lined up along a part of the shore usually reserved for people. The boats were moved after vast tracts of the Shanghumugham shoreline were eroded following Cyclone Ockhi, which hit the Kerala coast in December 2017.

A nearby road, which runs parallel to the beach, bears testimony to Ockhi's fury rope and traffic cones cordon off the traffic from long sections of the road that were washed away by the waves. Even now, the waves are visibly rough but they do not deter visitors. Beach-goers play a game of racing back to the shore before the water reaches their ankles, laughing aloud when the wave beats them to it. Others try to venture into the water, holding hands with their friends but lose balance when the wave pulls back into the sea.

The whistles of coastguards pierce the air, instructing the crowds to move away from the water. Families with toddlers are turned away from the water. Standing under a wide umbrella, Shishupal, a coast guard, watches his colleague admonish youngsters taking selfies with their backs to the waves. "Earlier, we would merely look on as people played and swam since the sea is quieter at this time of the year, but now we must strictly prevent them from going into the water, he says. "We can't trust the waves anymore.

After the [2004] tsunami and Ockhi, we rarely see the sea calm. Shishupal has been working as a coast guard since the early '90s and remembers how he would have to walk for about a kilometre to reach the sea in Shanghumugham. Since then, he notes that both the height and force of the waves have increased, not just during the monsoon months of June to September, when the sea is

usually rough, but all through the year. “It's getting harder to predict how the sea will behave, he says. Part of the notion of Kerala being ‘god's own country’ is drawn from the abundance of its water resources. Bordered by the Arabian Sea on the west, Kerala has 44 rivers, 34 lakes, scenic lagoons, mangroves and estuarine wetlands, and also receives heavy rain during the monsoons. But having been battered by severe floods in 2018 and 2019, the state's relationship with water is fast changing.

An article titled ‘Impact of sea level rise and coastal slope on shoreline change along the Indian coast’, published in 2017 in the international journal *Natural Hazards*, noted that the highest level of coastal erosion was observed in West Bengal. Kerala was a close second. Other studies have observed that the western coast of India was mostly stable, except for Kerala's coastline. Of Kerala's 590-km coastline, 63 per cent faces sea erosion. The enforcement of the Coastal Regulation Zone Notification is lax. Among nine districts observed to be affected by sea erosion in Kerala, the maximum (23 per cent) has been reported in Thiruvananthapuram.

The state capital has a 35-km coastline, and is one of the densest districts in terms of population factors that exacerbate the vulnerability of its people at the time of a natural disaster. Cyclone Ockhi, for instance, threw into sharp relief the dangers faced by populous settlements along the coast. Houses and other buildings were washed away in areas such as Valiyathura and Shanghumugham, and families identified as vulnerable were offered ₹10 lakh by the state to relocate to safer areas. But many are loath to leave the coast. “What kind of land will you get these days with ₹10 lakh in this city? Will it cover the cost of building a house? Who will pay for my transport back and forth from the shore?” asks Gilbert (59), a grizzled fisherman who lives further up the coast in Shanghumugham.

His house faces the sea, separated from the beach by a narrow road. “Why are you coming now, when the sea is safe? Come in June and see what we have to live with. His neighbour comes out of her house on hearing Gilbert's raised voice. She squints and points to a boat in the distance. “That's where the sea would begin, she says. “You'd have to walk that far to get to the sea. Gilbert also remembers the beach being a vaster expanse. “During the '80s, there would be swathes of anchovies, sardines and other small fish drying under the sun. We would have dinner and lie down to sleep on the shore, he recalls.

“Now there are hardly any fish to catch, let alone to dry. And the sea is knocking at our doors. He attributes the recent disturbances in the sea to the Vizhinjam International Seaport, which is currently under construction. The port is located about 18km further south from Shanghumugham beach. “Ever since the harbour came up, the waves have become rougher. Because of the breakwater in the harbour, the waves have nowhere to go and are hitting us harder. A nearly 310km stretch (close to 60 per cent) of Kerala's coastline has been protected by seawalls, groynes and offshore breakwaters. Experts have long maintained that fortifications of

this kind affect the flow of the currents around the shore, resulting in the intensification of waves to the north of the breakwater and subsequent erosion of that shoreline. But the residents insist that fortifications are the only way they can save their homes. Gilbert points to a mark on the wall of his house, about a metre from the ground.

“Last monsoon, the waters rose and came into my house till here. We told the government to put in seawalls but they said they didn't have money. Sacks of absorbent clay are lined up along the road in front of his house. “We have to make do with this instead of a seawall, but the only thing protecting us are our prayers. On the Observatory Hills opposite the Kanakakunnu Palace, where the office of the Kerala State Disaster Management Authority is located, Sekhar L Kuriakose, member secretary, clarifies that what is happening in Shanghumugham is not representative of what is occurring elsewhere along Kerala's coastline which is beset by issues of rampant coastal regulation violations, destruction of adjoining wetlands and sea surges. “The erosion and accretion process is a cyclical one. Shanghumugham's shore will erode as well as build up eventually.

I wouldn't call it a classic example of climatic variation, he says. “Shanghumugham is an interplay between whatever is happening in terms of changes in the Arabian Sea, in terms of temperature regimes, wind patterns and the different anthropogenic factors such as the Vizhinjam harbour, increased built-up area along the coastline, and so on, he notes. The average temperature in the Arabian Sea seems to be rising, he adds. Recent studies have attributed the rise in temperature to the rapid warming of the Indian Ocean, among other climate change signals, but the root cause of the rapid warming remains unclear. “If the temperature is increasing, it means the air will have more moisture and the sea will have more wind, and this manifests as rough waves, he says. Recent studies also note an increase in wind velocity and wind-related disasters across the coast.

“Our construction practices are not wind-resilient, so we've been getting a lot of cases of rooftops being blown away and electric poles and trees falling on houses, he says. He also adds that fish stocks have been dropping because of overfishing, degradation of marine environment, ocean warming and so on.

As a result, fishermen are forced to go into deeper seas, adding another layer of vulnerability to a population at risk. Even during Cyclone Ockhi, what began as a depression in the Arabian Sea quickly changed course and became a cyclonic storm, hitting the Kerala coast without warning. Fishermen who had already set out for the sea couldn't be notified in advance. Even now, families in Valiyathura wait for news from their kin who went missing at sea back then. Other experts have pointed out that seawalls and breakwaters interrupt the accretion of sediments along the coast, thereby preventing the coast from being replenished. Moreover, the intensive quarrying for rocks needed for such structures contributed to the denudation of hillsides in the

Western Ghats, leading to an unprecedented number of landslides in Kerala's hilly districts such as Wayanad and Idukki during the floods of 2018.

Furthermore, the dams in Kerala's rivers that drain into the Arabian Sea have been faulted with preventing the flow of sediments to the coast. The picture that emerges of Kerala's many-layered vulnerabilities is dire. Studies suggest that the sea level may rise by 15-38cm in Kerala by mid-21st century. "From a disaster manager's perspective, it's more like a cautionary note on a cigarette packet, Kuriakose reflects. "We're aware of the dangers. And we now know yet another cause for the danger. Back on the shore, Gilbert leans against a sack of clay and shrugs. "This beach is my home. The sea is my livelihood, he says. "I'm not going anywhere.

Tamil Nadu and Kerala: IIT-Madras develops eco-friendly alternative to seawalls

<https://www.asianage.com/india/all-india/110220/iit-madras-develops-eco-friendly-alternative-to-seawalls.html>

"After successfully testing the efficacy of the technology of groyne fields since 2007 along the Kerala and North Chennai coastline to fight sea erosion, Indian Institute of Technology, Madras (IIT-M) has developed an eco-friendly system using geotextiles to save seashore. The system, geotextile-wrapped over geo cell, developed with the fund offered by the Kerala government, has reached the final stage, Dr. V. Sundar, professor, department of ocean engineering, IIT-M told this newspaper. "We hope we would be able to introduce it on the ground in a year. "The system works with a dual structure: one is the geotube that will be laid on the updrift side and the second, a geo textile structure that replaces the conventional seawall in the down drift side, Dr Sundar said.

"The geotube will act as a shock absorber by reducing the power of the waves. Ultimately, the system brings down the power of the high waves during the monsoon season that would cause sever damages to the life and property of coastal people. He said the IIT team pursued the project after Kerala government accepted its proposal a couple of years ago and the allocated the fund for the same. "We are is waiting for the release of the final instalment of the fund from the Kerala government to test the technology on the ground. The system is eco-friendly and cost effective compared to conventional rocky seawalls, he said.

"The sizable boulders are unavailable and that was why we thought about the geo textiles, he said. "Geotextiles are strong enough to withstand the pressure of waves. It's the real alternate for the rocky seawalls. It may be recalled that the IITM team, under Dr. Sundar, has successfully tested groyne field technology laying down as many as 25 structures in as many as 20 shorelines in Kerala since 2007. "We are satisfied with the performance and it helped save many villages in

Kerala. The unavailability of boulders is the major challenge in going ahead with that technology. Therefore we were forced to look for the alternative, he said. According to Dr Sundar, IITM has done a review study on the implemented groyne fields in the coast of Kerala in around 20 locations.

“Based on a detailed review, it is found that groyne fields in 12 out of the 20 locations are in good state and functioning very effectively and have recovered lot of beaches. Though the remaining fields are comparatively less effective in recovering beach, they have controlled erosion to an acceptable limit, he pointed out.