

# KERALA CALLING

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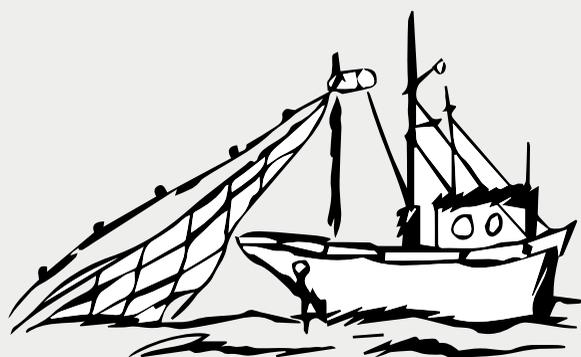


## SEA CHANGES *in the* FISHERIES SECTOR

To believe in fearless minds  
and tireless feet,  
to brave the raging seas every day  
and walk side by side  
with hearts that beat in time  
with the waves.

# HUMAN *by* NATURE





# Committed to the well-being of fisher community

It is a scientific fact that life had its origin in the sea. As life started climbing each of the rungs of evolution, it carried the saltiness of its origin in its memory. And still, it goes on. And it will go on indefinitely.

To many of us, the sea is a miracle. What is perhaps more miraculous is the adventurous life of the fisherfolk. Braving the waves and sailing forward with resolve, the fishers work not only to win their bread but to provide us with valuable nutrients as well.

These brave-hearted people know and speak only the language of love. The whole of Kerala was moved by their intense love during the terrible flood of 2018. They cast their nets of love to save us from the brink of a possible disaster. Acknowledging their bravery, we started calling them 'Kerala's Own Army'.

Their bravery is matchless. They do not turn a deaf ear when an emergency arises. So, it's our duty to guard their rights, and return the love they shower upon us.

The government is cognizant of this fact. It has initiated many welfare measures

for the fisher community since 2016. But, much more has to be resolved. The government realises this and has started implementing more measures to put an end to their unresolved woes.

The government has been operationalising stronger measures in the areas of rehabilitation, employment, educational assistance, distribution of compensation, and empowerment of women in the coastal area. Many of these are the first of their kind in the country itself. Punargeham, a project which ensures safe houses for the community and will cost the exchequer Rs 2450 crores, is the most significant among these.

This issue of Kerala Calling is dedicated to the fisher community, the salt of Kerala. Different welfare measures for the community are explained in detail in the issue. The Vizhinjam project, which will be a milestone in the development of the state, is also given due importance.

**H. Dineshan IAS**  
*Editor*



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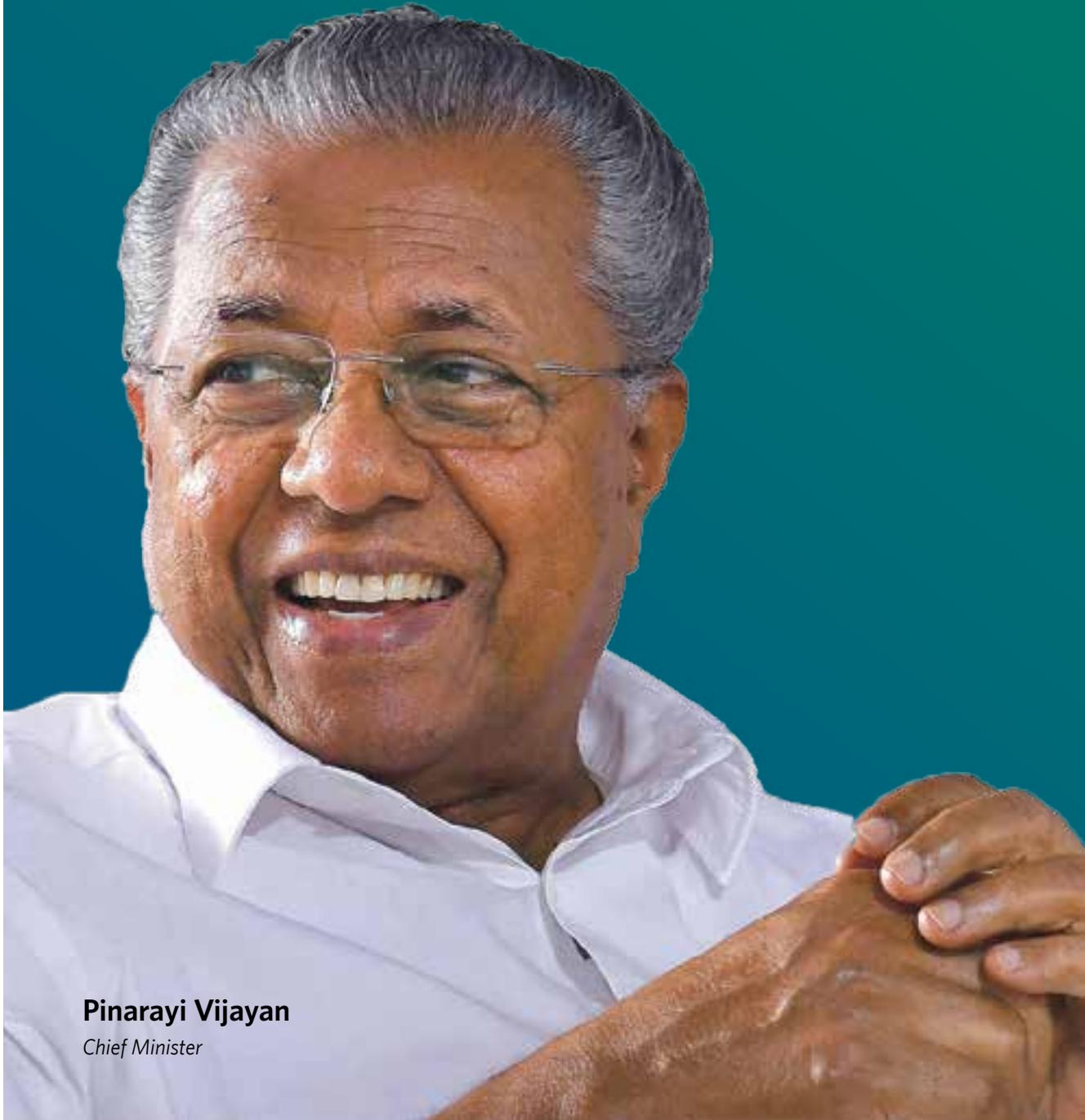
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An anchor to sustainability

M. V. Baiju

# Tremendous changes in the fisheries sector



**Pinarayi Vijayan**  
*Chief Minister*

## A slew of welfare measures implemented by the Government has given a new facelift to the lives of the fishing community in the State

The Government of Kerala has always stood committed to the welfare and progress of our fishing community. Over the years, we have designed and implemented many projects aimed at comprehensively developing the coastal area and fisher folk. These programmes are aimed at bringing them to the forefront of our society, economically, socially and educationally.

In spite of Kerala's fishing industry being an integral part of its economy, the fishing community still struggles with economic instability and social backwardness. This is due to a variety of historical factors. The State Government's vision does not get confined to the implementation of welfare measures alone. It also focuses on ensuring a change in their social conditions, so as to secure a brighter future for them.

Climate change has become a reality. The most affected are those who live near the sea as coastal erosion threatens their lives. Therefore, providing safe and quality housing facilities for the fishing community is our top priority. Accordingly, the previous Pinarayi Vijayan Government established the Punargeham scheme.

To enable them to buy land and construct a house, a family is given Rs. 10 lakhs – Rs. 6 lakhs for the land and Rs. 4 lakhs for the house. Apartment complexes are built for those who cannot find a piece of land to build a home. The insurance coverage of fishermen and allied workers has been raised from Rs. 5 lakh to Rs. 10 lakh. The Government has also brought 2.5 lakh fisher folk and about 1 lakh allied workers under the accident insurance scheme.

The State Government's share in the savings relief scheme has been increased from Rs. 900 to Rs. 1,500. There is a scheme in place for follow-up treatment for workers risking their lives at sea. Those who lose their land and houses during the time exceptional flood tides are being compensated with Rs. 10 lakh each. The cage fish farming scheme has been implemented to support fishermen.

'Akshara Sagaram' is a crucial programme which aims at increasing literacy in coastal regions. The 'Vidyatheeram' scheme, which provides special training to the children of fisher folk who excel in studies, has created a big change in this sector. By giving special entrance training to children of fishermen, 54 students got admission to MBBS. More than 100 students got admission to other professional courses as well.

As part of this programme, training is conducted for fisher folk's children in examinations for civil services, banking, and the PSC. Moreover, 578 fisher folk's children received free medical entrance training. For improving the basic facilities of coastal schools, measures have been initiated using the funds of the Department of Fisheries. Subsequently, an administrative sanction of Rs. 66.35 crore was also given to increase the infrastructure of 57 schools through the KIIFB.

**'Akshara Sagaram' is a crucial programme which aims at increasing literacy in coastal regions. The 'Vidyatheeram' scheme, which provides special training to the children of fisherfolk who excel in studies, has created a big change in this sector.**

A 24-hour call centre has been set up for the prompt redressal of complaints. 'Samudra' buses have started plying in Thiruvananthapuram extending free travel for women fish vendor. A scheme worth Rs. 15 Crore has been implemented to provide 10 deep sea fishing boats as a pilot project to enable traditional fisher folk to engage in deep sea fishing. 150 micro-



enterprises and 400 joint liability groups have been started as part of the Society for Assistance to Fisherwomen (SAF). From online marketing to small enterprises, 'SAF' has become a role model for women's advancement. Insulated boxes have been allotted to 483 fishing vessels so that the catch can be kept fresh and brought ashore.

The Kerala Fishing Regulation Act has been timely revised to ensure the welfare of the fishermen and promote scientific fishing. The Act was passed to regulate and systematise the stocking, auctioning and marketing of fish so as to make the process further effective. The Bill was introduced in the Legislative Assembly after seeking the opinion of fisher folk's organizations. Special Adalats were organised with the participation of insurance companies to see that the grievances of the fisher folk's families are redressed and to ensure that they get compensation that remain due even after 10 to 15 years of their death. 201 applications were considered and 129 were disposed off. Through this, Rs. 12.44 crore have been made available to the fishermen families.

In Kasaragod, Azhikode, Ponnani, and Thottappally, Fisheries Stations have been established. In order to carry out sea rescue operations more effectively, sea safety squads have been formed at Vizhinjam, Neendakara, Vypin, Beypur, Kannur, Alappuzha, Thrissur, Ponnani, Kasargod and Mudalappozzi. In this short span, the State Government has been able to implement many projects beneficial to the people of the coastal region of Kerala.

## The support the fishing community in Kerala has been getting from the State Government in the past six and half years is unprecedented.

Since the beginning of the construction of the Vizhinjam project, the Government has adopted an approach of sympathetically considering the entire needs of residents and fishermen. We have appointed an expert committee to study the alleged coastal erosion. House rent is being given to those who are staying in relief camps. Conversion of existing kerosene engines to diesel, petrol and gas engines will be implemented soon. A one-time subsidy will be given for this programme. Diesel will also be made available at subsidised rates. Minimum wages will be paid on days on which they cannot go to sea due to rough weather. The Government has been able to address the concerns with the seriousness they deserve and come up with proactive solutions. We expect the full cooperation from all sections of the people for the successful implementation of the Vizhinjam project.

Secure housing is a right. The LIFE Mission programme initiated by the previous Pinarayi Vijayan Government is realising this dream in



Kerala. So far, close to 3.25 lakh homeless families have been housed under this scheme. Construction of 34,374 houses is in progress. However, considering the urgent need to rehabilitate these on the coasts, the Government has launched a separate housing scheme, Punargeham, for fishing communities. It aims to rehabilitate families who live within 50 meters of the high tide line. The total cost of Punargeham is Rs 2,450 crore. Under this scheme, 390 housing complexes have been completed and handed over to the beneficiaries.

The Government also intends to build housing complexes in Muttathara, Karode and Beemappalli in Thiruvananthapuram district, West Hill in Kozhikode district, Ponnani and Niramathur in Malappuram district and Koipady in Kasaragod district. Eight acres of land belonging to the Dairy Development Department have been acquired and handed over in Muttathara to build flats for homeless residents. It is targeted to be completed within a maximum of one and a half years.

We have designed the project keeping in mind the needs of the fisher folk. The State Government has made committed efforts to ensure their safety and social security. The project, in three phases, will rehabilitate 8,487 families in the first phase and 5,099 families each in the second and third phases. Even during the Ockhi disaster, the Government generously supported the fishing community on time. Rs. 20 lakh each was provided to the families of those who died or went missing. The Government could restore lost homes, provide educational

support to the children of victims and employment to dependents. We also provided funding for lost and damaged fishing gear.

The support the fishing community in Kerala has been getting from the State Government in the past six and half years is unprecedented. During this period, we have catered well to the coastal area's overall development. Activities include the construction of fishing harbours, non-traditional coastal protection activities, construction of coastal roads, schools, health centres and other coastal infrastructure.

It makes us proud that we have made these achievements at a time when State Governments are deprived of their rights to exercise their powers over coastal waters. The new economic policies implemented in the fishing sector in the name of the Blue Economy will pose a serious challenge to the coastal regions. Blue economy policies may create a similar crisis in the fisheries sector as in agriculture. Therefore, the projects implemented by the Government of Kerala in this field with an eye on the future should have the support of everyone who wants to protect our coastal area and fishing community.

The people of Kerala cannot forget how bravely our fisher folk came to the rescue of hundreds of people during the 2018 and 2019 floods. They risked their lives to protect ours. The State owes much to them. Now as a society we are doing everything possible to uplift their lives. ■



Saji Cherian

*Minister for Fisheries and Culture*

# Waves of relief sweep the shores

It is of utmost importance to protect the right of fishermen to do their job without any bounds and lead a secure life. This will be possible only through interventions that recognize and address their real problems. The schemes and initiatives implemented in the last six years on issues such as rehabilitation of those who live in perpetual fear from the turbulent seas, employment drives, educational aids, distribution of compensation, women empowerment, etc, are unparalleled.

**T**he fishing sector has a great impact on the economic and social aspects of Kerala. With a very lengthy coastline and numerous inland water bodies, the fishing sector in Kerala offers great possibilities. The government has been taking proactive measures aimed at the upliftment of the fishermen community.

It is of utmost importance to protect the right of fishermen to do their job without any bounds and lead a secure life. This will be possible only through interventions that recognize and address their real problems. The



## The wholehearted support and assistance provided to the education of fishermen's children is proof of the commitment of the Pinarayi government to the cause of the upliftment of the community.

focus of this government has always been making such productive and effective interventions. All our activities have been aimed at bringing the fishermen community to the mainstream.

This government has a humane approach towards working class and struggling communities. The same is with the fishermen community too. The schemes and initiatives implemented in the last six years on issues such as rehabilitation of those who live in perpetual fear from the turbulent seas, employment drives, educational aids, distribution of compensation, women empowerment, etc., are unparalleled.

### The objective: the welfare of the fishermen

There are many examples to cite to prove that the living conditions of the fisherfolk are improving. As many as 4212 fishermen families have been provided homes under various schemes. In addition to that 1876 homes were provided under the Punargaeham scheme. A total of 3212 families were given assistance to purchase land and register it. 390 families were provided with newly built flats. 992 flats are under various stages of construction. House rent is being paid to those who are sheltered in relief camps after losing homes to calamities. The government first started providing house rents following the Ockhi calamity. The rent amount was Rs 3000 then. Now, the rent amount has been raised to Rs 5500. Two installments have been paid to 240 families till now.

The wholehearted support and assistance provided to the education of fishermen's children is proof of the commitment of the Pinarayi Vijayan government to the cause of the upliftment of the community. Orphaned children from the community are adopted by the government and their education expenses are fully met.

A wide range of schemes is being implemented for the empowerment of women from families involved in fishing as well as related vocations. Schemes



such as Theeramaithri Seafood Restaurant, Samudra project in association with KSRTC, Samudra Seafood processing units, and marketing outlets are all implemented with the aim of empowerment of women in the coastal region.

### **Government's help in crisis times**

This government has come to the aid of the fishermen community whenever they faced various crises, especially when the adverse weather conditions and COVID-19 restrictions affected their work. Relief packages of Rs 84 crore in 2020-21 and 98.8 crore in 2021-22 were disbursed when prolonged unfavorable weather conditions stopped them from going to work for several days. During the lockdown induced by COVID-19, a compensation of Rs 32 crore was given.

### **Emphasis on coastal protection**

There has been unprecedented progress in the implementation of schemes to protect the coastline. Chellanam is a fine example.

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This government has implemented an interest-free loan scheme for fishermen to purchase fishing equipment. Microfinance scheme assistance was also raised from Rs 20,000 to Rs 50,000. As many as 40,000 lifejackets and 240 satellite phones were provided to fishermen as this government believes in preventing accidents rather than acting after something bad has happened.

### **Modernisation inevitable**

Our fishing sector still has a long way to go. Our fishing harbours need to be transformed in tune with time. We should create facilities that can accommodate deep-sea fishing vessels here.

Developed nations like Norway have achieved great progress in the fishing sector. Fishing vessels there are equipped with processing units. We can at least equip our fishing vessels with good cold storage units. The scope of setting up processing units at harbours is also being probed.

Efforts are also underway to



switch from kerosene fuel to alternative fuels in a bid to reduce costs. More diesel bunks are being set up at harbours.

The government is also promoting inland fishing and fish farming. Measures are being adopted to improve the productivity of existing systems. Studies are also going on to check the scope of fish farming in seawater. Countries like Norway have agreed to collaborate with our state. The state government and Norway have agreed to collaborate on 14 issues related to fisheries and aquaculture. Mariculture, fin fish hatchery, equipping fishermen for deep sea fishing through the cooperative sector, expansion of aquaculture, cooperation of the research sector, studies on pollution of Vembanad Lake, climate change, etc will come under the purview of the 14 issues. Norway will cooperate with Kerala to develop fish fodder in our own ways and to emulate the Norwegian methods imparted in aquaculture. The Norway University and the Research Center have agreed to collaborate

with the State government for imparting diversification in aquaculture.

Coastal Development Corporation and Matsyafed are taking initiatives to bring out a variety of value-added products related to the fishing sector. Startups in this field are being encouraged to promote these value-added products.

The three net factories under Matsyafed are running well, with record production. Soon, all these factories will be able to produce all the nets needed for our fishermen. The government is also planning to implement the second phase of the 'SuchitwaSagaram, SundaraTheeram' campaign aimed at turning our coasts plastic-free. ■





P. P. Chitharanjan MLA

*Chairman of the Legislative Council of the Welfare of the Fishermen  
Board member of Matsyafed*

# Matsyafed: An all-weather friend in all circumstances

Comprehensive development of the fisheries sector which plays a vital role in the growth of our economy is very essential.

With its wide coastline and inland waterways, the state of Kerala is rich in water resources and is progressing towards achieving better fish production and protecting its existing fisheries. The fishermen are a community that works hard in the primary production sector but are often struck down by natural calamities.

Comprehensive development of the fisheries sector which plays a vital role in the growth of our economy is very essential. This development aims at providing occupational safety for the fishermen, initiating fishing-related industries in the region, and creating more employment opportunities in the sector. A futuristic long-term policy that coordinates all fisheries-related departments and government agencies is required to implement this.

20 to 25 percent of the international fish production and distribution

is the contribution of Kerala. Matsyafed, which aims to empower fishing workers, serves as the apex federation for 687 fishermen cooperatives, 346 coastal cooperatives, 204 Inland cooperatives, and 137 Women cooperatives are also affiliated and working under the Matsyafed. Matsyafed was able to achieve an operating profit of Rs. 333.25 lakhs and a turnover of Rs. 346.31 crores for the financial year of 2021-22.

Matsyafed offers all help to make the cooperative groups work efficiently, ensure all fishermen groups participate in the coastal auctions, restructure loan payments of groups with pending loans by implementing bridge loans, and make loans and benefits available to everyone in the community.

An amount of 167 crore rupees was from 2016 to 2022 as interest-free loans for buying fishing equipment, benefitting 38000 fishermen. As part of the self-employment loan scheme, 14 crores have been distributed to 1000 fishermen as of now.

From 2016 to 2022, 360 crores has been disbursed to 1,20,000 beneficiaries till date under the microfinance loan category. The intervention in this field has been strengthened by increasing the loan amount from 25000 to 50000. An amount of 123 crores were disbursed as interest-free loans to 69000 women engaged in the fishing trade.

Even when the central government cut off the state's kerosene share, more than 15000 fishermen groups benefitted from over 250 crores issued under the subsidised kerosene rates by the state. Under the Fishermen's Debt Relief Scheme, more than 300 beneficiaries' debts were written off and the accident insurance amount has been increased from Rs.5 lakh to Rs.10 lakh.

The state government has always kept the fishing community close. The kins of those who died or went missing in the Ockhi disaster were offered jobs in Matsyafed and those kins with nursing qualifications were given jobs as staff nurses in the health department by the state. Steps are also being taken to terminate the loans through a one-time settlement scheme for those fishermen whose Kisancards have expired. Cash awards are being given to the children of fishermen who have scored high marks in the SSLC and Plus Two exams.

**Matsyafed was able to achieve an operating profit of Rs. 333.25 lakhs and a turnover of Rs. 346.31 crores for the financial year of 2021-22.**

**When the diesel price hike adversely affected the fishing community, Matsyafed took drastic measures to distribute diesel at lower costs through its pumps. It also ensured lower water pollution by distributing petrol engines.**

Base stations were begun in various districts of the state for the storage of fish. Mobile fish mart initiatives like Anthipacha ensure fresh fish to the consumers. Along with this, the State Service Co-operative banks and groups also launched fish marts in the state on a franchise arrangement. Online fish marketing has also been made available for customers to access fresh fish and fish products.

When the diesel price hike adversely affected the fishing community, Matsyafed took drastic measures



to distribute diesel at lower costs through its pumps. It also ensured lower water pollution by distributing petrol engines. We are able to support our fishermen community in their hardships and inadequacies even when foreign trawls and contraband nets and other machinery are shovelling up even the tiny fishes from the bottom of the sea. The government is doing its best to create a positive intervention to get rid of kerosene black marketers, intermediates in fish marketing, and usurers.

No development will become meaningful unless the fishermen's economical, financial, and socially backward statement is improved. Thus, the welfare schemes and development activities conducted by the state to recognise, improve and promote the fishing community will definitely continue. ■



Dr Adeela Abdulla IAS  
Director of Fisheries

# Diving into newer horizons

The safety of fishermen is the priority of the government of Kerala. Steps have already been taken to ensure life safety equipment on all fishing vessels.

As part of modernising fishing vessels, the distribution of mounting-type GPS systems for traditional boats is in progress. An insurance scheme is also being implemented for the fishermen and their working tools, including their boats and engines. Steps are being taken to implement modern systems at all the harbours in Kerala.

The modernisation plans implemented in the fisheries sector of Kerala in the 1960s with the cooperation of Indo-Norway led way to big changes. But after that, the modernisation of fishing vessels has not moved forward on a large scale in the state. The low fish availability in coastal waters, high fishing pressure, rising kerosene prices, and climatic changes causing conditions like turbidity in sea waters are all rising reasons to better prepare traditional fishermen for deep sea fishing. The government is aiming for a more secure, economical and sustainable modernization in the sector.

The safety of fishermen is the priority. Steps have already been taken to ensure life safety equipment on all fishing vessels, deliver timely weather warnings to the fishermen, and coordinate sea rescue operations. Three regional control rooms centred around fisheries



**The ambulances have been able to rescue more than a thousand lives by now. It is commendable that this is the first initiative in the whole country.**

stations such as Vizhinjam, Vypin, and Beypur and one master control room focused around the Directorate of Fisheries are functioning at this time. To ensure primary medical treatment and to perform rescue operations for those fishermen caught in sea accidents, three marine ambulances are operating from Thiruvananthapuram (Vizhinjam), Ernakulam (Vypin), and Kozhikode (Beypur). The ambulances have been able to rescue more than a thousand lives by now. It is commendable that this is the first initiative in the whole country.

### **Improved Performance through Advanced Technology**

As a part of modernising fishing vessels, the distribution of mounting-type GPS systems for traditional boats is in progress. This will help the fishermen to know the exact direction of the sea and to accurately identify the availability of fish in a region. The plan is to provide these GPS systems to all traditional vessels, in phases. The distribution of insulated ice boxes to bring ashore the caught fish intact is also in progress. This will be ensured in all vessels, resulting in better prices for the fish caught, and quality fish for the consumers.

Fishing methods that are more profitable but not detrimental to the resources will be encouraged in the coming years. Using square mesh cod ends/ Turtle exclude devices in troll nets will help the

## **The scheme of providing 10 deep-sea fishing boats to traditional fishermen to encourage and promote deep-sea fishing is also in full swing.**

small fish caught in the nets to escape back into the sea, to prevent other sea creatures from entering the nets and to save creatures such as turtles. Measures are being taken to transform fish into a value-added consumer good and to increase its export. The government is also encouraging boat owners to arrange toilets in the vessels and to install slurry ice units or to shift to other modern ice units by providing them subsidies.

### **Changing with the times**

Taking into account the lack of availability, price hikes and emission factor of kerosene and its environmental pollution, it is important to use more economical non-kerosene engines instead. The kerosene engines will be shifted to non-kerosene engines in step-by-step phases. As a first step to this transformation, using LOT model LPG kits to work the engines using LPG will help to reduce the kerosene usage without eliminating the kerosene engine. This will undoubtedly create a huge revolution in this sector. The government is also considering implementing subsidies for the conversion of the current kerosene engines to petrol /diesel engines.

The scheme of providing 10 deep-sea fishing boats to traditional fishermen to encourage and promote deep-sea fishing is also in full swing. The cost of one deep sea fishing unit is around 1.5 crores. Of this, 28.8 lakhs are central government subsidy, 19.2 lakhs are Kerala government subsidy and 30.6 lakhs is an additional fund of the state government. The rest of the amount for the beneficiary share will be availed through loans from KFC.

An insurance scheme is also being implemented for the fishermen and their working tools, including their boats and engines. Plans to implement insurance schemes for all the traditional fishing vessels in the state are also being considered. Accidents while fishing often leaves the fishermen holding onto their vessels for fear of losing them, resulting in heavier casualties. Reluctance to abandon vessels increases the severity of the hazard. Providing insurance to all vessels can help reduce this.

Steps are being taken to implement modern systems at all the harbours in Kerala, including setting up chill rooms and increasing storage spaces. Attention is also being given to making harbours more women-friendly. By implementing the fish quality assurance act, steps are being taken to ensure the best prices for fish for the fishermen. ■



Santhosh Kumar S  
State Coordinator, Punargeham Project

# Spreading smiles along Kerala coasts

Punargeham is an ambitious, Rs 2450 crore project of the Government of Kerala intended for the rehabilitation of fishermen's families who live within 50 meters from the high tide line to safe dwelling places.

To improve the living conditions of fishermen's families, it was essential to provide them with safe homes in safe places. It is this eventuality that led us to the scheme Punargeham. The scheme was launched on March 5, 2020 and is aimed to complete in three years. It is also the only scheme of its kind in the country.

Punargaeham is an ambitious, Rs 2450 crore project of the Government of Kerala intended for the rehabilitation of fishermen's families. The fishermen community is responsible for an influx of Rs 6971 crore worth of foreign money into our economy. Yet, their social and economic status remains inferior. It also remains a grim fact that the average per capita income of the fishing communities is less than half of the average per capita income of the general category. In order to improve their living conditions,

it was essential to provide them with secure home at safer location. It is this eventuality that led us to the scheme Punargeham. The scheme was launched on March 5, 2020, and is aimed to complete in three years. It is also the only scheme of its kind in the country.

According to a survey conducted by the Fisheries department along the coastline of Kerala during 2018, there are as many as 18,685 families residing within 50 meters of the high tide line (HTL). Out of this, 3,367 families reside within 10 meters of HTL and one third of them are in Thiruvananthapuram. As a civil society, it is our responsibility to rehabilitate them to safer zones.

### Objectives:

- To rehabilitate all the families residing within 50 meters of HTL to safe regions
- To prepare a buffer zone along the coast with a green shield

### Who can join the scheme?

All families residing within 50 meters of the high tide line along the coast are the beneficiaries of this scheme. Those who hold separate ration cards and live in the same house and those who are included in the same ration card but live with their parents or separate for not having their own house will be treated as separate families and financial assistance will be granted accordingly. The first priority will be the owner of the land and house. Priority will be given to families that reside in regions that are highly vulnerable to sea erosion.

### Project components

1. Beneficiary can find land and constructs house individually utilizing the Government grand
2. Rehabilitation by acquiring government/private land and constructing building complexes at government expense.

**Table 1. District wise achievements**

District	Willing to relocate	Land price finalised	Registration completed	House construction completed
1 Thiruvananthapuram	4044	1219	1023	507
2 Kollam	526	383	343	281
3 Alappuzha	1182	813	694	446
4 Ernakulam	152	85	85	54
5 Thrissur	462	360	332	256
6 Malappuram	1175	428	286	153
7 Kozhikode	291	114	112	79
8 Kannur	307	182	165	80
9 Kasargode	536	277	201	39
<b>Total</b>	<b>8675</b>	<b>3861</b>	<b>3241</b>	<b>1895</b>



3. Rehabilitation by the construction of small flats by resident groups formed by beneficiaries
4. Rehabilitation by the beneficiary buying land and house individually utilizing the Government grand.

### Project estimate and financial assistance

The project outlay is estimated at Rs 2450 crore. Of the total fund, Rs 1398 crore comes from the Chief Minister's Disaster Relief Fund and the remaining Rs 1052 crore comes from the budget allocation for the state fisheries department. Maximum financial assistance granted through this scheme is Rs 10 lakh, which includes Rs 6 lakh for purchasing land and Rs 4 lakh for the construction of the house. Meanwhile, the beneficiaries who purchase land for less than Rs 6 lakh can utilize the remaining amount for the construction of the house. Land registration costs and stamp duty will be borne by the state government. All financial transactions related to the project will be sanctioned to the bank account of the beneficiary/landowner.

### Achievements so far

Total beneficiaries – 18685  
 Families willing to relocate -- 8675  
 Families who have acquired land – 3861  
 Those who have completed registration – 3241  
 Those have completed house construction – 1895  
 Families who were rehabilitated to newly constructed flats – 390



**Table 2. Flat apartment's handed over**

	District	Place	Number
1	Thiruvananthapuram	Karode	128
2	Thiruvananthapuram	Beemapalli	20
3	Kollam	QSS Colony	114
4	Malappuram	Ponnani	128
	<b>Total</b>		<b>390</b>

**Table 3. Flat apartments administrative sanction received and at different stages of construction**

	District	Place	Number
1	Alappuzha	Mannumpuram	228
2	Malappuram	Niramaruthur	16
3	Thiruvananthapuram	Muttathara	400
4	Thiruvananthapuram	Karode	24
5	Thiruvananthapuram	Valiyathura	192
6	Malappuram	Ponnani	100
7	Kozhikode	West Hill	80
8	Kasargod	Koyippadi	144
	<b>Total</b>		<b>1184</b>

**Table 4. Projects under pipeline**

	Place	Number
1	Muttathara	128
2	Kochu Veli	168
3	St. Anthony's	24
	<b>Total</b>	<b>320</b>

### What's next?

In the first phase, the emphasis is on rehabilitating the 8675 families that have expressed willingness to be relocated. Houses and housing complexes will be constructed on land acquired by the government at various places for this purpose. Families living under the threat of severe sea erosion will be given top priority and rehabilitated in flats.

A 100-day program, Jwala 2022, was conducted from 2022 September to December in various districts to help families that expressed willingness to find land on their own to build houses. Through this program, which witnessed the cooperation of legislators, elected representatives, and social activists, the Government aimed to help as many families to find and acquire land. The Government assures that fishermen will not be forced to move away from the coasts under the Punargeham scheme. Moreover, the ownership of the existing land will be retained in their name. The Government is obliged to ensure the safety and social security of the fisher folks. The government is always by their side to take care of their life, livelihood, properties, and education. ■



Jayashree G

Deputy Director PMC Ockhi Cell

# Value-Added fish products and seafood restaurant

**T**he cyclone Ockhi battered Kerala on 2017 November has badly affected the fisheries sector. The state government is implementing various rehabilitation projects to triumph over the impacts caused by the Ockhi disaster. Many rehabilitation projects are implemented by the government besides the welfare projects aimed for the upliftment of life standards of the fisherman.

A modern marian food processing unit and sales outlet is opening at Vizhinjam as part of helping the fishermen community who had been badly affected by ockhi. This also aims to restore the life circumstances of the fishermen and to give a sustainable source of income to the fisherman families. The project is being implemented at a cost of 4 crore rupees. The amount has been allocated from the Chief Minister's Distress Fund Relief.

The government envisages to ensure the production of ready to cook and ready to eat fish products through food processing units. The processed products will be marketed through sales outlets. Besides that, all the varieties of sea foods can be

served at seafood restaurants also. This project is implemented through Kerala State Coastal Development Corporation.

The dependents of the deceased or missing in the Ockhi disaster are the beneficiaries of this project. The dependents will be appointed in the marine food processing unit. In relation to this, 20 people are chosen in the first phase of the project. The selected staff will be given proper training related to the fish processing. The fish procured directly from the harbor will be transferred to the processing unit without any depreciation. After the pre-processing and processing works, the trained staff will make available value added fish products to the beneficiaries. The selection of staff for the marketing outlets will be carried out through (SAF) Society for Assistance to Fishermen. The construction work of the fish processing unit and sea food restaurant has been completed. Following the government direction, the fish processing unit will be handed over to MATSYAFED and the sea food restaurant to the Tourism Development Corporation. ■



# (SAF)E for every woman

The Society for Assistance to Fisherwomen (SAF) is an organization that functions under the Fisheries department and aims for the economic growth, development, and empowerment of the fisherwomen in Kerala.

SAF's major responsibility is to develop and implement alternative life resource programmes for women. For the functioning and existence of women's associations and further development of new micro businesses, Theeramythri scheme, implement many programmes, through the SAF organization. The organization is implementing many new initiatives in every coastal district in Kerala, including the Kottayam district. The SAF units, overcoming the COVID-19 pandemic, had a turnover of Rs 84.01 crore in the year 2021-2022.

## **Theeramythri**

About 8000 coastal women have made their income and almost 1600 small-scale businesses are functioning with Theeramythri which helps in assisting by giving loans and capacity-building training to help women start new businesses.

Tailoring and Garments, Fish and Fish processing, Food and Food Processing, Supermarket and Retail stores, Services, and Others are the 5 areas working under the Apex Federation, which operates for the smooth functioning of SAF. About 450 groups are members of the Garments category, which accounts for the most units.

The Theeramythri units, having members of 2 to 5 people, struggling with the COVID-19 pandemic, were given a loan of up to Rs 2 lakh (50000 each per person) in a three-year payback scheme. 498 Theeramythri units were given a long-term loan of Rs 6.64 crores by the Kerala Bank.

### JLG scheme for Job Safety

The scheme, through SAF, aims to provide capital for economically backward fisherwomen. A joint liability group, comprising 5 fisherwomen of various work areas in fishing, from the districts of Thiruvananthapuram, Kollam, Alappuzha, Ernakulam, Thrissur, and Kasaragod were created. A member, allotted with a working capital of 50,000 Rs per group (Rs 10,000, each) as an interest-free revolving fund and has had a successful run with 100% repayment.

A sum of Rs 9 crore is being revolved within 950 groups through the scheme and an amount of Rs 2 Crore was allotted to 400 JLG units consisting of 2000 fisherwomen in the year 2021-2022.

### Vending KIOSK System

The Hygienic Refrigerated Mobile Fish Vending KIOSK is an initiative conceived by the Fisheries department for improving the business of fisherwomen and providing the best quality fish to the consumers at affordable pricing, with the best utilization of freezing technique. This provides the consumers with the best quality fish and fish products and also ensures adequate training for women in the processing and hygienic treatment of the fish.

About 20 units of Frozen Mobile KIOSKS were supplied to several groups of Theeramythri units in various districts, with the capacity to store 100 Kg of fresh, frozen fish in different compartments. 43 recipients were selected from the districts of Kollam, Kottayam, Alappuzha, Ernakulam, Thrissur, and Kozhikode. The KIOSKS are distributed among the Fisherwomen group comprising two members.

### Seafood Restaurants

The Theeramythri Seafood restaurants were created by the Kerala government, to improve the business and lives of working fisherwomen and provide the best quality food products to the public at affordable pricing.

These seafood restaurants are being operated at harbours and tourist destinations throughout the state with the aid of Kerala Bank.

### Branding and Marketing

SAF gives special attention to the marketing of SAF's products. They conduct fests and incorporate the

## About 20 units of Frozen Mobile KIOSKS were supplied to several groups of Theeramythri units in various districts, with the capacity to store 100 Kg of fresh, frozen fish in different compartments

units in the exhibition to market their products. The fests saw a turnover of 45.98 Lakh Rs from 32 commercial stalls and 21 food courts. SAF participated in the India International Trade Fair Festival 2022. 36 products prepared by the SAF units in the fish, food, and handicraft section were up for sale and exhibition in the fest, winning the second exhibitor award in the commercial section.

### Online Marketing and Sales

Social media platforms such as WhatsApp, Facebook, etc. were used to show the presence to bring the 570 SAF units to the online marketing and sales system. The techniques like registration, license, QR code, and Google mapping were made available. The sample inspection, labelling, packing, and designing are under process. Also, advertisements, online posters, and short videos were made. Initiatives have been taken to start SAF online app has begun developing with delivery partners being identified for online delivery, which increased the units sale.

### Digital Media and Marketing Online Training

A 3-month online coaching in Digital Media and Marketing was given by ASAP, under the Higher Education Department, to the 30 selected women graduates from the fishing families. A six-month, free practical training was given, under the SAF units, to those who completed the training.

### "Suchithwa Saagaram Sundara Theeram"

SAF partnered with the "Suchithwa Saagaram Sundara Theeram" project, which aims to restore the ecosystem by making the sea and seashore completely free of plastic. As part of the program, 15 fisherwomen volunteered to sort out and give the plastic waste collected from the sea to the shredding machine. The second stage aims to make the seashore plastic free and the third stage aims to expand this to the other 20 harbours in the state, to regularly collect and treat the plastic wastes on the sea bed. ■

# Fisherfolk on the shores of relief



Smitha R Nair  
*Secretary,  
Kerala Fishermen Debt Relief Commission*

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The government of Kerala has enacted Fishermen Debt Relief Commission Act to help fishermen who are in debt after taking loans from banks, other agencies and individuals.

Loans taken from various institutions for the purposes, including purchase of fishing equipment, construction of houses, children's education, medical treatment, daughter's marriage are considered for debt relief. Over Rs 321 crores spent by Government of Kerala as debt relief.

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**Those found eligible will be reimbursed even if they have already settled the loan at the bank's insistence before getting the debt relief.**

**Accordingly, the Kerala Fishermen Debt Relief Commission was formed in 2009 with its headquarters in Thiruvananthapuram. The aim was to free the fishermen from debts who earn their living by fishing in sea as well as inland waters.**

Fishermen's life is a constant battle against odds. They battle harsh weather and turbulent seas on a daily basis for survival. Despite playing a crucial role in the state's economy and influx of foreign exchange, the fishermen community is still suffering as the uncertainties in their vocation and income drive them to debt traps.

The state government enacted the Kerala Fishermen's Debt Relief Commission Act in 2008 in a strong desire to address the fishermen's woes. Accordingly, the Kerala Fishermen Debt Relief Commission was formed in 2009 with its headquarters in Thiruvananthapuram. The aim was to free the fishermen from debts who earn their living by fishing in sea as well as inland waters. It has a retired high court justice as chairperson and a fisheries official, a social activist, an economist and three representatives of fishermen community as members.

Fishermen who have taken loans from various financial institutions till December 31, 2007 will be given a debt relief of up to Rs 75,000 in principal and 25% of outstanding interest as on December 31, 2009. For loans distributed from January 1st, 2008 to December 31, 2008 relief of maximum Rs 1 lakh and 25% outstanding interest as on March 31, 2018 will be given.

### Criteria for debt relief

Applications were received till 31 March 2019 for loans taken till 31 December 2008. Loans taken from various institutions for the purposes, including purchase of fishing equipment, construction of houses, children's education, medical treatment, daughter's marriage are considered for debt relief. The income cap for granting debt relief is fixed at Rs 60,000 for individuals and Rs 2 lakh for families. Documents that are required to be submitted to check the eligibility include copies of Fishermen Welfare Board membership and ration card, income certificate and certificate from the lending institution concerned. Loans taken through Matsyafed under NDDC Loan, HUDCO Home Loan, NBCFDC and NMDFC schemes and loans provided from Fishermen Development and Welfare Cooperative Societies, cooperative banks, nationalized and scheduled banks as well as public sector finance institutions will be considered for debt relief.

### Crores given as debt relief

Till date, Rs 321.36 crore was granted as debt relief. Eligibility lists from 1 to 56 have been sent to the government recommending debt relief. Those found eligible will be reimbursed even if they have already settled the loan at the bank's insistence before getting the debt relief. A refund list has been prepared for this purpose. ■

*Details of eligibility lists forwarded to the government with recommendation to grant debt relief:*

Lending institution	No. of beneficiaries	Amount recommended
Cooperative bank	94	44, 22, 340/-
Matsyafed	127	27, 28, 383/-
Other finance institutions	3	82, 048/-
Nationalised/scheduled banks	12	7, 44, 872/-
<b>Total</b>	<b>236</b>	<b>79, 77, 643/-</b>



M. Thajudeen

*Deputy Director  
Directorate of fisheries, Thiruvananthapuram*

# When oceans lead the path to development

**K**erala has a high fish consumption rate, and the annual fish production in the state is estimated to be 5-6 lakh metric tons. The inland fish production is assessed at 2.25 lakh metric tons. During 2020-21, the state exported 1.57 lakh tons of fish. In the same period, marine fish production increased to 6.1 lakh tons. However, it must be noted that more than 2 lakh tons of fish are imported from neighbouring states for domestic consumption. This emphasizes the need for additional production of 2-3 lakh tons of

fish for sustainable development of the sector. Deep sea fishing and aquaculture are the way forward.

The main obstacles in promoting deep sea fishing are the exorbitant price of fishing boats equipped with cutting-edge technologies, operations and maintenance expenses, lack of trained crew, and absence of advanced technologies, and the price fluctuation caused by modernization.

Right now, inland fishing is conducted with ordinary boats. Around 34000 motorized traditional boats are operating from the state. Out of this, only 500



traditional boats go beyond 50 nautical miles. Apart from this, more than 600 deep-sea fishing boats registered in Tamil Nadu operate from Kochi.

### Deep Sea Fishing

The following clauses are mentioned in the Kerala State Fisheries Policy of 2019 regarding deep sea fishing:

- Adequate pressure will be put on the Central Govt to take necessary steps in order to not give permission to foreign trawlers and local corporate vessels to engage in deep-sea fishing and to not give them access to India's marine borders.
- Necessary encouragement will be given to fishing vessels for multi-day offshore fishing in order to shift the current pressure of fishing from the overexploited

continental shelf area to the continental slope area.

- Financial assistance and technical training in deep-sea fishing methods such as tuna long lining, gill netting, squid jigging, etc will be provided to traditional fishermen collective groups/cooperatives.

### Possibilities for Kerala

The Arabian Sea is rich in high-priced seafood like squid, tuna, low-priced lampreys, and sea shrimp. While promoting the use of boats that catch high-value fish, there's a need to encourage boats that can catch up to 10 lakh tons of low-value fish like lampreys. The fishing community in the southern parts of the state and the limited number of fishermen in the district of Kanyakumari are currently pursuing deep-sea fishing in unequipped boats and vessels. Despite the 34000 motorized conventional fishing vessels in the state, only around 500 of them pursue fishing outside 50 nautical miles. It is estimated that around 6 lakh tonnes of high value squids, 2 lakh tonnes of tuna and 10 lakh tonnes of low priced deep-sea prawns and a large collection of other fishes can be found in the deeper sections of the Arabian Sea. The fishing community can be encouraged to pursue fishing the highly valued tuna and squids from the deep-sea by providing deep-sea fishing vessels and equipping and training them for it. Of this, the 10 lakh tonne availability of Myctophids-Lantern Fish can also be utilised better.

The scheme to provide ten deep-sea fishing boats under the Pradhan Mantri Matsyasampath Yojana has been approved. The project aims to encourage fishermen to give up unsafe traditional boats and opt for mechanized boats. The project will be implemented in Thiruvananthapuram, Kollam, Ernakulam, Kozhikode, and Malappuram districts in the first

phase. The process of selecting beneficiaries is progressing.

The central government has approved Rs 1.2 crore as project cost per boat. There is a subsidy of Rs 48 lakh from the State and Central government. However, more than this amount is needed to build a boat installed with advanced technologies. A boat that is 22.7 meters long, 6 meters wide, and 3 meters deep, has 230 horsepower, a -4 degree Celsius refrigeration facility, and an 18-ton storage capacity that costs Rs 1.5 crore.

Considering this aspect, the State Government announced an additional grant of Rs.30 lakh (30% of the beneficiary's share) to each group and allocated Rs. 3 crores. Thus, the beneficiary share has been brought down to Rs.71.4 lakhs. It is also agreed to allocate 85% of the beneficiary share as a loan from the Kerala Financial Corporation.

High-value fish can be stored at low temperatures without losing their quality, facilitating transportation and converting these to value-added products that can be marketed in domestic and international markets. This will result in increased earnings and open new job opportunities. ■





G. Ashok Lal

General Manager,

*(Project Financing, Investment Promotion, Special Projects, and Planning)*  
Kerala State Industrial Development Corporation

# Inviting entrepreneurs

The Kerala state has proven its excellence in the area of traditional food processing. The government of Kerala has taken the necessary steps to set foot in the seafood park initiatives and marine food processing sector by understanding the potential.

**K** SIDC is developing a Mega Food Park at IGC (Industrial Growth Centre) Pallippuram, Cherthala, focusing on the seafood processing sector, with grant assistance from the Ministry of Food Processing Industries (MPI).

Seafood is one of the most popular global cuisines and has a high market value. By the year 2030, it is estimated that this sector will witness a growth of 14%, cumulating to 202 Million metric tons overall. Even though



## It can be said without a doubt, that the processing activities and value-added food production in the Mega Seafood Park have given a new life to the seafood processing sector.

Kerala leads in the production and exporting of fish, the processing of marine products was not efficient due to the inefficiency of the modern system. The export of fish products is twice more profitable as the export of fish and processed raw material. An increase in fish production, sustainable fish culture, construction of a new fishing centre, and value addition of fish products are a few of the many hopeful opportunities created in this sector. The state government has taken the necessary steps to set foot in this sector by understanding the potential of processing marine products.

The major stepping stone of the state in this area can be identified with KSIDC's Mega Seafood park. The park is developed on 68-acre land at the Industrial Growth Centre at Pallippuram, Cherthala. Through the Mega Sea Food Park, the KSIDC aims to create infrastructure facilities in the marine product processing sector. Entrepreneurs should have the foresight to evaluate the various facets of value-added areas and make use of the numerous possibilities created.

More than 30 companies have been permitted land in the Mega Sea Food Park. Six sea product processing units have started functioning. The entrepreneurs have admitted the huge opportunity that comes with the value addition of seafood products. The highest quantity of processed marine products from Kerala is exported to America. Now China, Italy, Japan and other European countries joining the mix. As per the statistics of the Cochin port, in the year 2020-21, about 1.91 % of the total export goods are credited to seafood, which accounts for 1,50,640 tons. The container exports had a spike of 25.87%, increasing from 16.97 lakh tonnes to 21.36 lakh tons in the year 2020-21. America, being the biggest market (3,42,572 metric tons) imported Frozen prawns. Other figures include China (1,25,667 metric tons), European Union (90,549 metric tons), South East Asia (44,683 metric tons) Japan (38,492 metric tons), and Gulf Countries (37,158 metric tons). According to the UN committee's Bi-annual report, The State of World Fisheries and Agriculture, Asia is the largest contributor to the growth of the global export and it will be 52% in the additional export quota by the year 2030. The Nation and the state can both be benefited, if they can give more attention and importance to the sector.

In addition, a new section of urban consumers is prompted in Kerala, who are ready to buy ready-to-serve products. According to the reports of the Marine Products Export Development Authority (MPEDA), processed products such as the ready to eat, ready-to-cook, ready-to-fry, thaw-and-eat, heat-and-serve, retail raw branded, and other high-valued fish medicine, beauty and cosmetic products are all considered as value-added products.

Experts point out the possibilities and opportunities for the Processed seafood business entrepreneurs in Kerala if they come to the sector of value-added products. It can be said without a doubt, that the processing activities and value-added food production in the Mega Sea food Park have given a new life to the seafood processing sector. ■

**An increase in fish production, sustainable fish culture, construction of a new fishing centre, and value addition of fish products are a few of the many hopeful opportunities created in this sector.**



Mahesh. S

*Joint Director  
Department of Fisheries (Inland)*

# Let's brand Kerala's fish

In Kerala, which has a high per capita fish consumption, there are significant marketing opportunities for branded value-added fish products. By branding value-added products, fish farmers get the opportunity to produce and market the products by eliminating intermediaries.

**K**erala is one of the country's biggest consumers of fish and fish products, and these are made available at the consumer's doorsteps. Marketing of these has become a profitable business venture in the state.

The advent of value-added fish products has increased the demand and consumption of fish worldwide. These products have found a vast market in the United States, European



## If fish is marketed as value-added products, it will increase shelf life and fetch higher prices to the producers.

Union countries, and countries in the Middle East. There must be a clear understanding of the consumers and the market. Prime importance should be given to the delivery the products in attractive packets to win consumers' attention.

### Product branding

If fish is marketed as value-added products, it will increase shelf life and fetch higher prices to the producers. In Kerala, which has a high per capita fish consumption, there are significant marketing opportunities for branded value-added fish products.

The lack of proper processing facilities, excellent refrigeration systems, limitations in transportation and delivery, and to market of fish as value-added products have created a negative impact on the business.

These business ventures have the potential to create better employment opportunities and generate better revenues.

Raw fish can be packaged into

**The products should be sorted and packed in attractive packets taking into account the customers' likings, tastes, and needs.**

value-added products like fish fillets, steaks, and clean fish. Dried fish, fish pickles, fish cutlets, and fish papads can also be marketed.

### How to avoid exploitation

Kerala has an extensive and complex fish marketing network. The fish caught by the fishermen reaches the consumers through many intermediaries. By branding value-added products, fish farmers get the opportunity to produce and market the products by eliminating intermediaries.

### Let's start the preparations

Refrigeration systems and storage facilities are required for the preservation of raw materials. Extensive facilities for processing raw materials and installing quality control mechanisms are needed to produce value-added fish products. The products should be sorted and packed in attractive packets taking into account the customers' likings, tastes, and needs. Fishermen's Cooperative Societies and Fish Farmers' Cooperative Societies can be formed to procure from fish producers directly. The involvement of such societies in the procurement of fish can eliminate exploitation by intermediaries and ensure better income for fish producers.

The government can provide assistance and support to form such cooperative societies and empower them to start fish processing and production of value-added products.

We should focus on creating a fresh and unique brand for our fish products. ■



Chithra. M  
Regional Executive, ADAK

# Inland fishing in tribal regions

The government of Kerala is implementing projects like Cage aquaculture in the large reservoirs and fishling rearing in the small reservoirs.

According to the Rebuild Kerala Program, an amount of Rs 3.2 crore is being allocated for the Cage culture.

About 9.1% and 1.4% of the total population of Kerala are SC and ST categories, respectively. Wayanad, Idukki, Palakkad and Kasaragod are the districts of Kerala having the Tribal community.

The government is developing and implementing various programs to ensure economic and social upliftment and provide nutritive food for the Tribal

community who depend upon reservoirs for their living.

The projects like Cage aquaculture in the large reservoirs and fishling rearing in the small reservoirs are being implemented. The Kerala Reservoir Fisheries Development Project is being implemented in 12 reservoirs in Kerala. The working SC/ST Fishermen Cooperative Societies will be provided with fishing nets and basket boats for fishing in addition to awareness programs on fisheries protection.

Almost 5000 tribal people are fishing in the reservoirs.

Out of the 12 reservoirs, two reservoirs (Sholayar, Peringalkkoothu) are growing indigenous fishlings and the other 10 reservoirs grow carp fishlings.

By including in Rebuild Kerala Initiative and Pradhan Mantri Matsya Sampada Yojana the state government is carrying out cage aquaculture in large reservoirs. The cage culture is now being conducted in Malampuzha of Palakkad District,





## The cage culture is now being conducted in Malampuzha of Palakkad District, Pazhassi of Kannur, Karappuzha, Banasurasagar of Wayanad, Peruvannamoozhi of Kozhikkode, Kakki of Pathanamthitta.

Pazhassi of Kannur, Karappuzha, Banasurasagar of Wayanad, Peruvannamoozhi of Kozhikkode, Kakki of Pathanamthitta.

According to the Rebuild Kerala Program, an amount of Rs 3.2 crore is being allocated for the Cage culture and this includes 90 people. The programme additionally includes 90 cages and related technologies invested in GIFT, Anabas and Pangasius fishlings. The beneficiaries received an income of Rs 50 lakhs by catching 27.8-ton fish from the cage.

The aquaculture is being carried out in 100 cages of the Peruvannamoozhi, Banasura Sagar and Karappuzha reservoirs which were included in the Pradhan Mantri Matsya Sampath Yojana. In which there are About 300 people from SC/ST communities are the beneficiaries. Each cage grows 3250 fishlings. Up until today Rs 71 lakh was received as remuneration from 45-ton fish production in three reservoirs. There are plans to construct light fish processing units and insulated cart vehicles also.



**Up until today Rs 71 lakh was received as remuneration from 45-ton fish production in three reservoirs. There are plans to construct light fish processing units and insulated cart vehicles also.**

The employment opportunities provided by the programme fared help to overcome the various COVID lockdown-related economic difficulties. Since the program provides an extra income along with the daily job, it helps in improving the health and educational aspects of the family. By doing so, it breathes new life into the tribal community. ■

# Insurance schemes for the welfare of fisher community



Koottayi Bashir  
Chairman, Fisheries Board

The Kerala Fishermen's Welfare Fund Board was formed in 1986 in Thrissur for the economic development and social welfare of fishermen in the state. The project expanded later to include associated fishing employees. As of 2022, the board has 240974 fishermen and 78659 associated workers as its members.

The Accident Group Insurance Scheme was implemented to provide family security to the traditional fishermen of the state. All members of the Fisheries Board have been insured in this manner. The insurance premium comes entirely from the government. No amount is charged as premium amount from the beneficiaries.

The following is the financial assistance given to fishermen/ their dependents under this scheme:

- Accidental death- Rs.10 lakhs
- Missing due to accident during fishing- Rs. 10 lakhs
- Permanent and total disability - Rs.10 lakhs
- Permanent and partial disability - Rs. 5 lakhs
- Educational financial assistance to 2 children of fishermen who died in fishing accidents - Rs.5,000/person (Max Rs.10000)
- Financial assistance for medical treatment in hospital

Group Insurance scheme Financial Assistance	Fishermen		Associated Workers		Total No	Amount
	No	Amount	No	Amount		
Accidental death/Missing	184	177007000	27	24500000	211	201507000
Permanent and partial disability due to accident	15	6870000			15	6870000
Hospitalization for more than 24 hours after injury due to accident	124	3025980	19	395080	143	3421060
Educational assistance to 2 children of workers died in accident	11	112500	1	5000	12	117500
Funeral expenses	7	17200			7	17200
<b>Total</b>	<b>341</b>	<b>187032680</b>	<b>47</b>	<b>24900080</b>	<b>388</b>	<b>211932760</b>

for more than 24 hours due to accident - Rs. 25,000 (maximum)

- Funeral assistance - Rs. 2,500

Group insurance is also being implemented for those associated workers who are members of the Fisheries Board, without charging any premium amount from them. The guidelines, terms and conditions and funds are the same for associated workers except in man missing cases. The accident group insurance plan is on a one year contract basis with insurance companies for implementation.

The Fisheries Board was able to provide the following benefits under this scheme during the year 2021-2022:

## Insurance scheme for fishing vessels

The Department of Fisheries have been implementing insurance schemes for fishing vessels from the financial year of 2018-19 onwards. Full insurance coverage is provided for the hull and engine. The scheme is being implemented through the public organisation called United India Insurance, selected through e-tender. 90% of the premium amount is provided by government share and the remaining 10% beneficiary share. 1.3 percent of the fixed price and taxes is included in the premium amount.

Currently, the premium amount is fixed as per below:

Sl. No	Section	Amount allocated
1	Fishing vessels less than 10mtr long and engine power below 10 horsepower	350000
2	Fishing vessels less than 10mtr long and engine power of 10 horsepower or above	400000
3	Fishing vessels between 10-15mtr length and engine power upto 40 horsepower	600000
4	Fishing vessels between 10-15mtr length and engine power of 40 horsepower or above	800000
5	Fishing vessels between 15-20mtr length and working on engine	2300000
6	Fishing vessels above 20mtr length and working on engine	4600000

647 fishing boats in 2018-19, 858 boats in 2019-20, 926 boats in 2020-21, and 2758 boats in 2021-22 have become members under this scheme. 2crores have been assigned for this project in the current financial year.



Aneesh. P  
Assistant Director of Fisheries  
Fisheries Station, Vypin

# A shield of protection for Kerala's own army

**K**erala's fishing sector plays a crucial role in the state's economy and contributes greatly to the overall productivity figures of the country. A total of 49,244 fishing vessels, including motorized boats, are engaged in fishing activities across the state.

The lives of fishermen are often at risk as the sea turns turbulent due to bad weather. Statistics show that too many lives were lost and fishing equipment worth crores damaged in the past years.

## Fisheries stations

Fisheries stations exist in all nine coastal districts of the state. Each station is equipped with a fleet of three marine ambulances and 10 rescue boats. They function as part of the control rooms set up to issue safety warnings and coordinate rescue operations. The master control room functioning in the fisheries directorate coordinates the rescue operations through the regional control rooms at Vizhinjam, Vypin, and Beypore. These control rooms also pass on the warnings issued by the state disaster management authority to the fishermen.

These marine ambulances and rescue boats have carried out a total of 1938 rounds of patrolling and 481 rescue operations in the current financial year. As a result, a total of 4979 fishermen were also able to be saved.

## Fisheries stations in Kerala

District	Fisheries Station
1 Thiruvananthapuram	Vizhinjam
2 Kollam	Neendakara
3 Alappuzha	Thottappally
4 Ernakulam	Vypin
5 Thrissur	Azheekode
6 Malappuram	Ponnani
7 Kozhikode	Beypore
8 Kannur	Kannur
9 Kasargod	Keezhoor

## Marine Ambulances

Marine Ambulances were introduced with the aim to improve the efficacy of rescue operations by providing first aid to the affected at sea itself. When commissioned, it was the first-of-its-kind service in the whole country. There are three types of marine ambulances, namely Pratheeksha, Prathyasha, and Karunya. They were built by Cochin Shipyard with inputs from various central and state agencies concerned. The marine ambulances function out of Vizhinjam, Vypin, and Beypore fisheries stations.

Fitted with 700 horsepower twin engines, the marine ambulances can reach up to a maximum speed of 14 nautical miles per hour. A marine ambulance has a crew comprising a captain, chief engineer, oiler,

seaman, and two rescue guards, who are always on standby for rescue operations. The marine ambulances are equipped with the most modern navigational and communication systems to search for and find fishing boats that met with accidents. They are also equipped with the best first aid facility available today. The marine ambulances have completed 848 rounds of patrolling so far. As many as 1060 fishermen were rescued in 172 operations. Many lives could be saved as a result of providing first aid to the injured at sea. In emergency cases, the service of the Indian Navy and Indian Coast Guard are also being sought to haul the fishing boats safely back to the shore.

A marine ambulance is also equipped with an oxygen concentrator, cardiac monitor, manual suction apparatus, BP apparatus, pulse oximeter, glucometer, spine board, immobilizers, portable oxygen cylinders, ambu bag, and wound care supplies. The service of two paramedic staff is also made available round the clock in the ambulance.

## Marine Enforcement Wing

The Marine Enforcement wing is part of the fisheries stations. The wing is comprised of officers on deputation from the police department. Armed with the latest technology, the State Fisheries Department is there to provide protection to Kerala's own army at sea. ■



Ahammad Devarkovil

*Minister for Ports, Museum, Archaeology and Archives*

# Vizhinjam: Limitless possibilities ahead

It is doubtful whether the general public of our state has awareness about the potential of the upcoming Vizhinjam International seaport and the great benefits that this port will bring not only to our state but to the entire country.

It is high time that the dream of a big port that was conceptualized way back by the rulers of Travancore. We are living in a time when huge mother ships have become the medium of transportation for international trade. But the lack of a transshipment port, which could accommodate huge mother ships has been causing us to lose out on the valuable foreign exchange of our country. Vizhinjam International Seaport is the answer to the above shortcoming.

### **Vizhinjam into a reality**

Bringing the concept of the Vizhinjam port to reality is a long cherished dream. After numerous and tiring studies and follow-ups, we could prepare a detailed project report to develop the port on a public-private partnership. The project proposes a total investment of Rs 7,700.00 crore out of which Rs 4,428.00 cr. is being spent by the state government. The Central government has also agreed to provide a grant of Rs 818.00 crore under the Viability Gap Fund (VGF) scheme. The concessionaire must spend the remaining and undertake construction, operation, and maintenance of the port. From the above, it is amply clear that the Vizhinjam port does not belong to any private company; but to the state and the Country. Vizhinjam port also holds the special distinction of being the first port in the country for which the central government approved a

viability fund for its development and operation. M/s. Adani Vizhinjam Ports Private Limited is only a developer and a fixed-term operator selected by the State government through an International competitive bidding process. Commercial Port Operation of this scale is driven based on International trade scenarios and requires a dynamic system, unlike any other sector. It may not be the right strategy for the government to run a port that has to compete with similar ports at the international level. This is where the Government resorted to this PPP model of development and operation, where the concessionaire was selected based on prescribed qualifying criteria. As per the agreement, this dream project should have been completed by 2019. But various technical issues and other factors such as adverse weather conditions, COVID 19 – pandemic, and failure in sourcing rock by the Concessionaire affected the progress of the construction works. Ever since Pinarayi Vijayan-led government came into power in 2021, the progress of the project is being closely monitored and efforts are being taken to complete the project without further delay. It was at this time that an unfortunate agitation and the subsequent stalemate occurred in the construction. However, the government led by Chief Minister Pinarayi Vijayan could appease the agitating groups and could end the stalemate.

Scientific studies show that the Vizhinjam port will be construction with the least environmental impact. The Ministry of Environment, Forest and Climate Change (MOEF&CC) has accorded environmental clearance(EC) for the project after carefully examining the detailed project report and related study reports. Complaints were filed against the EC before the Supreme Court and National Green Tribunal(NGT). Under the instructions of the Supreme Court, the principal bench of the National Green Tribunal critically examined these complaints in detail. Even though the construction is done in the area with the least environmental impact, the National Green Tribunal issued a directive to constitute an expert committee to examine, evaluate and suggest remedial measures in the event of any coastal erosion on either side of the port due to its development. While the NGT's suggestion was to monitor the impact in coastal areas within 10 kilometers on either side of the project site, the state government decided to extend the monitoring to coastal areas up to 20 kilometers.

The National Institute of Ocean Technology was assigned the task of collecting data, and satellite imageries, analyzing the same, and submitting the reports before the expert committee of the NGT. The committee would forward these reports to the Vizhinjam International Seaport Limited company and the same is published on the Company website and the websites of MOEFF & CC and the government of Kerala for the awareness of the general public.

There is no doubt that the global phenomenon of climate change has vastly affected the marine ecosystem as well as the entire coastline. This is also the main reason behind the frequent cyclones, events of sea erosion, and accretion experienced along the

Kerala coasts. Our best efforts are to minimize any impact as possible.

### All set to take the big leap

Vizhinjam port is expected to give a fillip to the economic, industrial, and tourism sectors of the state. Apart from the direct jobs, we expect the port to bring indirect economic growth to the State and the Country. The government proposes to employ local people to the extend possible. It is a cause for concern that the local people do not have the required technical skill required for highly mechanised jobs related to ports. To tackle this issue, steps have to be taken to skill the local populace, particularly youngsters to prepare them for taking up such skilled jobs. So it is decided to set up a Community Skill Park (CSP) through ASAP(Additional Skill Acquisition Programme) under the Higher Education Department, government of Kerala. The construction of the building for this centre has been completed. M/s. Adani Vizhinjam Ports Private Limited, the construction company of the port will be the training partner at the centre. They will train local people in the vocations needed for the port and empower them to take up skilled jobs in the sector. The company has also offered to take over several projects, including the logistics park, which could provide job opportunities to the local people. Apart from this, when the port comes up, many warehouses, hotels, and housing complexes will have to be opened. This is also expected to bring significant improvement to the state's economy and generate direct and indirect employment opportunities. We will also be able to start an array of related industries across the state.

The tourism sector will benefit greatly from the arrival of cruise ships and crew change activities. The central government has granted approval for the construction of an outer ring road at a cost of Rs. 6000 crore for the port. There is great scope to start an industrial corridor on either side of this road, which will propel the industrial and commercial sectors of the state.

Vizhinjam port is located 10 nautical miles away from the international shipping route through which 30% of the world's freight movements happen. Moreover, Vizhinjam is one of the few places in the world where the sea reaches a depth of 20 meters at just one kilometer from the shore. The uniqueness and potential of Vizhinjam lie in these features. It is expected that the port can handle 10 lakh containers in the first phase itself once it becomes operational. In these circumstances, we must try to adopt policies taking into account the economic growth that is on offer once these businesses come to our state.

There are as many as 17 small ports in our state. Of these, Beypore, Kollam, and Azheekal ports have adequate basic infrastructures. But freight ships seldom come to these ports. When Vizhinjam port becomes operational, these small ports will also get a chance to develop through coastal shipping. We have already initiated plans to make this happen. We hope that through concerted efforts Vizhinjam port will be able to contribute to the overall development of the state. For this, the support and cooperation of every citizen are indispensable. ■



Dr Jayakumar

Chief Executive Officer

Vizhinjam International Seaport Limited

# Vizhinjam port – Realities and facts

Dr. Jayakumar, Chief Executive Officer of the Vizhinjam International Seaport Limited says clearly that the allegations against the port are baseless.

He elucidates that the project is not responsible for coastal erosion. With the implementation of Vizhinjam port, it offers large-scale automation for quick turnaround of vessels with state-of-the-art infrastructure to handle Mega max containerships.

The Vizhinjam International Seaport project was envisaged in the 1990s. In India, no transshipment ports facilitate the movement of bulk container ships carrying as many as 24500 containers. About 30% of the world's freight movement through the seas happens through the international shipping channel passing through the southern part of India. Vizhinjam is hardly ten nautical miles away from the shipping channel. Currently, the Indian transshipment takes place at Colombo, Singapore, Salalah,

## The expert committees appointed by NGT did not report that the coastal erosion at Beemapalli, Valiyathura, and Shankhumugham was due to the construction of the port.

and Dubai, and the country's loss is estimated at Rs 2500 crore annually. However, there are many allegations against Vizhinjam Port. Let's analyze them one by one.

### Allegation 1

The project is responsible for coastal erosion at Valiyathura and Shankhumukham.

#### FACT

An expert committee and the shoreline monitoring cell appointed by National Green Tribunal visit the project area and the coastal areas located 20 km to the south and north of the project site every six months to review the situation.

The expert committees appointed by NGT did not report that the coastal erosion at Beemapalli, Valiyathura, and Shankhumugham was due to the construction of the port.

**The scientific reasons are listed below:**

1. The coastline to the North and South of the project site are in a straight line. The region from Azhimala cape to Kovalam cape is the form of a pocket (curved inward). Removing sand within this pocket or curved spaces does not affect the nearby shores.

2. The Valiyathura and Shankhumukham coasts are located 13-15 km from the project area. The first signs of coastal erosion will appear in Kovalam, Adimalatura, Pulluvila, and Poovar areas. There are no signs of coastal erosion or soil deposits in these regions.
3. When a construction activity takes place in an area that falls in a straight line, that impact will reflect on shores at a distance of eight to ten times the length of the land protruding into the sea. The groyne at Vizhinjam is hardly 1km long. The implications of construction activities will reflect only up to a distance of 8 to 10 km. Regions like Panathura, Poonthura, Bimapalli, Valiyathura, and Shankhumukham do not fall within this 10 km.
4. The depth of the seas that fall within the project area has

been continuously surveyed and recorded since 1960. The survey is done every year before and after the monsoon. If these records are analyzed, it can be seen that no significant change has been reported about the ocean floor or the depth of the sea.

### Allegation 2

Coastal erosion started to surface when the construction of the port began

#### FACT

Coastal erosion began at Valiyathura- Shankhumukham region long before the construction of Vizhinjam Port started. There is documentary evidence available.

#### The reasons:

1. An analysis of data generated by Google Maps since 2015 will indicate the coastal erosion in Valiyathura- Shankhumukham region.

EXPERTS SAY



**Dr. P CHANDRAMOHAN**

*Former Scientist & Head,  
Ocean Eng. Dept., NIO*

The port construction activities are not contributing to increasing in wave height. The Vizhinjam is present with a pocket beach, surrounded by the headlands confining littoral drift within the headlands. Usually, the sediment supply by rivers to the beaches on the coastlines of Kerala is heavily reduced by urbanization. There is a deficit in the supply of sand to the littoral system which in turn affected the stability of the coastline in Kerala. The sediment supply from the south, i.e. from the Kanyakumari side is also very much reduced due to the reduction in sediment supply and the groyne field constructed in Tamil Nadu. Such are reasons for causing erosion noticed at South Kollengod, Valiyathura, and Shankhumukham coastal stretches.

At the Vizhinjam site, if there was significant littoral drift, then the existing fishing harbor constructed in the 1980s would have been filled with sediments before the start of construction of the new port itself, which had not happened. Therefore the erosion taking place at Valiyathura and Shankhumukham beaches are not due to the stoppage of littoral drift as said due to the construction of Vizhinjam port.

## EXPERTS SAY



Dr. S A SANNASIRAJ

Professor, Dept. of Ocean Engineering, IITM

The Vizhinjam port is an essential development to our country and it would meet the need for coastal and inland shipping facilities that meet our country's current requirements. Even with a long coastal line, both along the east and west coasts in the southern part of India with a lot of enormous demand to serve the entire Indian subcontinent, we are unable to tap it due to the absence of a transshipment container terminal. Considering the need for transshipment in India using transporting through water bodies, the amount of fuel consumed and the impact of pollutants on land can be reduced as compared to transportation over land.

2. A report submitted to the State Government by IIT Madras in 2007 states about severe coastal erosion at Shankhumukham region in 2005. The IIT also reports detailed measures to be taken to cope with coastal erosion.
3. A National Institute of Ocean Technology study based on satellite images from 2000-2021 points out that the Valiyathura-Shankhumukham regions have been facing coastal erosion since 2000.
4. Studies conducted by various national science and technology institutions have marked Valiyathura-Poonthura shores as a 'High Erosion Zone.'

**Allegation 3**

Coastal erosion is not a natural phenomenon.

**FACT**

During the monsoon, the fierce waves drag the sand from the coast and deposit in the sea. Once the monsoon is over, the slow or smooth waves bring the sand back to the shore. The shore is gradually restored. This is a natural and common process. However, the enormous waves

caused by Cyclone Okhi dragged the sand from Valitura and Shankhumukham shores to the deep seas. Even after the cyclone, the waves did not bring back the sand to the coast. Later, the coastal areas of Kerala experienced the rage of many cyclones and low pressures that originated in the Indian Ocean.

**Allegation 4**

Shores that experience coastal erosion will never be the same

**FACT**

A normal formation of a 30 m

**Neither land belonging to fisher folk is acquired, nor are the members of the fishermen community displaced. The land that is voluntarily given up is acquired.**

wide shore was witnessed at Valiyathura and Shankhumukham during October –November 2022.

**Allegation 5**

People displaced by the project are not rehabilitated

**FACT**

Neither land belonging to fisher folk is acquired, nor are the members of the fishermen community displaced. The land that is voluntarily given up is acquired. They are adequately compensated, and land has been identified for constructing houses. About Rs 100 crore has been paid as compensation to 2640 people who lost their livelihood. ■

## EXPERTS SAY



C. V. SUNDARA RAJAN

An Environment Social &amp; Governance (ESG) Expert

During the early Project Preparation phase, one of the main issues that cropped up was the belief that it would have a severe impact on wadge bank located about 40 km south of Vizhinjam. Wadge Bank is believed to be a fish breeding ground that enhances the fish catch in the Indian Coastal areas especially Coastal Kerala. This is located between Indian Coast near the Vizhinjam region and Srilankan Coast. The studies disproved the arguments that ship movements are affecting the breeding areas due to the port project.

# Ensuring sustainable fishing

For the smooth running of marine fishing and regulation, the government has constituted a three-tier council titled Fisheries Management Council.



M. Sreekantan  
Member Secretary  
State Fisheries Management Council

**W**ork in peace is the basic right of every labours. There used to happen conflict between fishing vessels and mechanized boat fishermen in the past days. Kerala Marine Fishing Act (KMFR Act) came into force in 1980 to resolve these conflicts and to ensure peaceful fishing on the coastal lines on a legal basis. Stepped up to this act, for the smooth running of marine fishing and regulation, the government has constituted a three-tier council titled Fisheries Management Council. The Fisheries Management Council will work as a three-tier system- Fishing Village Management Council (FVMC) District Fisheries Management Council (DFMC) and State Fisheries Management Council (SFMC). The implementation of the KMFR act and chalking out marine fisheries management plan at various levels are the main responsibilities of the council. The council is also responsible to create general awareness of the conservation of marine resources and their importance among the fisher folks. The council is conducting seminars and workshops on marine fish cultivation and sustainable usage of resources among the fisher folks.

## The Fishing Village Management Council (FVMC)

Nine coastal district offices are working under the fisheries department. There are 222 marine fishing villages and each village is supervised by the Local Self Institution head as the chairperson and fisheries extension officer as member secretary. From each fishing village, a local self-institution

representative is selected from the coastal wards, 2 presidents of the fisheries cooperative sector, 2 fishermen nominated by the government, and a woman are the members of the fishing village management council.

## District Fisheries Management Council (DFMC)

In the District Fisheries Management council district collector will be the chairman and the fisheries deputy director will be the member secretary.

The District Fisheries Management Council constitutes the municipal chairman/corporation mayor/district panchayath president, a representative of the central marine Fishing Research Institute, and one member each from 5 recognized fisherman trade unions nominated by the government and the marine fishing expert nominated by the government.

## State Fisheries Management Council (SFMC)

In the state fisheries management council, the chairman is the fisheries director and the fisheries joint director is the member secretary. In this council, the Central Marine Fisheries Research Institute director (CMFRI), the Central Institute of Fisheries Technology director and the Fishery Survey of India Zonal director are the members. Apart from this, members from 5 recognized fisherman trade unions and the marine fishing expert were both nominated by the government, and representatives from the seafood exporters association, marine product exports development authority (MPEDA), and coast guard are the members of this council. ■



Dr A. Rajagopal Kamath  
*Science Writer*

# Scientific temperament: growth or degrowth?

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It was Jawaharlal Nehru who emphasised the need for the cultivation of scientific temperament and the importance of science in nation-building.

Several social reformers, scholars, and scientists advocated the need to instil a spirit of scientific inquiry in society. Scientific thinking should be an integral part of our social interactions, and the scientific approach should be a way of life.

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Jawaharlal Nehru was very much aware of the fact that science alone can solve the problems of poverty, illiteracy, superstition, troublesome customs and traditions, wastage of vast resources, and a country inhabited by starving people when he declared that this country indeed could not afford to ignore science. At every juncture, this nation has sought its aid. It was during a speech in 1960, he emphasised the need for the cultivation of scientific temperament and the importance of science in nation-building. Such relentless efforts expanded the notion of scientific temper and strived to impress the leadership of the country to inculcate scientific temper among its citizens. During those decades, our country witnessed the launch of several scientific institutions by torchbearers like Homi Bhabha and Vikram Sarabhai. The team of scientists who got trained from these world-class institutions, built solid foundations for the development of research in fundamental science and application of the latest findings to build a strong nation with the best and most cost-effective technologies;

examples of these institutions are the Indian Space Research Organization, the Bhabha Atomic Research Centre, the Physical Research Laboratory, the Council of Scientific and Industrial Research (CSIR), universities, the Indian Institutes of Technology, etc.

As per Article 51A of the Constitution of India, it is the fundamental duty of all citizens of the country to cultivate a 'scientific temper with humanism'. The effort aimed to articulate the need to inculcate the values of scientific temper in society to rid the country of its deep-rooted taboos. The virtues of the scientific method were considered an antidote to the different traditional, religious, and malignant superstitious dogmas that prevailed in our country. Several social reformers, scholars, and scientists advocated the need to instil a spirit of scientific inquiry in society. The government has kept its commitment to developing scientific temper through its science and technology policy statements and constitutional amendments.

Despite these efforts, the scientific temperament failed to permeate society enough to have any noticeable effects on the psychology of the country. We currently live in a free country that is navigating its way to economic prosperity; however, we have a long way to go before we have that scientific vision that Nehru believed was so important for our future well-being. The country's lack of scientific temper is one of the most important reasons for its backwardness or failure in many areas. In this space-faring nation, the dream about the spread of scientific temper has largely remained unrealized, despite significant growth in science and technology.

Just a hundred years ago, this nation was full of superstitious people who even sacrificed adolescents for the agricultural prosperity and sustainability of society. There was an instance of suicide by the officiating priest of a race of people who believed that sacrificing the child of the leader would yield a good harvest in the coming season. When they realised that a good harvest is possible even when there is no human sacrifice, they felt sorry for their acts, which resulted in the suicide of the priest. Are we going back to those days of superstition

**The virtues of the scientific method were considered an antidote to the different traditional, religious, and malignant superstitious dogmas that prevailed in our country.**

**We should realise that the study of real science based on the established scientific method is essential to our material advancement and has a special significance for the development of culture in the new generation.**

and taboo now? What have we achieved so far in developing a scientific mindset among our countrymen? Even though the space for deliberating on the need for a scientific outlook was created on several occasions through several social reforms in the country, they have not been fructified fully, and here and there shocking incidents like human sacrifice and witchcraft are still reported.

The training from the household for the identification of good and bad omens, baseless fears such as the crossing of a black cat, and so on, begins in childhood and is deeply ingrained in the minds of the next generation. This gets reinforced by the verbal and nonverbal actions of the teachers. Even when the child exhibits some rational behaviour and asks questions about the reliability of the statements, he is silenced by the parents and teachers. In schools and colleges, there is a huge discomfort with teaching evolution and the vastness of the cosmos. Questions about these are unwelcome, and the students prefer to remain silent, fearing the negative outcomes from the teachers and parents. Even in the third decade of the 21st century, the atmosphere in forums like the Science Congress is not conducive to the real development of a scientific outlook or keeping pace with the changing world. We find several 'professors' of universities presenting papers on speculative ideas and guesswork that satisfy those who believe in the occult. When the world media publishes these baseless 'scientific theories' from university departments with a century of history, we cut a sorry figure in front of the scientific world.

We should realise that the study of real science based on the established scientific method is essential to our material advancement and has a special significance for the development of culture in the new generation. There is a strong need to get rid of the fear of the unknown that discourages the inherent tendency for change and progress in human beings. Scientific thinking and actions based on that should be an integral part of our social interactions, and the scientific approach should be a way of life. ■



^ Pilot planting of orchids at Kanakakunnu Palace with the help of students from the Department of Botany, University of Kerala, Kariavattom



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# Connecting people with nature

There must be a cultural shift in using native plants to encourage more people to connect with nature to improve well-being and in the process, help support the conservation of biodiversity.

Orchids are yet to be used to connect people with nature for recreation and education, improving tourism in countries with high diversity and endemism.

Improvement of urban habitats as biodiversity-rich areas using native orchids will be a unique and high-impact approach which will help both conservation and opportunities for recreation without harming orchids in the wild. Orchids are facing serious biodiversity loss in the wild in many parts of the world, especially in areas known as biodiversity hotspots, incidentally, in developing countries. However, orchids are yet to be used to connect people with nature for recreation, and education, improving tourism in countries with high diversity and endemism. Providing access to people to see orchids in the wild for recreation and nature-based tourism are risky strategies as this could lead to the decline of populations in the wild. Therefore, there is an opportunity to combine the conservation of orchids with urban landscape improvement which will improve awareness about biodiversity heritage and their value to humans.

Orchidaceae is the second largest flowering plant family and a majority of orchids are not known to people as they are found in the wilderness of rainforests or other unique ecosystems mainly in biodiversity hotspot countries, India has Western Ghats, a major biodiversity hotspot lies on the eastern side of Kerala. Orchids have rich floral diversity which includes extremely diverse flower shapes and colours. Orchids can inspire all demographics and influence policymakers and other agencies that play key roles in nation-building.

Kerala, with a land area of just over one per cent of India, has about 30% of Indian endemic orchids is a test case to use orchids to connect people with nature. In the age of climate change-related biodiversity loss and increasing urbanisation Kerala offers the potential to show the world the benefits of connecting people with nature to bring benefits to society and improve the biodiversity conservation of orchids. Both in Singapore and Miami this has already proved successful. Dressing up urban trees with native orchids to reach a larger group of people is the route they took and proved to be a highly impactful method.

As in many states in India, Kerala has a major road-building programme that will last at least the next two decades at least. The orchids on the brink of road side verges can be rescued and used for projects in urban landscapes which is less expensive and impactful from the day it is attached to the trees. With little maintenance cost, once established, these plants will get a new life and last for several decades.

With the support of the UK's Royal Society International Exchanges grant, the author has started networking activities this year to get a diverse group of stakeholders to develop projects that will target those orchids that are on the brink to be used for planting in safe havens in urban landscapes. To engage people with the proposed idea and get wider publicity pilot planting of nearly 1000 mature orchids saved from road verges have been done on the 1st of November at the iconic Kanakakunnu Palace, Thiruvananthapuram. Several charismatic orchids were attached to diverse species of trees and palms with the help of students from the Department of Botany, University of Kerala. This type of project has an additional benefit to society as it will improve tourism to the state. It is a scalable project and can be done in other urban areas in the state too.

Each tropical epiphytic orchid plant produces hundreds of thousands of orchid seeds if not millions. Using in vitro methods a large number of seedlings can be raised and used to plant on trees, and a single seed capsule can be used to produce thousands of seedlings using in vitro culture methods under controlled laboratory conditions. Although the process takes longer time to achieve the goals threatened and conservation flagship species can be grown in their thousands to display for people to see, learn and support biodiversity conservation. Once established orchids can be left alone and let nature takes its course. The story of orchid conservation displayed in front of people in the way proposed here can inspire people to protect other plant groups.

Networking activities and pilot studies have already been conducted with partners Kerala University's Department of Botany, Centre for Biodiversity Conservation, JN Tropical Botanic Gardens and Research Institute, Palode and potential stakeholders such as the Department of Tourism, Govt. of Kerala. Kerala's Tourism Ministry expressed their interest to include this as a theme as part of their ecosystem tourism initiatives.

Projects like this will get people on board to engage with plant conservation and get more connectivity with nature for their well-being in the coming decades. A model that requires an army of people with limited government financial support can achieve tremendous success in transforming urban areas with support from forestry/wildlife agencies, universities, and botanic gardens in India. This will improve the well-being of people and the conservation of native biodiversity. ■



Joby Baby  
Nurse, Kuwait

# Antibiogram: Kerala's pride

Kerala has become the first State in the country to bring out an antibiogram.

The State's first antibiogram (2021) shows that antimicrobial resistance (antibiotic resistance in bacteria that cause either community infections or hospital acquired infections) is definitely on the rise in the State when compared to the previous years.

**A**ntibiogram is the clinical data summarizing the profile of various bacterial pathogens and its susceptibility to antibiotics that are meant to treat them. Antibiograms help guide the clinicians in selecting the best empiric antimicrobial treatment and are useful for monitoring trends in drug resistance.

The State's antibiogram for 2021 has been formed by collating antimicrobial resistance (AMR) surveillance data from 18 sentinel sites across nine districts in the State. The data shows that ESBL production (ESBL are enzymes

that confer resistance to most beta-lactam antibiotics, including penicillins, cephalosporins) has been rising in the State, while at the same time, resistance to Carbapenems, one of the last resort antibiotics that can treat ESBL-producing bacteria, has also been rising.

“Kerala’s AMR profile may fare better when compared to the national AMR surveillance data collated by the ICMR. But this is the time to act. Stringent infection prevention and control measures should be adopted in our healthcare settings and rational antibiotic prescription and use be promoted in the community. It is the only way to break this vicious cycle, wherein increased reliance on last-resort antibiotics to treat infections is also increasing the resistance of organisms to these drugs,” says R. Aravind, Head of Infectious Diseases, Government Medical College, Thiruvananthapuram, and the convener of the working committee of Kerala

## Under the KARSAP, district-level AMR committees have now been set up to promote antibiotic literacy in the community.

Antimicrobial Resistance Strategic Action Plan (KARSAP). Under the KARSAP, district-level AMR committees have now been set up to promote antibiotic literacy in the community. Kerala’s AMR surveillance data pertains to seven priority pathogens—Escherichia coli, Klebsiella species, Pseudomonas species, Acinetobacter species, Salmonella enterica serotype Typhi and Paratyphi, Staphylococcus aureus, and Enterococcus species. A total of 21,765 priority pathogens

## Efficient infection control and prevention methods can reduce healthcare-associated infections and at the same time, antimicrobial stewardship should be promoted in a big way.

isolated from clinical samples of 14,353 unique patients, from January to December 2021, were analysed. The surveillance data revealed Escherichia coli as the most commonly isolated pathogen (40%), followed by Klebsiella species (24%), Staphylococcus aureus (12%), Pseudomonas species (11%), Enterococcus species (7%), and Acinetobacter species (6%). E. coli is the most common pathogen isolated among outpatients and inpatients, while Klebsiella species is the commonest pathogen isolated in ICU patients.

Klebsiella spp isolates showed more than 30% resistance to all the beta lactam antibiotics tested. It also showed alarmingly high resistance to 3rd and 4th generation Cephalosporins (75% to Cefotaxime, 70% to Cefepime) and Carbapenem (39% to Imipenem, 47% to Meropenem) in ICU patients. In infections with Carbapenem-resistant Klebsiella, mortality is around 30%. The percentage of Methicillin-resistant S. aureus (MRSA) isolates is 20%. This apparent decrease in MRSA is attributed to issues in data collection in the pandemic year. The resistance to 3rd and 4th generation Cephalosporins among E. coli is 62% and 48% respectively. Among the anti-pseudomonal drugs, 40% isolates of Pseudomonas spp. isolated from ICU patients are resistant to Ceftazidime whereas Piperacillin/tazobactam resistance is observed in 20% of the isolates. Isolates of Acinetobacter spp. show more than 50% resistance to almost all the antibiotics tested except for Minocycline to which 38% of strains are resistant.

Efficient infection control and prevention methods can reduce healthcare-associated infections and at the same time, antimicrobial stewardship should be promoted in a big way. The public needs to be made aware of how misuse and overuse of antibiotics can make infectious organisms resistant to these very drugs. Doctors point out that 90% of the fevers are caused by viruses against which antibiotics are useless. Azithromycin is the most abused antibiotic, as evidenced during the COVID-19 pandemic. The State intends to generate the AMR surveillance report every year. The AMR surveillance sites have been increased to 21 now.

### Antibiogram Application and Benefits

The Antibiotic policy based mobile app would be an ideal one stop solution to enhance the treatments with antibiotics, as well as to reduce the unnecessary time consumption.

- Ready access to Antimicrobial Resistance resources published by Government of Kerala, focused information on pathogens and antibiotics in their field from open-source databases and recommended antibiotic treatments protocols.
- Collaboration Tools Like Chats, notes, alerts/notifications, etc.
- Knowledge sharing tools Blogs, posting of case studies etc
- Gamifying treatment protocols through self-tests and practicing by treating virtual patients.
- The mobile Conversational Application with a dual Layer of Navigation via conversations as well as a robust user interface, providing a hyper personal experience akin to Google Assistant. ■



# STATE PHOTOGRAPHY AWARD 2020

# 1

PRIZE



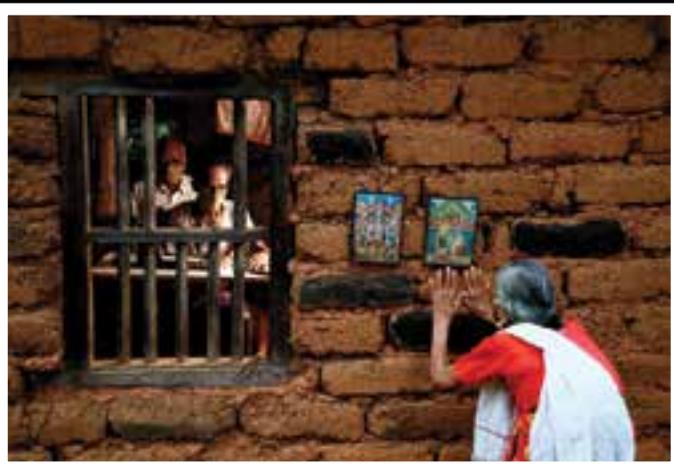
**Anil Kumar**  
Ramdas Nagar, Kudlu,  
Kasaragode



# 2

PRIZE

**Shiju Vani**  
Karamangalathu Thazham,  
Kizhakkumuri,  
Kakkodi



# 3

PRIZE

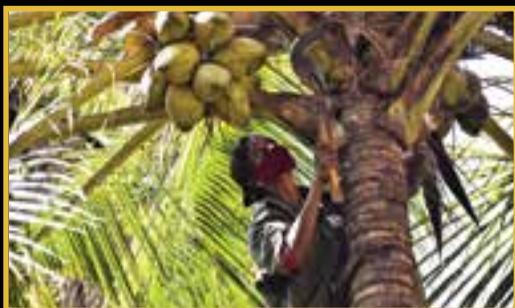


**Pramod P. V.**  
Ambika, Thayineri,  
Payyannur, Kannur

## CONSOLATION PRIZES



**Ijas Punalur**, Vilakkuvettam, Punalur



**Alfred M K**, Eruumapetty, Thrissur



**Abdul Salim T M**, Edakkazhiyoor, Thrissur



**Ratheesh Kumar M J**, Thiruvananthapuram



**Anju Akhil**, Parassala, Thiruvananthapuram



**Manikandan Kolazhi**, Thrissur



**Diljith P**, Cheruthuruthy, Thrissur



**Gokul E**, Koyilandi, Kozhikodu



**Madhusoodanan P**, Thiruvananthapuram



**Milan John**, Mukkattukara, Thrissur



M. V. Baiju

Senior Scientist  
Central Institute of Fisheries Technology

# An anchor to sustainability

To overcome the issues related to the usage of kerosene, sustainable, environment-friendly, and cheaper alternative method is the needed.

Most of the traditional fishing vessels in Kerala use outboard motors of 2 horsepower to 65 horsepower. There are also boats that use one outboard motor and twin outboard motors. All these motors start with petrol and run on kerosene. According to data of Matsyafed, there are 14481 outboard motor engines in the state.

With the aim of supporting the fishermen in employment, the state has allotted subsidies for kerosene. The decision of the Central Government to substantially cut the kerosene shares to the states has created a

huge crisis for the states. Recently, the Central Government decided to completely shut down the kerosene subsidy. This move will adversely affect the income of fishermen and the entire economic condition of the coastal region. Kerosene usage has many side effects. It is more harmful to the environment than the fuels like petrol and diesel used for running the boats. Kerosene oil spilled into the sea during engine operation is extremely harmful to marine habitats and the health of marine life.

In order to resolve the issues related to the usage of kerosene, there needs to be a sustainable, environment-friendly, and

cheaper alternative fuel to operate the outboard motors of the boats. Considering the efficiency and fuel economy, it can be agreed that diesel engines are the considerably more suitable option. Hence, the state Fisheries Department decided to replace the usage of kerosene in outboard motors with diesel engines. To implement this move, a comprehensive plan has been formulated in collaboration with the Central Institute of Fisheries Technology. It is expected that there will be a 60% reduction in operating costs with this change, resulting in a more modernized, efficient, and sustainable fisheries sector. ■

**NO  
TO  
DRUGS**

ഉപേക്ഷിക്കാം ലഹരിയെ

To go with the flow, along slow-moving  
canals, to find deep journeys  
in little country boats, to catch the  
drift of conversations under quaint  
log bridges, and discover  
close-knit lives on distant islands.

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