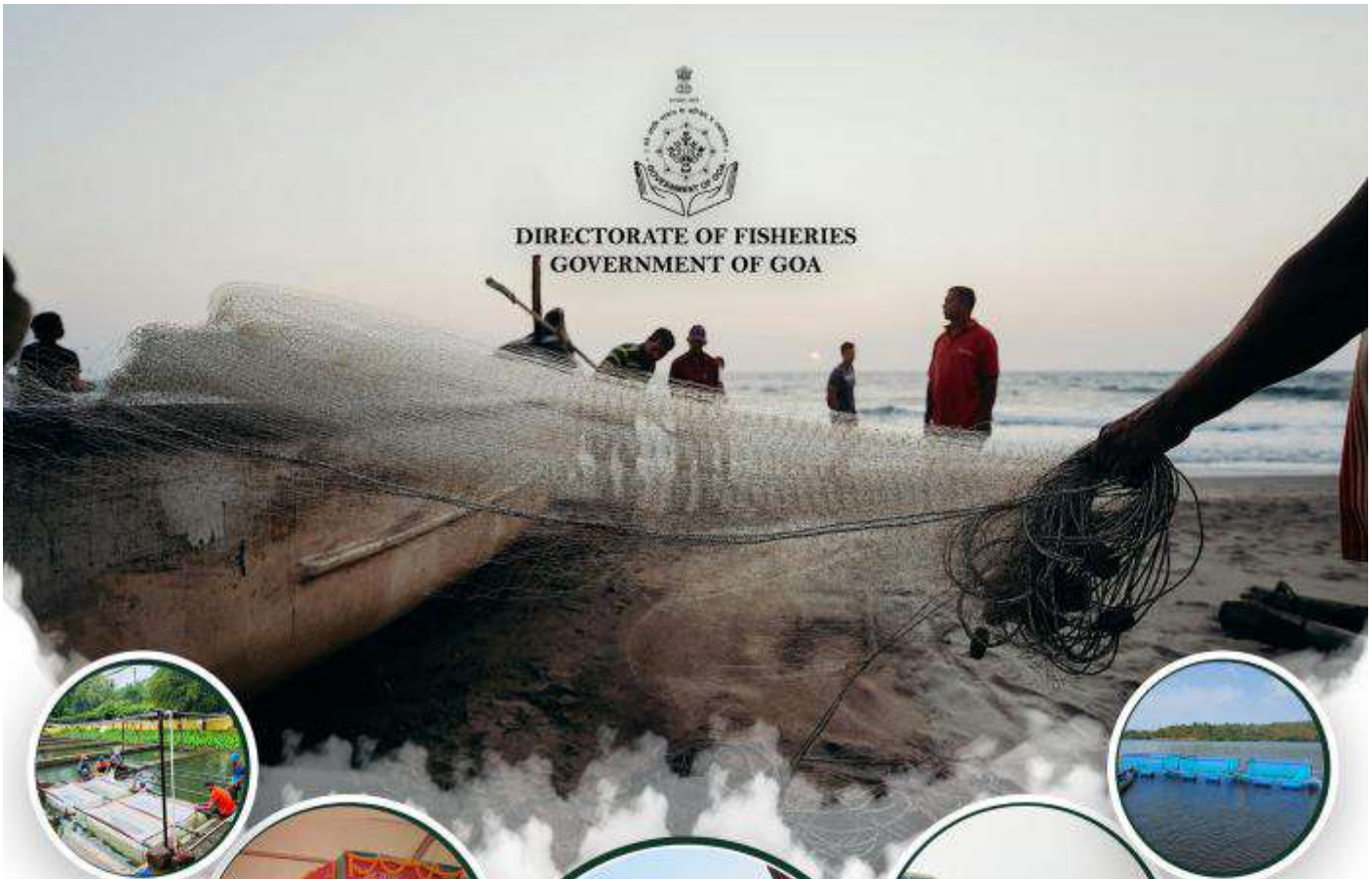
DIRECTORATE OF FISHERIES
GOVERNMENT OF GOA

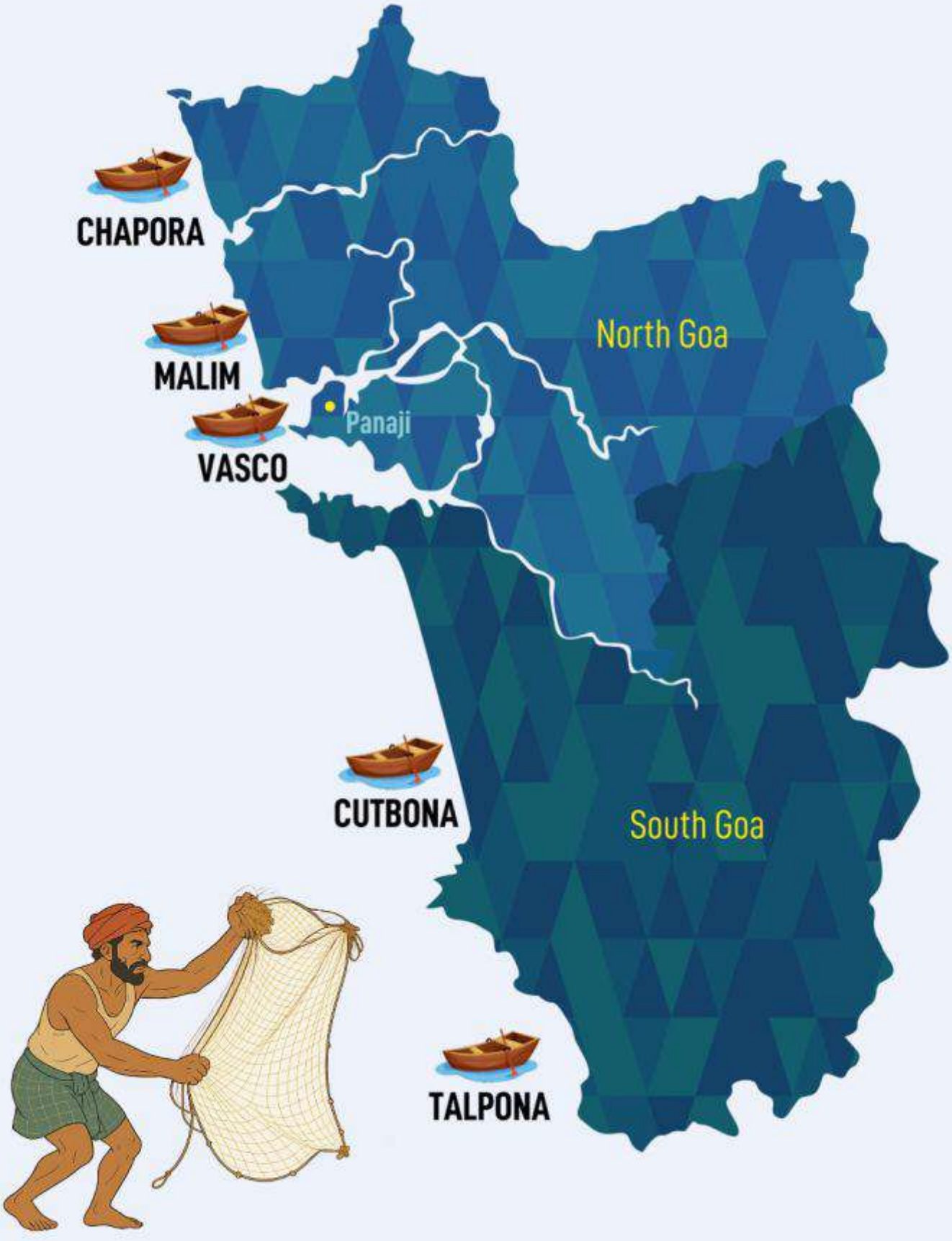


GOAN FISH TRAILS

Vol.-VIII-2025

AN OVERVIEW OF DEPARTMENT OF FISHERIES
GOVERNMENT OF GOA

Five major fish landing jetties of Goa




नुस्ते जाय गे.....

Goan Fish Trails
Vol.VIII-2025

An Overview of
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Government of Goa
Dayanand Bandodkar Marg,
Panaji Goa

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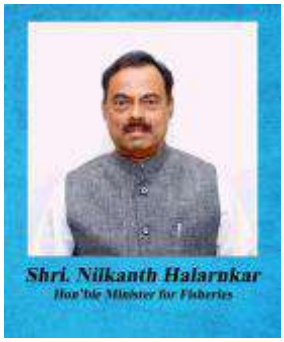

MESSAGE

It is with great pride that I present the latest publication *Goan Fish Trails-2025*, a comprehensive and insightful chronicle brought out by the Fisheries Department of Goa.

The fisheries sector in our state holds immense potential as a pillar of sustainable livelihood, economic growth, and food security. Blessed with a rich coastline and abundant marine resources, Goa is uniquely positioned to lead in responsible fishing practices, value addition, and blue economy initiatives. Our fishing communities, combined with modern infrastructure and innovation, are paving the way for a brighter and more prosperous future.

I commend the tireless efforts of the Department of Fisheries in promoting sustainable fisheries, supporting our fisher folk, and contributing to the overall development of the sector. I convey my appreciation to the Secretary, the Director, and the dedicated team of the Fisheries Department for their effort and commitment in bringing out this publication.

Let us continue to work together towards strengthening this vital sector, ensuring ecological balance, and improving the quality of life for our fishing communities.

(Shri. Nilkanth R. Halarnkar)
Hon'ble Minister for Fisheries

MESSAGE

Goa's identity is deeply entwined with its coastal heritage, vibrant fishing communities, and abundant marine biodiversity. This publication is a tribute to that enduring relationship between the sea and the people who draw their livelihood and culture from it. *Goan Fish Trails -2025* not only highlights the traditional and contemporary facets of fisheries in the state but also showcases our efforts towards sustainable marine resource management, technological advancement, and community empowerment.

The Department has taken commendable steps over the past year—ranging from improved infrastructure and mechanization to capacity building for fisher folk and the promotion of responsible fishing practices. This edition reflects those achievements and outlines a progressive vision for the future.

I congratulate the team behind this publication for their dedication and thoroughness. I am confident that *Goan Fish Trails-2025* will serve as both an informative reference and an inspiration for policymakers, researchers, students, and the fishing community alike.

(Shri. Prasanna A. Acharya, IAS)
Secretary (Fisheries)

Chief Editor's Note

It's my privilege to bring the Yearly Fish Trail to the public. It is a brief of the work done by the Fisheries Department during the whole year. A few Articles are also published for the benefit of fishermen and fish farmer and for those who have interest in the Fisheries sector.

The Department is dedicated to supporting the fishing community by enhancing their overall working environment. Key initiatives include providing subsidies to fishermen, developing essential infrastructure such as jetties, ramps, and auction sheds, improving public amenities like toilets, implementing security measures, artificial reefs and promoting the use of renewable energy at various locations across Goa state.

It gives me joy to see the growth in the Aquaculture sector and the interest the youth have taken to modern farming techniques.

With the continued support of our fishing communities, policymakers, researchers and Industries stakeholders, we are confident that Goa will emerge as a leader in sustainable fisheries in the Country.

I express my sincere gratitude to the Hon'ble Minister of Fisheries Shri. Nilkanth Halarnkar, for his keen interest in this sector, continuous support and guidance along with Secretary (Fisheries) Shri. Prasanna A. Acharya, IAS, for his kind advice and motivation.

(Dr. Shamila Monteiro)
Director of Fisheries

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Errors if any may kindly be intimated to the Director of Fisheries, Panaji-Goa

I. OVERVIEW

With a coastline of about 193.95 km and rich inland water resources, the state has immense potential for both marine and inland fisheries. The Fisheries Sector in Goa plays a vital role in the socio-economic development of the state, providing livelihood and nutritional security to a substantial section of the coastal population. The state's fisheries sector continues to contribute significantly to employment and food production. During the year 2024-2025, the total fish production Goa was 137443 tonnes, with marine fish landings accounting for 128378 tonnes and inland fish production contributing 9065 tonnes including capture and culture fish.

Marking a significant milestone in marine conservation efforts, the installation of Artificial Reefs along Goa's coastline commenced with an inaugural deployment ceremony held on 25th April 2025 at Querim, Pernem Taluka. The initial deployment took place at the identified sites in Keri and Anjuna, aimed at strengthening marine biodiversity, enhancing fish habitats, and supporting sustainable fisheries. This initiative directly benefits local fishing communities and reinforces the State's commitment to marine ecosystem restoration.

The Department has proposed digitizing the application process for the "Financial Assistance for Purchase of Fuel (Petrol) scheme" to improve accessibility and streamline operations. This transition from a manual to a digital system is aimed at enhancing administrative efficiency, ensuring greater transparency, and streamlining access to benefits for traditional fishermen.

Under the umbrella of the Pradhan Mantri Matsya Sampada Yojana (PMMSY), a central sector sub-scheme titled PMMKSSY has been approved by the Union Government. This scheme aims to bridge critical gaps in fish production, productivity, technology adoption, and post-harvest infrastructure. It also focuses on strengthening the fisheries value chain and establishing a robust management framework for sustainable fisheries development.

Additionally, the Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA) scheme, launched by the Ministry of Fisheries, Animal Husbandry and Dairying and notified by the State Government, is designed to empower Tribal Communities by enabling their participation in fisheries and aquaculture activities, thereby ensuring inclusive growth in the sector.

In a bid to improve fish distribution and ensure hygiene, the Government launched the Matsya Vahini scheme under PMMSY to promotes the use of eco-friendly movable fish kiosks (solar-powered three-wheelers equipped with refrigerated compartments and GPS tracking). These vehicles were given to enhance market access

for fishermen, especially in remote areas. The distribution ceremony took place during the Sankalp Se Siddhi programme held on 9th June 2025 at Rajiv Gandhi Kala Mandir, Ponda, Goa, in the presence of the Hon'ble Chief Minister Pramod Sawant and Hon'ble Minister for Fisheries, Shri Nilkanth Halarnkar

This Department has conducted 08 short term training programme on (1) Potential opportunities in Fisheries Sector in Goa, (2) Ornamental Fish Breeding & Rearing & Aquarium Fabrication, (3) Seafood value Added Product Preparation, (4) Aquaculture (5) Ornamental Fish Culture which has helped 160 participants to develop their skills.

The Fisheries Department of Goa remains committed to sustainable growth, community welfare, and innovation in the fisheries sector. Through its targeted schemes and developmental strategies, the Department aims to transform Goa into a model coastal state in responsible and resilient fisheries development.

"Where there is water, there is life – and where there is fish, there is sustenance."

II. VISION OF THE DEPARTMENT

Vision:

Sustainable and responsible increase in fish production in the State while contributing towards social and economic growth of the Fisher's and Fish Farmers and ensuing nutritional security of the State.

Objective of the Department:

To sustainably harvest Marine Fisheries resources, provide infrastructure, promote aquaculture and improve the Socio-economic conditions of the Fishermen and generate employment and food security in a holistic way.

III. GOA FISHERIES AT A GLANCE

Sr. No.	Fishing vessel types	Nos.
1	Non-motorized canoe	294
2	Motorized canoe	1971
3	Trawlers (Mechanised vessel)	401
4	Purse- Seiner	362
5	Trawler cum Purse- Seiner	61
6	Fishing net/gear registration	343

Sr. No.	Fisherman's profile	Nos.
1	Fishing villages	41
2	Fisheries cooperative societies/Association	56
3	Marine Fisher Folk Population (CMFRI census 2016)	12651
4	Marine Fisherman Population-Active (CMFRI census 2016)	2758

State Profile

Sr. No	Resources	Distance
1	Continental Shelf (upto 100 fathoms depth)	10,000 km²
2	Coastal length	193.95 kms#

Sr. No.	Infrastructure	Nos.
1	Fishing landing centre's (Major fishing Jetties)	07
2	Fishing landing centre's (fishingRamps)	28
3	Ice plants (private)	25
4	Cold storages (private)	20
5	Processing units (private)	14

Inland Profile

Sr. No.	Resources	WSA*
1	Reservoirs	3448 ha.
2	Rivers	338.5 km
3	Canal	240 km
4	Tanks and Ponds	101 ha.
5	Brackish water	198.86 ha.
7	No. of Brackish water Fish farm registered	48 nos.

**WSA-Water Spread Area*

 # Costal length changed as per circular No. MR-14011/1/2024-TRW(S) Dated 29/04/2025 from Ministry of ports, Shipping and waterways, Transport Research Wing, Government of India.

DEPARTMENT PROFILE

Sr. No.	Training courses	Duration
1	Six Months Training Course, FTC, Old - Goa	6 months
2	Short Term Training Course, FTC, Old - Goa	2 days
3	Training Course at CIFNET, Cochin	
a)	Vessel Navigator Course	2 years
b)	Marine Fitter Course	2 years
4	B.Sc. (Fisheries), Ratnagiri, Maharashtra	4 years

Sr. No.	Services
1	Registration of fishing vessels and fishing nets
2	Licensing of Fishing vessels and fishing nets
3	Registration of Fish seller/vendor
4	Registration of Aquaculture farms
5	Recognition of Fish trader at fishing jetty
6	Issue of NOC for water sports activity
7	Registration of fish farmer/fishermen under NFDP portal
8	Issue of permission for cage culture in sea/river/reservoir etc
9	Issue of permission for erection of fishing stake in river

IV. ACTS & RULES

Sr. No.	*Name of the Act, Rules, Regulation etc.*	Brief list of the contents
I.	*Goa Marine Fishing Regulation Act, 1980*	Licensing of Fishing Vessels, Registration of, Fishing Nets, Penalties for violations etc.
I. a	*(1st Amendment) Act, 1989*	Definition of adjudicating officer
I. b	*(2nd Amendment) Act, 2019*	Registration of Fishing Stake and licensing of Fishing Stake, Licensing of Fishing Vessel, Registration of Fishing Nets, Penalties for violations etc.
II	*Goa Marine Fishing Regulation Act, 1982*	Licensing of Fishing Vessels, Registration of Fishing Nets, Penalties for violations etc.
II. a	*(1st Amendment) Rules, 2001*	Licensing of Fishing Vessels
II. b	*(2nd Amendment) Rules, 2003*	Licensing of Fishing Vessels and fees enhancement
II. c	*(3rd Amendment) Rules, 2012*	Licensing of Fishing Vessels and fees enhancement
II. d	*(4th Amendment) Rules, 2014*	Licensing of Fishing Vessels and fees enhancement
II. e	*(5th Amendment) Rules, 1982*	Licensing of Fishing Vessels and fees enhancement
II. f	*(6th Amendment) Rules, 2021*	Registration of Fishing Stake and licensing of Fishing Stake, Licensing of Fishing Vessels, Registration of Fishing Vessels and Fishing Nets, Penalties for violations etc.
II. g	*(7th Amendment) Rules 2023*	Amendment in the fees structure towards grants/renewal of fishing vessels license and net/gear license and revision in penalties imposed by Adjudicating officer for violating Goa Marine Fishing Regulation Act and its Rules there under.
III.	*Merchant Shipping Act, 1958*	Registration of fishing vessels
IV.	*Merchant Shipping (Registration of Indian Fishing Boats) Rules, 1988*	Registration of fishing vessels
V.	*Merchant Shipping (Indian Fishing Boats Inspection) Rules, 1988*	Inspection of fishing vessels
VI.	*The Coastal Aquaculture Authority Act, 2005*	Registration and renewal of Shrimp farm
VII.	*The Coastal Aquaculture Authority (Amendment) Act, 2023 & Rules 2024*	Registration and renewal of Coastal Aquaculture Units.

V. POLICY DECISION AND NEW SCHEMES

1. Regulation and Enforcement

The State Government under Marine Fishing Regulation Act, 1980, issued order for prohibiting fishing by fishing vessels fitted with mechanical means of propulsion and by means of trawl-net and purse-seine net, except fishing by registered motorized canoes using gill nets only, and fitted with outboard or inboard motors, of upto 10 HP capacity, as a means of propulsion, along the sea coast of the State of Goa and the territorial waters of the State of Goa, with effect from 1st June, 2025 till 31st July, 2025 (both days inclusive).

Vessels anchored at Cutbona Jetty during fishing ban period.

2. Mukhel Mantri Nustekar Majat Yevjan

The State Government notified the Mukhel Mantri Nustekar Majat Yevjan to provide financial assistance of up to Rs.50,000/- in the form of family benefit to the households in case of the death of the active fishermen who is the breadwinner, irrespective of the cause of death.

Fishermen pulling rampon net

3. Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA) Scheme

Government of Goa has notified the scheme Dharti Aaba Janjatiya Gram Utkarsh Abhiyan on Official Gazette vide Sr. No. 1 No.6 dated 8/5/2025, in the state of Goa for a period of 5 years, from financial year 2024-25 to 2028-29 under Pradhan Mantri Matsya Sampada Yojana (PMMSY). The scheme aims to uplift the tribal communities by providing them with opportunities for fisheries and aquaculture activities.


Awareness camp held at Bhironda and Honda Panchayat on 1/7/2025


Motorcycle with icebox distributed to beneficiaries

4. PM Vishwakarma Scheme.

The Fisheries Training Centre, under the Directorate of Fisheries, Government of Goa, has been registered as an official Training Centre under the PM Vishwakarma Scheme, a flagship initiative by the Government of India aimed at supporting traditional artisans and craftspeople across various trades.

As part of this scheme, the trade of "Fishing Net Maker" has been included under the list of recognized skills eligible for support and formal training. This initiative is expected to benefit traditional fishing communities by enhancing their skills, enabling access to modern tools, credit support, and certification, thus improving livelihood opportunities.

5. Goa State Mariculture Policy

In partial modification of the Notification issued under the Goa State Mariculture Policy 2020, dated 08/11/2024, an important reclassification has been made to Zone B, to streamline and regulate mariculture activities more effectively based on the size and scale of cage culture operations, as: Zone B-1 is designated for the installation of small-size open sea cages. These cages are permitted to be deployed at a distance ranging between 3 to 5 kilometers from the shoreline. Zone B-2 is earmarked for large-size cages, which are allowed to be installed at a distance of 6 to 20 kilometers from the shoreline.

Sea cage Culture at Polem, Canacona.

VI. ACHIEVEMENTS

A. Budget Provision

The Annual Budget for the year 2025-26 is Rs.7,222.33 lakhs out of which revenue is Rs.4,004.33 lakhs and capital is Rs.3,218.00 lakhs. For the year 2024-25 out of Rs.8,403.85 lakhs approved, an amount of Rs.5,588.42 lakhs were utilized towards disbursement of subsidies, payment of salaries, office expenses, supplies and material, administrative charges, capital expenditure etc.

B. Revenue Generated

A total revenue of Rs.825.32 lakhs was generated during the financial year 2024–25 through various sources such as license fees, fish sales, lease rents, trader fees, RTI fees, registration fees, and other departmental receipts.

C. Financial Assistance Scheme

Physical & Financial Achievements for the Financial Year 2024-25 under State Schemes: -

Sr. No.	Name of the scheme	No. of Beneficiaries	Exp. (Rs. in lakhs)
	STATE SCHEMES		
1	Financial Assistance for construction of Wooden / FRP Canoe	73	44.98
2	Financial Assistance to Fishermen for purchase of Fisheries Requisites (Gill Net/ River Gill Net with Accessories)	115	33.99
3	Financial Assistance for Purchase of Fuel (Petrol) to the Fishermen for operation of Out Board Motors	1116	339.51
4	Financial Assistance to purchase/construct new fishing craft less than 26 feet for fishing in Inland waters of Goa	14	3.94
5	Financial Assistance to Purchase Singel Net /Small Rampon Net & its Accessories.	1	0.50
6	Financial Assistance for the purchase of Barrier Nets and its accessories	5	1.26
7	Financial assistance for Lifejacket and Lifebuoys	42	In Kind
8	Interest subsidy on loans for Agriculture and allied activities	18	0.66
9. a	Supply of Insulated boxes to Fisher Persons (Insulated Boxes distributed)	40	In Kind
9. b	Supply of Insulated boxes to Fisher Persons (financial assistance provided)	15	0.80
10	Financial Assistance to the Fish Vendors registered with the Directorate of Fisheries to purchase the Accessories required for fish vending.	6	0.68
	TOTAL	**1445**	**426.32**

Achievement under Centrally Sponsored Schemes for the year 2024-25			
Sr. No.	***Pradhan Mantri Matsya Sampada Yojana***	***Physical Achievement***	***Financial Achievement (Rs. In lakhs)***
1	Bivalve cultivation (mussels)	2	0.40
2	Construction of kiosks of aquarium/ornamental fish	5	24.00
3	Establishment of Large Biofloc (50 tanks of 4m dia and 1.5m high) culture system	1	30.00
4	Establishment of Medium Biofloc (25 tanks of 4m dia and 1.5m high) culture system	3	75.00
5	Establishment of Small Biofloc (7 tanks of 4m dia and 1.5 high) culture system	2	7.50
6	Ice Plant of minimum 20-ton capacity	2	76.07
7	Installation of Cages in Reservoirs	9	105.60
8	Insulated vehicles	12	140.00
9	Medium Scale Ornamental Fish Rearing Unit (Marine water Fish)	2	9.60
10	Modernization of Ice Plant	2	28.00
11	Motor cycle with Ice Box	9	3.90
12	Providing boats (replacement) and nets for traditional fishermen	2	2.93
13	Three-wheeler with Ice Box including e-rickshaws for fish vending	10	15.00
14	Up gradation of existing fishing vessels for export Competency	6	34.26
	Total	**67**	**552.26**

D. Corpus fund under "Natural Calamity Relief to Fishermen of the State"

During the financial year 2024-25, fishermen contributed a total of Rs.9,98,400/- to the Corpus Fund, bringing the total available funds to Rs.27,18,07,488/- as of March 31, 2025. The Managing Committee notified under Fishermen Corpus Fund, approved the release of financial assistance amounting to Rs.20,00,000/- on 19th November 2024 for two beneficiaries under the said scheme for the damage of fishing vessels. The assistance, provided under the scheme "Natural Calamity Relief to Fishermen of the State," aims to support beneficiaries impacted by natural calamities.

Sr. No.	Name & Address of the Applicant	V.R.C. No.	Amount released
1	Reena Fernandes H.No. 1630, Vasvaddo, Benaulim, Salcete	IND-GA-01-MM-187	Rs.10,00,000/-
2	Rosario Fernandes H.No. 140,4th ward, Colva, Salcete	IND-GA-01-MM-308	Rs.10,00,000/-

Distribution of sanction letter with the hand of Hon'ble Minister for Fisheries at Secretariat-Porvorim

VII. INFRASTRUCTURE

To support and modernize the fisheries sector, the Government of Goa has developed a comprehensive range of infrastructure facilities across coastal and inland regions. These include fishing jetties, net mending sheds, fishing ramps, toilet facilities and surveillance systems, all designed to facilitate safe and efficient operations for the fishing community.

- Fishing ramps allow for the smooth landing and berthing of the fishing canoes improving operational ease along the coastline.
- Net mending sheds provide sheltered areas where fishermen can repair and maintain their nets, ensuring equipment longevity and comfort during maintenance work.
- In addition, the introduction of surveillance systems at key locations enhances security, protecting both marine resources and fishermen.
- The Department has also prioritized the development of clean and well-maintained sanitation facilities at fish landing centres, jetties,

Together, these infrastructure developments play a critical role in improving safety, productivity, and sustainability in Goa's fisheries sector.

A) *Projects completed during 2024-2025: -*

- The protection and stabilization of the hill slope at the Fisheries Complex, Malim, Penha-de-Franca.
- The repair and maintenance of the Khariwada Fishing Jetty.
- Construction of 4 No. of Auction Shed Cutbona Jetty through CSR Fund by Oil and Natural Gas Agency Betul.

New Auction Shed at Cutbona Jetty

- Installation of 35KW Solar panel at Malim Jetty by Mandovi fishermen Cooperative Society at Malim.

Newly installed Solar panel at Malim

B) *Proposed projects: -*

- Construction of Ramp and Net Mending Shed in Survey No. 157/1 at Dhaujowado in V.P. Cundaim-Ponda-Goa.
- Annual Repair and Maintenance Works of Khariwada Fishing Jetty at Khariwada, in Vasco Constituency.
- Repair of Chapora Fishing Jetty and Auction Hall at Chapora.
- Construction and up-gradation of fishing jetty at Malim- Phase I-Balance work.
- Construction of the Compound wall at Badem, Assagao.

C) *Sanitation Infrastructure Development in the Fisheries Sector*

As part of improving hygiene and public health at fisheries facilities, the Department undertook significant sanitation projects during the financial year 2024–25.

- A key development includes the construction of a 50-seater Sulabh Sauchalay complex, along with bathrooms at Cutbona Jetty to provide clean, accessible, and hygienic sanitation facilities for both fishermen and visitors.

Under construction 50-seater Sulabh Sauchalay complex, at Cutbona Jetty

- To support sustainable waste management, the Government has also approved the design, construction, operation, and maintenance of a 100 KLD (Kilo Litre per Day) Sewage Treatment Plant (STP) at Cutbona Jetty, to be managed over a 10-year period. This will ensure long-term, efficient treatment of wastewater generated at the site.
- In Malim, the servicing and commissioning of a 40 KLD STP, along with ancillary works for the connected toilet block, have been completed.
- Additionally, repair works of existing toilet blocks at Malim and Cutbona are currently in progress, being carried out by Sulabh International Services.
- The process for installation of a new toilet block at Khariwada Jetty, Vasco, has also been initiated.

D) *Lighting Up Goa's Fisheries – Solar Lights*

To promote sustainable and energy-efficient infrastructure, the Fisheries Department of Goa, in collaboration with the Goa Energy Development Agency (GEDA), has initiated the installation of solar-powered lighting systems across various fisheries facilities. This initiative aims to enhance working conditions, improve security, and reduce dependency on conventional electricity, all while supporting environmental conservation.

Expanding Solar Infrastructure in Goa's Fisheries Sector (2024–2025)

- A total of eight solar light panels were installed at Nauxim.
- In addition, 292 solar lights were installed at multiple strategic locations, including Fishing ramps at Badem, Muxer–Velim, Brackish Water Fish Farm, Old Goa, Fresh Water Fish Seed Hatchery, Keri–Sattari, Net Mending Shed,

Kindlebag–Canacona, Fisheries Sub-Office, Cutbona, Fisheries Complex, Colva, Fisheries Training Centre, Old Goa & Sawantawada, Amona–Bicholim.

The Department of Fisheries, Goa, has proposed the installation of solar lighting systems in additional coastal areas during the upcoming phase at

- Madhalawado, Siridao Beach, Tiswadi-9 solar lights,
- Nazarethwado, Siridao Beach, Tiswadi-8 solar lights &
- Fishermen's houses in Baina and Desterro, located in the Mormugao Constituency-300 solar lights.

Solar lights installed at Nauxim

Solar lights installed at Amona – Bicholim

Installation of CCTV Surveillance Systems at Fish Landing Centres

The installation, commissioning, and maintenance of a CCTV surveillance system at Cutbona Jetty was successfully completed through the Info Tech Corporation of Goa Limited**.** This system enables real-time monitoring of fishing activities, improves safety, and helps deter illegal practices. Additionally, the Department has approved the installation of CCTV cameras at Chapora Jetty**.** The Department has proposed new CCTV installations at Malim Jetty, Fishing Ramp at Badem**,** Assagao & Fishing Ramp at Odxel**,** located in Bardez Taluka.

CCTV surveillance system at Cutbona Jetty

E) Infrastructure project under Pradhan Mantri Matsya Sampada Yojana

For the development of Coastal Fishermen Village as Climate Resilient Coastal Fishermen Villages (CRCFV) under PMMSY, the Ministry of Fisheries, Government of India has launched a scheme to develop 100 coastal villages as Climate Resilient Coastal Fishermen Villages, with Rs.2.00 crores per village, fully funded by the Central Government. 70% of the funds are for infrastructure and 30% for fisheries economic activities. In Goa, Cacra (Tiswadi) and Arambol (Pernem) have been selected. The National Fisheries Development Board (NFDB) has approved both projects and released the first instalment of Rs.1 crore (Rs.50 lakhs per village).

Saleri, Cola of Canacona taluka has been selected under the component of Integrated Modern coastal fisheries villages, of PMMSY, at the total project cost of Rs.7.50 lakhs with central share of Rs.4.50 lakhs

Cacra

Arambol

Saleri, Canacona

VIII. TRAINING AND INTERACTION PROGRAMMES

1. Six Months Training Course:

The Department offers a six-month Certificate Course for fisher youth at the Fishermen Training Centre, Ela Dauji, Old Goa. The program provides practical training in areas such as Fishing Craft and Gear, Navigation and Seamanship, Marine Diesel Engine Maintenance, Net Weaving and Mending, Seafood Value Addition and Marketing, Aquaculture, Aquarium Fabrication, and Swimming. The scheme aims to equip motivated youth with the skills needed to pursue fisheries as a viable self-employment option and to effectively manage their own enterprises.

During the year 2024-25, 6 nos. of trainees were certified upon completion of the course.

Six months training programme at FTC, Ella, Old Goa.

2. Short Term Training Programme:

Short-term training programmes are conducted at the Fisheries Training Centre (FTC), Ela Dauji, Old Goa, for fisher youth, fish farmers, entrepreneurs, and others interested in acquiring both practical skills and theoretical knowledge in fisheries-related fields. During the year 2024–25, a total of 160 participants attended these 8 different training programmes. The details of the training sessions conducted are as follows:

Sr. No.	Short Term Training/Programmes	Venue	No. of Students
1	Potential opportunities In Fisheries Sector in Goa	17th & 18th Oct 2024	20
2	Ornamental Fish Breeding & Rearing & Aquarium Fabrication	24th & 25th Oct 2024	20
3	Seafood value Added Product Preparation	06th & 07th Nov 2024	20
4	Seafood value Added Product Preparation	13th & 14th Nov 2024	20
5	Potential opportunities In Fisheries Sector in Goa	16th & 17th Jan 2025	20
6	Seafood value Added Product Preparation	28th & 29th Jan 2025	20
7	Aquaculture	06th & 07th Feb 2025	20
8	Ornamental Fish Culture	10th & 11th Feb 2025	20

Short-term training programmes conducted by The Department of Fisheries

3. Various trainings/meets/workshops attended by the Officers and Officials in and outside State.

- Final Validation Workshop on State Energy Efficiency Action Plan organized by Conference of Indian Industry (CII) on 27/06/2024 at Fortune Miramar attended by Smt. Megha Kerkar, Supdt. of Fisheries.
- 2nd Fisheries Summer Meet 2024 on the eve of National Fish Farmers Day on 12/07/2024 at IDA Scudder Trade Centre, Madhurai, Tamil Nadu attended by Shri. E. Vallavan, IAS, Secretary (Fisheries), Dr. Shamila Monteiro, Director of Fisheries, Smt. Megha Kerkar, Shri. Chandresh Haldankar, Supdt. of Fisheries and Shri. Sanil Naik, Asstt. Supdt. of Fisheries.
- Workshop on Ghost Net Retrieval Vital for Marine Biodiversity Conservation and Reducing Mortality of Entangled Endangered Megafauna organized by Tree foundation on 26/11/2024 at Coast Guard Office Mormugao attended by Shri. Chandrakant Velip, Deputy Director of Fisheries, Smt. Megha Kerkar, Smt. Varsha Naik Desai Supdt. of Fisheries.
- DoPT, GoI sponsored workshop on "Legal Matters (RTI, PoSH & Vigilance) on 18/12/2024 at GIPARD attended by Smt. Megha Kerkar, Supdt. of Fisheries & Smt. Janaki Goenkar, Office Superintendent.
- Set up stall for World Fisheries Day at Murdeshawar, Karnataka from 21/11/2024 to 23/11/2024 attended by Smt. Yashaswini B., IAS, Director of Fisheries, Smt. Megha Kerkar & Smt. Zigyasa Murkar, Supdt. of Fisheries.
- Training at Fisheries Training Center, Ela, Old Goa on Standardized Methodology for the collection of fish catch data of marine fisheries from 04/07/2024 to 05/07/2024 attended by all Officers & Officials of the Fisheries Department.
- "Stakeholders' State Level Workshop on the Implementation of Turtle Excluder Device (TED) in Trawl Gears in Goa." Organized by MPEDA and NETFISH, in collaboration with the Directorate of Fisheries Goa and PMMSY, held at Sanskruti Bhavan, Patto, Panaji, Goa on 19/07/2024 attended by all Officers & Officials of the Fisheries Department.
- Officials from the Directorate of Fisheries, Government of Goa, participated in the workshop titled 'Transformative Aquaculture, Digitization, Sustainable Aquaculture, and Future Strategies,' held at Bhubaneswar, Odisha. The workshop focused on innovative approaches, digitization, and sustainable practices in the aquaculture sector.
- Completion of One year Post graduate diploma in "Inland Fisheries and Aquaculture Management" at ICAR- CIFE, Kolkata by Shri.Chandrakant Velip, Dy. Director of Fisheries from November 2023 to October 2024.

- Shri. Chandrakant Velip, Dy. Director of Fisheries, Kum. Aniya Naik, Fisheries Officer, Smt. Gaitri Naik, Fisheries Officer, attended “One day interactive workshop on Registration, Survey, and Certification of Fishing Vessels”, organized by Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, Department of Fisheries, held on 8/11/2024 at Central Institute of Fisheries Nautical and Engineering Training (CIFNET), Kochi.
- Shri. Chandrakant Velip, Dy. Director of Fisheries and Shri. Sanil Naik, Asstt. Supdt. of Fisheries attended the Fisheries Secretariat Conference on 23/5/2025 at A.P Shinde Symposium Hall, NASC Complex, Pusa, New Delhi under the chairmanship of Dr. Abhilaksh Likhi, Union Secretary, Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying.
- The Hon’ble Minister of Fisheries, Shri Nilkanth Halarnkar, accompanied by Dr. Shamila Monteiro, Director of Fisheries and a delegation of fishermen from Goa, visited Norway from February 25 to March 2, 2024, to participate in the Agdar-India Business Seminar held in Kristiansand, which saw the presence of over 100 Norwegian business representatives interested in collaborating with various sectors in India, including fisheries. During the seminar, Shri. Halarnkar addressed the gathering and presented the Government of Goa’s policies and initiatives in the fisheries sector, emphasizing the state’s commitment to sustainable development and investment opportunities. He also engaged with Norwegian enterprises involved in aquaculture and discussed the potential for developing cage farming in Goa, inviting them to explore avenues for collaboration and technological exchange.
- The study and information-gathering visit to Singapore from 24th to 29th August 2024 was attended by a delegation led by the Hon'ble Minister of Fisheries, Shri. Nilkanth Halarnkar, Government of Goa, comprising Shri. E. Vallevan, IAS, Secretary (Fisheries); Dr. Shamila Monteiro, Director of Fisheries and Member Secretary, Goa State Pollution Control Board; Shri. Prathamesh Tulaskar, Officer on Special Duty to Hon’ble Minister; Smt. Megha Kerkar, Deputy Director of Fisheries; and Shri. Chandresh Haldankar, Superintendent of Fisheries. The visit was organized following an invitation from SORR INDIA and aimed at studying oil spill response mechanisms and initiatives to empower coastal communities. The objective was to understand sustainable practices for managing marine pollution, including oil spills and plastic waste, and to explore economic opportunities for affected fishing communities. SORR INDIA also intends to conduct training programmes to educate fishermen on oil spill management and containment techniques.
- Smt. Yashaswini B., Director of the Fisheries, Department of Goa State, India, participated in the FAO-organized International Fisheries Law Training Program held at the OFCC, Busan, South Korea, from 10th April to 30th April 2025. The

program covered a wide range of global fisheries law issues and included field visits, aiming to enhance capacity for effective marine fisheries governance.

- Shri. Chandresh Haldankar, Superintendent of Fisheries, attended the Sixth Edition of FAO International Training Course on Fisheries Port Inspection in support of the agreement on Port State Measures (PSMA), at Pukyopng National University, Busan, South Korea. The training programme was held from 12th May to 30th May 2025.

Coastal State Fisheries Meet 2025, Mumbai

CIFNET, Kochi

Fisheries Secretariat Conference, New Delhi

4th anniversary of PMMSY at New Delhi

Visit by Hon'ble Chief Minister at Fisheries Training Centre, Old Goa

Workshop at Bhubaneswar, Odisha

IX. AQUACULTURE

1. Allotment of permission letter for installation of open sea cage culture under Goa Mariculture Policy 2024-25

Under the Goa Mariculture Policy 2020, the Department of Fisheries has granted permission to five fish farmers for the establishment of open sea cage culture units. Each fish farmer has been allotted an area of 4000 square meters in the designated mariculture zone located off the coast of Anjuna, Bardez, Goa. Within this allotted area, each farmer is permitted to install two open sea cage culture units, with each cage measuring 20 meters in diameter and 10 meters in depth. These cage units are designed for the sustainable farming of marine fish species in the open sea environment, contributing to enhanced fish production, livelihood generation, and the promotion of mariculture as a viable economic activity in the state.


Permission letters distributed to the fish farmers at Head Office

2. Financial Assistance for Installation of River Cages under PMMSY

Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY), the Department provides financial assistance for the installation of fish cages in inland brackish water rivers. Through this initiative, the Department has supported nine fish farmers and entrepreneurs in establishing cage culture units. A total of 59 cages has been successfully installed across various inland rivers in the year 2024-25. This intervention has facilitated the effective utilization of open water bodies for fish production and has significantly contributed to livelihood generation and the promotion of sustainable aquaculture practices.


Installation of fish cages in inland brackish water rivers and fish catch

Biofloc Aquaculture

A) Financial Assistance for Biofloc Units under PMMSY

Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY), the Department provides financial assistance for the establishment of Biofloc systems in tanks and ponds. During the year 2024-25, the Department supported 8 fish farmers and entrepreneurs in setting up 10 Biofloc units. These units, catering to both brackish water and freshwater environments, were installed at various locations across Goa, promoting sustainable aquaculture and enhancing fish production potential in limited spaces.


Biofloc systems in tanks and ponds

3. Coastal Aquaculture Authority

Under the provisions of the Coastal Aquaculture Authority (C.A.A.) Act, the Department has recommended the registration of 03 new shrimp farms and the renewal of 05 existing farms for the year 2024–25. These recommendations aim to promote regulated and sustainable shrimp farming practices along the coastal regions.


Shrimp Farm

4. Fresh water fish seed hatchery Keri, Sattari-Goa.

The fresh water fish seed hatchery produced quality of fish seed of Indian major carp and common carp. During the year 2024-25, this hatchery has produced 1.62 million spawn and additionally 4 lakhs fingerlings were procured from outside state and supplied to fish farmers at reasonable rate. Further, 2 lakhs of fingerling were release in various reservoir in the state Goa.


Fresh water fish seed hatchery Keri

6. Estuarine Fish Farm, Ela Dhauji, Old Goa

White legged shrimp were stocked in Pond No. 05 and 06 (3300 m^2) at the Estuarine Fish Farm, Ela Dhauji, Old Goa, with a total of 58,000 seeds. After 80 to 85 days culture period, 850 kgs. of shrimp were harvested, generating revenue of Rs.2,97,500/-. The sale was held at the Directorate of Fisheries, Panaji, on a first-come-first-serve basis for the general public. Additionally, pearl spot and mullet were also stocked at the farm, with a culture period of 8-10 months.


Culture and sale of white legged shrimp

PROJECTS UNDERTAKEN UNDER PMMSY

1) Installation of Artificial Reefs in Goa

Artificial Reefs are engineered underwater structures designed to replicate the ecological functions of natural coral reefs. They play a crucial role in enhancing marine biodiversity, promoting habitat regeneration, and supporting fish populations by providing structured environments that integrate with the natural ecosystem. The inaugural deployment ceremony was held on 25th April 2025 at Querim, Pernem Taluka, marking a significant milestone in Goa's marine development efforts. The initial deployment of the Artificial Reefs was carried out at the identified sites at Keri and Anjuna. This initiative not only strengthens marine habitats but also supports the livelihoods of local fishing communities, encouraging sustainable fisheries development along Goa's coast.

Deployment of artificial reefs at Querim - Pernem

2) Construction of wholesale fish market at Margao

The construction of the state-of-the-art wholesale fish market at Margao, Blocks B and C, has been successfully completed. The facility has been formally handed over to the South Goa Planning Development Authority (SGPDA) for operational management and day-to-day maintenance. Equipped with modern infrastructure, the wholesale market is expected to significantly enhance the efficiency of fish trade in the region, ensure better hygiene standards, and improve the overall marketing ecosystem for fishermen and traders alike.


Wholesale fish market at Madgaon

3) Matsya Vahini – Eco-friendly Movable Kiosk

The Government of Goa has allotted four Matsya Vahini vehicles to individual beneficiaries for the purpose of supplying fresh fish to the public at reasonable rates. This initiative aims to improve last-mile delivery, enhance accessibility to quality fish produce, and stabilize market prices, especially in underserved and interior areas. The Matsya Vahini scheme reflects the state's commitment to strengthening the fisheries value chain and ensuring affordable nutrition for all.


Distribution of Matsya Vahini vehicles to beneficiaries

4) Installation of transponder

The Department of Fisheries, Government of Goa, was sanctioned 859 transponders for mechanized vessels, out of which 660 transponders have been installed as of 07/07/2025. Four control rooms have been set up at major jetties at Chapora, Malim, Khariwada & Cutbona. One transponder control room has been established within the existing control room of the Department.

Sl. No.	NAME OF JETTY	NO. OF TRANSPONDERS INSTALLED
1	Cutbona	285
2	Malim	227
3	Vasco	112
4	Chapora	36

Installation of transponder

XI. PEOPLE AND EVENT AROUND US

1. Narali Pornima

The Directorate of Fisheries, Government of Goa, celebrated Narali Pornima with great traditional fervor on 19th August 2024. As part of the auspicious occasion, a ceremonial offering of the traditional coconut (Naral) was made to the Sea Lord, symbolizing gratitude and prayers for the safety and prosperity of the fishing community. The ceremony was graced by the presence of Hon'ble Chief Minister, Dr. Pramod Sawant, Hon'ble Minister for Fisheries, Shri. Nilkanth Halarnkar, Mayor of the Corporation of the City of Panaji, Shri. Rohit Joe Monserrate, Secretary (Fisheries), Shri. E. Vallavan, IAS, and Director of Fisheries, Dr. Shamila Monteiro. The ceremony included an annual Satyanarayan Pooja for a fruitful fishing season. On the Occasion of Narali Pornima, Directorate of Fisheries, Government of Goa launched 3 pilot projects Matsya Vahini, Matsya Aahar and Artificial reefs which are aimed to create self-employment and employment generation and shall also be eco-friendly and sustainable towards nature.

Ceremonial offering of the traditional coconut by Hon'ble Chief Minister, followed by Satyanarayan Pooja and distribution of Sanction letters

2. Aqua Goa Mega Fish Festival 2024-2025.

The Aqua Goa Mega Fish Festival 2025, organized by the Directorate of Fisheries, Panaji, was a landmark event aimed at showcasing Goa's rich and diverse aquatic biodiversity, encompassing both marine and freshwater species. The festival served as a platform for awareness, education, innovation, and business promotion in the fisheries sector. The 8th edition of the festival was held over three days, from January 10 to 12, 2025, at the Open Field Ground, SAG Campal, Panaji. One of the major highlights of the event was the Aquarium Gallery, which featured an impressive display of live fish species endemic to Goan waters, thereby educating the public, students, and stakeholders about the state's aquatic wealth and conservation practices. In addition to exhibits, the event featured a series of seminars, workshops, and business-to-business (B2B) interactions, aimed at promoting innovative fishing techniques, sustainable aquaculture practices, modern technologies, and market linkages. These sessions benefited not only the fishermen and fish farmers but also attracted entrepreneurs, academicians, researchers, and the general public, thereby creating a multi-dimensional impact.

Glimpses of Aqua Goa Mega Fish Festival 2025

The event was professionally managed by M/s Mirchi Republic Media Production, which was appointed as the Event Management Agency through a transparent tendering process. The total cost for organizing the festival was Rs.5,94,72,000/- (inclusive of taxes).

3. Annual Enchantment Celebration – 2024

The Directorate of Fisheries celebrated its Annual Enchantment on 09th October 2024 at the Immaculate Conception Church, Panaji-Goa. The event was attended by the Director of Fisheries, Deputy Director, Gazetted Officers, and other officials of the Department.

The purpose of the Annual Enchantment celebration was to seek divine blessings for the well-being, safety, and prosperity of all fishermen and departmental staff.

Annual Enchantment at Immaculate Conception Church, Panaji

4. Inauguration Of Cutbona Jetty

The newly constructed 222-meter-long Cutbona Jetty, completed by the Goa State Infrastructure Development Corporation (GSIDC) and handed over to the Department in January 2019, was officially inaugurated by the Hon'ble Chief Minister, Dr. Pramod Sawant, in the presence of Hon'ble Minister of Fisheries, Shri. Nilkanth Halarnkar, Hon'ble Minister of Environment and Climate Change, Shri. Aleixo Sequeira, Local MLA, Velim constituency, Collector South Goa and Director of Fisheries Department, on 3rd November, 2024. This event marks a significant milestone in the enhancement of fisheries infrastructure in the State, aimed at supporting the livelihood of the fishing community and improving marine operations.

Inauguration of Cutbona Jetty

5. World Fisheries Day

Departmental officials participated in the celebration of World Fisheries Day 2024, held at Sushma Swaraj Bhawan, New Delhi, under the theme 'India's Blue Transformation: Strengthening Small Scale and Sustainable Fisheries'. On this occasion, the Mandovi Fishermen Marketing Cooperative Society Ltd., Malim, was conferred with the prestigious 'Best Marine Fisheries Co-operative/FFPO' award.

World Fisheries Day celebration at New Delhi

Also, on the occasion of World Fisheries Day, the Director of Fisheries, along with Departmental Officials, actively participated in the Matsya Mela-a premier flagship event organized by the Department of Fisheries, Government of Karnataka, held at Murudeshwara Beach, Bhatkal, Uttara Kannada District. The Department set up an informative stall showcasing various departmental schemes and initiatives, highlighting the efforts undertaken towards the development and welfare of the fisheries sector.


Matsya Mela, Murudeshwara

6. Republic Day Celebration Parade 2025

As part of the Republic Day Parade celebrations held on 26th January 2025 at Kartavya Path, New Delhi, Shri Chandrakant Velip, Deputy Director of Fisheries, Government of Goa, participated in the national event along with four distinguished fishermen from the state, who were invited as special guests in recognition of their notable contributions to the fisheries sector:

- Smt. Silvia Fernandes from Curtorim – Recognized for her pioneering efforts in open sea cage culture in Goa.
- Shri Digambar Morudkar from Porvorim – Honored for his entrepreneurial venture in setting up an ornamental fish kiosk.
- Smt. Bindiya Sawant from St. Estevem – Acknowledged for her work in riverine cage culture, promoting inland fish farming.
- Smt. Diksha Dessai from Honda – Commended for establishing an ornamental fish kiosk, contributing to alternative livelihoods in aquaculture.

Their presence at the Republic Day celebration reflects the national recognition of grassroots-level innovations and sustainable practices in the fisheries and aquaculture sectors in Goa.

Republic Day Parade attended by Dy. Director of Fisheries along with Fishermen as special guests

7. Fish Farmers' Day 2025

Fish Farmers' Day 2025 was celebrated with great enthusiasm on 10th July 2025 at the Curtorim Panchayat Hall. The event was graced by the Hon'ble Minister for Fisheries, Shri Nilkanth Halarnkar, and Member of Legislative Assembly, Curtorim, Shri. Aleixo Lourenco, along with other dignitaries and officials from the Department of Fisheries.

As part of the celebration, sanction orders under various fisheries schemes were distributed to eligible beneficiaries. In recognition of their outstanding contributions to the fisheries sector, certificates of appreciation were presented to dedicated fishers and turtle rescuers.

The event highlighted the importance of sustainable fishing practices and the role of fish farmers in ensuring food security and environmental conservation.

Fish Farmers Day at Curtorim Panchayat Hall

8. Distribution of sanction letters and vehicle key under Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA) and Pradhan Mantri Matsya Sampada Yojana (PMMSY) Scheme

As part of the “11 Saal Sankalp se Siddhi” programme held on 9th June 2025 at Rajiv Kala Mandir, Ponda-Goa, sanction letters under the DAJGUA scheme were ceremoniously distributed to the beneficiaries by the Hon’ble Chief Minister of Goa, Dr. Pramod Sawant. The event marked a significant milestone in the state’s commitment to empowering tribal communities through inclusive development initiatives. The distribution of sanction letters symbolized the government’s proactive approach in ensuring the benefits of the DAJGUA scheme reach the intended beneficiaries, reinforcing its dedication to social welfare and grassroots empowerment.

9. Dharti Aaba Janbhagidari Abhiyan

Sanction letters under the DAJGUA scheme were officially distributed to the beneficiaries by the Hon’ble Union Minister of Tribal Affairs,Shri Jual Oram,Government of India, during the 'Dharti Aaba Janbhagidari Abhiyan' programme held on 3rd July 2025 at the Municipality Hall, Sanguem, Goa. The event highlighted the Central Government’s continued commitment to the socio-economic up-liftment of tribal communities by ensuring direct outreach and effective implementation of welfare schemes. The presence of the Hon’ble Union Minister underscored the importance of participatory governance and reinforced the government's focus on inclusive development through the DAJGUA initiative.

Department officials at Municipality Hall, Sanguem

Distribution of key by Hon'ble Chief Minister

10. International Yoga Days 21st June, 2025 at Head Office, Panaji-Goa.

Officials of the Directorate of Fisheries, Goa, participated in the International Yoga Day celebration held at the Department's Head Office. The event aimed to promote physical and mental well-being among staff through guided yoga sessions, fostering a healthy and balanced lifestyle.

International Yoga Day celebration at the Department's Head Office

XII. VISIT BY CENTRAL/OTHER STATE GOVERNMENT OFFICERS

1. Visit by Dr.Bijay Kumar Behera (Chief Executive Officer, NFDB)

The Chief Executive Officer of the National Fisheries Development Board (NFDB), Dr. Bijay Kumar Behera, visited the Department of Fisheries, Government of Goa, on 29th and 30th December 2024. The purpose of the visit was to review the progress of fisheries-related projects sanctioned to the state and to inspect the implementation of projects funded under the Pradhan Mantri Matsya Sampada Yojana (PMMSY). During the visit, Dr. Behera assessed the execution status, interacted with departmental officials, and provided valuable inputs to ensure effective utilization of funds and timely completion of the initiatives aimed at enhancing the fisheries sector in Goa.


Visit to crab culture unit at Cuncolim and Margao wholesale fish market

2. Visit by Joint Commissioner of Fisheries and Assistant Commissioner of Fisheries, Government of Maharashtra, Maharashtra State.

The Joint Commissioner of Fisheries, Maharashtra, Shri Mahesh Deore, along with the Assistant Commissioner of Fisheries, Maharashtra, Shri N. Bhadule, visited the Malim Jetty on 27th November 2024 in Goa to gain insights into the ongoing fishing activities and the infrastructure facilities made available to fishermen at the site. The officials also took the opportunity to study the integration of water sports with fishing activities in the state, aiming to understand Goa's unique approach to coastal resource utilization and sustainable fisheries development. The visit facilitated knowledge exchange and fostered inter-state collaboration in fisheries and allied sectors.

Visit to Malim jetty and live fish vending unit

XIII. AWARENESS PROGRAMME

A. Community Interaction Programmes

Every year, community interaction programs are organized with the primary aim to raise awareness/programmes among fishermen about coastal security measures and the essential precautions they should adhere to before embarking on their fishing expeditions. This initiative plays a vital role in ensuring the safety of the fishing community. During these interactive sessions, fishermen are actively engaged to familiarize themselves with the coastal security protocols. They are provided with valuable insights on how to enhance their own safety and security while navigating into the waters. Moreover, these gatherings serve as a platform for introducing the fishermen to the array of schemes offered by the Fisheries Department, designed to support and uplift their livelihoods.

Additionally, these sessions foster an understanding of responsible fishing practices and the significance of conserving fish stocks. The knowledge shared emphasizes the importance of sustainable fishing techniques, promoting a balance between fishing activities and the long-term health of marine ecosystems. By imparting this valuable information, the sessions encourage the fishing community to engage in practices that ensure the continued availability of fish resources for future generations.

These programmes are conducted twice a month at various locations covering each and every village of the State. The programme is conducted in coordination with the Indian Coast Guard and the Indian Navy. During 2024-25, 29 nos. of programmes were conducted by the Department of Fisheries.

Community Interaction Programmes in coordination with the Indian Coast Guard and the Indian Navy

Tree Foundation

Department of Fisheries along with the collaboration of Tree Foundation conducted 24 awareness programs for artisanal fishers in Cola, Agonda, Calangute, Siolim, Malim, Odxel, Caranzalem, Talpona and Dona Paula, that were attended by around 700 fishermen. These programmes aimed to spread awareness on release of endangered marine species and sea turtles entangled in ghost net, fishing gears.

Community Awareness programme on Marine Ecosystem Conservation

B. Interaction Of the Fishermen/Fish Farmers/ Fisheries Association & Cooperatives of Goa by Secretary of Fisheries, Government of India

On 21st May 2025, the Secretary of Fisheries, Government of India, conducted an interactive session with fishermen, fish farmers, representatives of fisheries associations, and cooperatives from the state of Goa. The session served as a platform for stakeholders to share their experiences, challenges, and concerns related to fishing and allied activities in the state. The Secretary attentively listened to their grievances and assured that the issues raised would be reviewed for appropriate policy-level interventions and support. The interaction aimed to strengthen the partnership between the fishing community and the government, ensuring inclusive and sustainable development of the fisheries sector in Goa.

Interaction Of Secretary of Fisheries with fishermen and representatives of fisheries associations

C. Sagar Sajag

The exercise "Sagar Sajag" is conducted for enhancing the coastal security of the coast of Goa by verifying the credentials of fishing boats operating in the territorial waters of Goa. During the year 2024-25, the Department has actively participated in 01 exercise on 19th May 2024 along with the Coastal Security agencies.

D. Sagar Kavach

Sagar Kavach is a comprehensive coastal security exercise involving all security-related agencies. The exercise evaluates the intelligence, alertness, and preparedness of all stakeholders, including the general public. It also assesses the effectiveness of the coastal fishing community in providing early warnings of seaward threats. Two exercises are conducted every year. For the year 2024-25, the exercises were held on 26-27 March 2024 and 16-17 October 2024.

E. Awareness Programme on Sexual Harassment at Workplace

F. Awareness Programme on Breast Cancer

Urban Health Centre, Panaji-Tiswadi, Goa conducted Awareness Programme on Breast cancer. Screening camps through a technology called ibreast exam device was carried out.

Awareness Programme on Breast cancer by Urban Health Centre, Panaji

G. Swayampurna Goa

Department has conducted awareness camps under Swayampurna Goa Programme at various locations in the State to promote the schemes for fish farming, to encourage the youth and generate self-employment through fish farming. A total of 99 programmes conducted in the year 2024-25 under Swayampurna Goa programmes. A total of 58 programmes conducted from April 2025 to July 2025.

Scheme Awareness programmes under Swayampurna Goa

XIV. PATROLLING

The Department has implemented a comprehensive enforcement strategy to curb illegal fishing activities within territorial waters which includes regular patrolling, vigilant monitoring, and coordinated operations.

During the financial year 2024–25, a total of 23 cases were filed before the Adjudicating Officer, resulting in penalties and auctions of confiscated fish catch that generated revenue amounting to Rs.14,07,376/-. The Department operates a dedicated patrol vessel, *Ave-Maria-14*, which conducts routine surveillance, and joint patrolling efforts with the Coastal Police have further enhanced coverage and enforcement. A fully manned control room operates 24/7 to receive complaints and reports of suspicious fishing activities, and citizens are encouraged to report incidents via the helpline numbers 0832-2425263 and 9823010672.

Additionally, Department officials are stationed at four major jetties to monitor fishing operations, collect data, and issue passes to registered vessels, ensuring better oversight and regulatory compliance at key coastal points.

XV. CLEANLINESS DRIVES AT MAJOR FISH LANDING CENTRES OF GOA

As part of its ongoing commitment to maintaining hygiene and promoting sustainable fisheries, the Department of Fisheries, Government of Goa, has been conducting monthly cleanliness drives at various major fish landing centres and jetties across the state. The drive focused on removal of waste, plastic debris, and fish residue, improving sanitation conditions for both workers and visitors. Departmental staff, local stakeholders, and members of the fishing community actively participated in the effort.


Cleanliness drive at sub-office Malim jetty and Talpona jetty


Cleanliness drive at Vasco and Cutbona jetty


screening of boat crew members by Health Department

XVI. STATISTICS

- **No. of Vessels (Trawler/PurseSeiners) registered upto the financial year 2024-25.**

Sr. No	Mechanized fishing vessel	Total Nos.
1	Purse Seiner	**362**
2	Trawler cum Purse-seiner	**061**
3	Trawlers	**401**
	Total	**824**

- **Total Motorized and Non-Motorized Canoe**

Sr. No.	Block-wise	Non- Motorized Canoe	Motorized Canoe	No. of Fishing Canoe registered under MS Act
1	Bardez	85	414	499
2	Tiswadi	54	342	396
3	Pernem	13	176	189
4	Vasco	53	498	551
5	Salcete	30	212	242
6	Canacona	56	323	379
7	Ponda	3	6	9
	Total	**294**	**1971**	**2265**

- **Fishing License:**

The Department issues fishing license to the fishing vessels which is mandatory documents to be kept on-board. The total number of new fishing license issued to the trawlers/purse-seiners and fishing canoes for the year 2024 is as follows:

Sr. No.	Type of Vessel	Licences issued for the year 2024
1	Canoe (motorized and non-motorized)	1763
2	Mechanized fishing vessel	399
	Total	**2162**

- **Block wise total no. of canoes registered for the year 2024-25**

NORTH GOA

Sr. No.	Bardez	
1	Anjuna	1
2	Calangute	5
3	Candolim	2
4	Nerul	2
5	Reis Magos	1
	Total	11

Sr. No.	Tiswadi	
1	Agassaim	1
2	Cacra	1
3	Caranzalem	1
4	Mandur	1
5	Odxel	1
6	Panaji	1
7	Ribandar	2
8	Santa Cruz	2
	Total	10

Sr. No.	Pernem	Sr. No.
1	Arambol	4
2	Mandrem	2
3	Morjim	1
	Total	7

SOUTH GOA

Sr. No.	Canacona	
1	Cola	1
2	Galgibag	1
3	Mangan	1
4	Palolem	1
5	Talpona	1
	Total	5

Sr. No.	Mormugao	
1	Bogmalo	1
2	Sancoale	1
3	Vasco-da-gama	1
4	Vaddem	1
5	Kante Baina	2
6	Velsao	2
	Total	8

Sr. No.	Ponda	
1	Borim	1
	Total	1

Sr. No.	Salcete	
1	Benaulim	3
2	Betalbatim	1
3	Betul	1
4	Colva	5
5	Cuncolim	2
6	Varca	2
7	Velim	3
	Total	17

- **Sport Fishing Vessel:**

Sport fishing is a major draw for tourist in any State. The Department has 22 Nos. of Sport fishing vessels registered up to 2024-25.

- **Water Sports**

The Department issues no objection certificate to the Water Sports vessels operating at different beaches of Goa. The taluka-wise NOC's granted for the year 2024-25 are as follows:

Sr. No.	Taluka	No. of Water Sports Vessels
NORTH GOA		
1	Bardez	445
2	Pernem	006
3	Tiswadi	075
	Total	**526**
SOUTH GOA		
1	Canacona	039
2	Salcete	141
3	Vasco	018
	Total	**198**
	Inland waters	59
	Other State Registry	-
	Total	**59**

TALUKA WISE FISHING GEARS REGISTERED (2024-25)

Sr. No.	Type of Gear	Ponda	Tiswadi	Bardez	Salcete	Canacona	Mormugao	Pernem	Malim	Cutbona	Vasco	Total
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Purse-seine net			1	2		9		35	13	48	**108**
2	Trawl net								11		72	**83**
3	Drag net		2									**2**
4	Rampon net			1				1				**2**
5	Barrier (Futauni)	4	4									**8**
6	Sea gill net	2	14	14	13	7	17	6				**73**
7	River gill net	5	12	5	8	1	1	4				**36**
8	Sea cast net				5							**5**
9	Hook & line								22			**22**
10	Any other fishing Net/ Gear				3						1	**4**
	Total	**11**	**32**	**21**	**31**	**8**	**27**	**11**	**68**	**13**	**121**	**343**

Major Jetty Wise Marine Fish Catch from 2020-21 to 2024-25 (in tonnes)

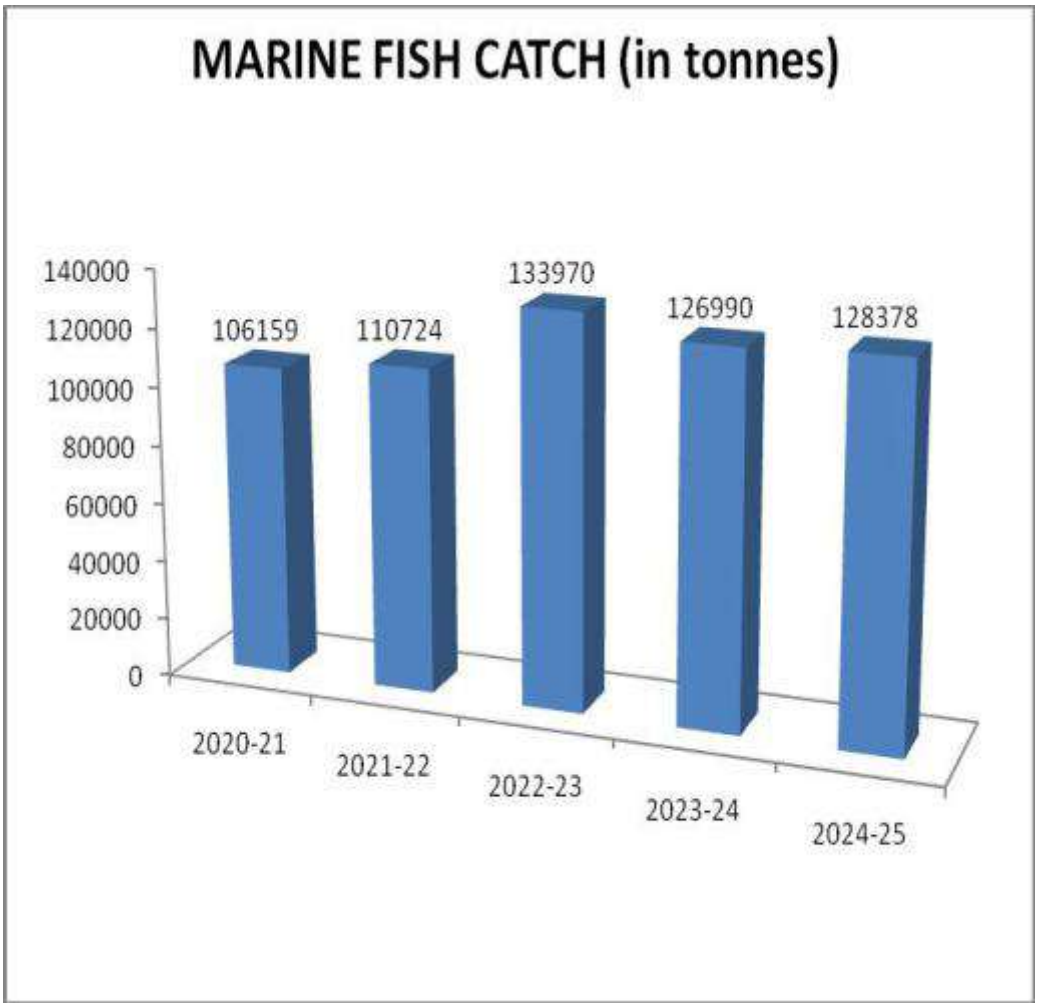
Year	Malim	Cutbona	Vasco	Chapora	Talpona	Total (Jetties)	Others	Grand Total (7+8)
1	2	3	4	5	6	7	8	9
2020-21	26915	27022	20830	511	1073	**76351**	29808	**106159**
2021-22	20160	25861	30557	1701	1402	**79681**	31043	**110724**
2022-23	18314	36300	39051	530	1129	**95324**	38646	**133970**
2023-24	18766	22806	55696	806	364	**98438**	28552	**126990**
2024-25	24662	42686	38869	326	323	**106866**	21512	**128378**

Marine Fish Catch

Fish Production of Goa for the period from 2020-21 to 2024-25

(in tonnes)

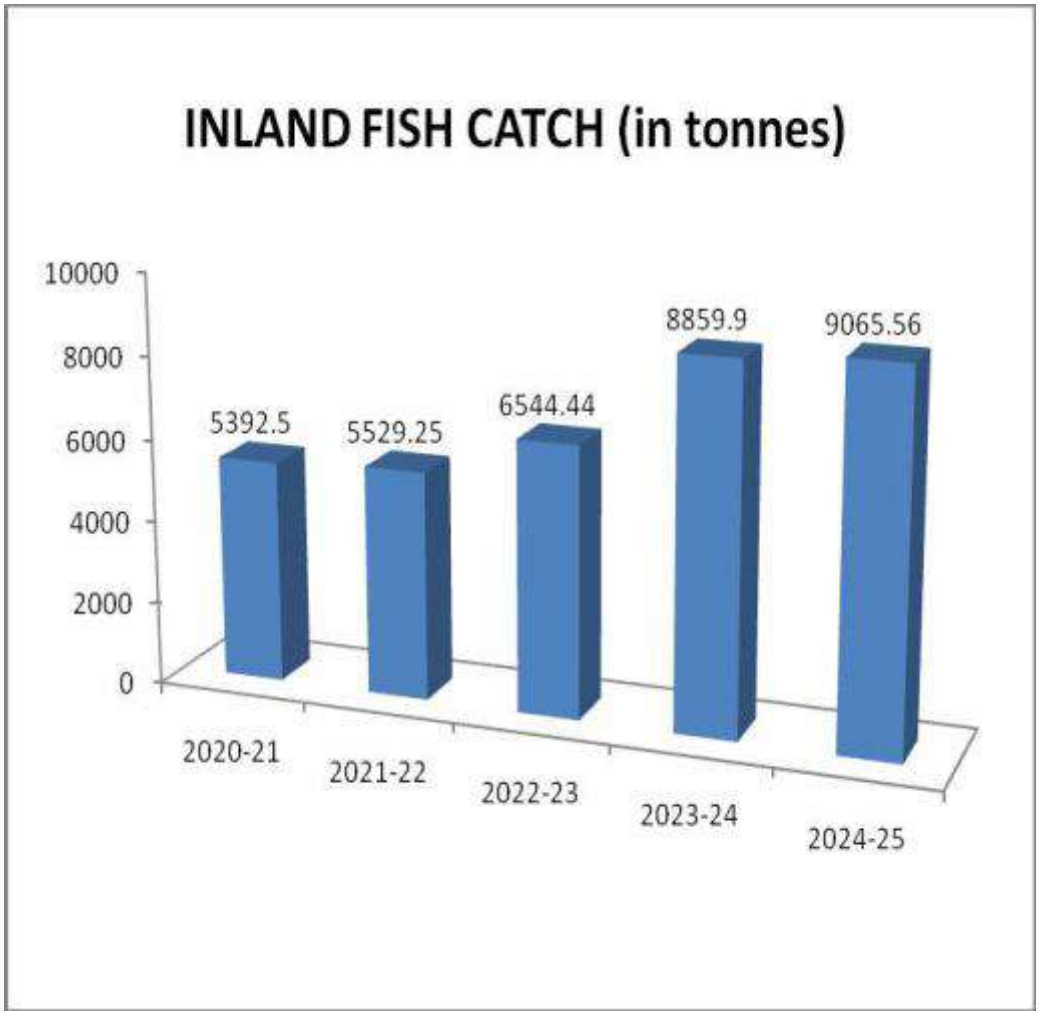
Year	2020-21	2021-22	2022-23	2023-24	2024-25
Catch (in tonnes)	106159	110724	133970	126990	128378



Inland Fish Catch (capture and culture)
Fish Production of Goa for the period from2020-21 to 2024-25

(in tonnes)

Year	2020-21	2021-22	2022-23	2023-24	2024-25
Catch (in tonnes)	5392.5	5529.25	6544.44	8859.9	9065.56



Financial Year-wise Marine fish production (species-wise) for the last five years (in tonnes)

Sr. No.	Species	2020-21	2021-22	2022-23	2023-24	2024-25
1	Mackerals (Bangdo)	28703	26188	55843	50213	43728
2	Sardines (Tarlo)	5218	13124	23719	18022	20705
3	Cat Fish (Sangot)	424	209	148	178	125
4	Shark fish (Mori)	891	407	246	442	223
5	Seer Fish (Wiswan)	4031	2927	1796	1594	2797
6	Prawns (Sungtam)	5470	4807	6810	6549	10071
7	Pomprets (Paplet)	1522	1823	449	594	496
8	Cuttle Fish (Manki)	1862	2748	1607	4013	6401
9	Tuna (Bokdo)	9915	15490	11212	15138	11651
10	Ribbon Fish (Balle)	2704	3251	2791	6308	5531
11	Reef Cod (Gobro)	271	624	288	1560	186
12	Kowala kowal (Velli)	420	319	518	149	215
13	Golden Anchovy (Kapsale)	71	63	15	236	27
14	Silver Belly (Kampi)	7280	5071	2223	943	868
15	Soles (Lepo)	1741	1982	1400	1384	1917
16	Silver Bar (Karli)	433	496	80	220	122
17	Crabs (Kurlio)	2168	1572	1250	1620	1455
18	Sciaenoids (Dodiaro)	2773	2582	2196	1627	980
19	Butter Fish (Soundale)	881	758	716	671	618
20	Others	29381	26283	20663	15529	20262
	Total	**106159**	**110724**	**133970**	**126990**	**128378**

Financial year-wise Inland fish production (species-wise) for the last five years (in tonnes)

Sr. No.	Name of the Fish	2020-21	2021-22	2022-23	2023-24	2024-25
I	**Capture Fish**					
1	Prawns (Sungtam) Big	185	134	241	477	230
2	Prawns (Sungtam) medium	175	180	302	506	1217
3	Prawns (Sungtam) small	415	648	394	401	831
4	Lady fish (Muddoshi)	136	193	209	153	223
5	Mullets (Shevto)	598	560	609	797	830
6	Gerres (Shetki)	95	80	92	140	157
7	Lutianus (Tamso)	123	106	241	281	164
8	Cat fish (Sangot)	566	408	526	831	472
9	Anchovy (Motialli)	51	42	107	57	70
10	Pearl spot (Kalunder)	446	420	430	842	684
11	Betki (Channok)	128	102	230	244	202
12	Milk fish (Gholsi)	3	5	30	6	14
13	Megalops (Keri)	25	24	67	54	60
14	Scatophagus (Mutre)	87	57	99	214	163
15	Ambasis (Burante)	364	224	430	856	891
16	Crabs (Kurlio)	567	410	548	791	672
17	Black water Clams (Kubye)	198	233	72	25	15
18	False Clams (Tisrio)	200	311	566	866	564
19	Oysters (Kalwam)	169	103	186	48	69
20	Mussel (Xinanee)	83	72	91	56	55
21	Lepo	13	0	0	1	0
22	others	36	8	51	39	20
23	Miscelleneous	662	1082	787	966	1081
	Total	**5325**	**5402**	**6308**	**8651**	**8684**
II	**Culture Fish**	67.5	127.25	236.44	208.90	381.56
	Total	**5392.5**	**5529.25**	**6544.44**	**8859.9**	**9065.56**

Export of Marine Fish and Fishery Products for the last 5 years

Quantity in M. tonnes
Value in Rs. lakhs

Sr. No.	Item		2020-21	2021-22	2022-23	2023-24	2024-25 #
1	Fr. Shrimps	Q V	4756 21357	3578 18826	3959 19015	5035 21353	1951 7858
2	Fr. Cuttle Fish	Q V	1123 2340	1173 3511	59 192	600 2122	831 2722
3	Fr. Squids	Q V	2522 7239	2805 10633	4594 18399	7852 20394	5233 14661
4	Fr. Fresh Fish	Q V	7909 11924	28104 39412	53460 60949	40487 47231	35913 50460
5	Fr. Seer Fish	Q V	-	-	-	-	-
6	Other fishes	Q V	239 665	398 683	1261 2206	1194 2320	1541 3180
7	Dried Fishes	Q V	-	-	-	-	-
	Total	**Q V**	**16549 43525**	**36058 73065**	**63333 100761**	**55167 93420**	**45469 78881**

Source: Marine Product Export Development Authority (MPEDA), Mangalore, Karnataka.
#Provisional

XVII. ARTICLES BY DEPARTMENT PERSONNEL

"CRAFT USE FOR FISH HARVESTING IN GOA"

Shri. Chandrakant Velip
Deputy Director of Fisheries

1. Introduction

Goa, is located on the south-western coast within the Konkan region. It is bordered by Maharashtra to the north, Karnataka to the east and south, and the Arabian Sea to the west. The coastline spans 104 km, with a continental shelf of 10,000 km² and 250 km of inland waterways, along with numerous ponds and tanks covering approximately 100 hectares. Major rivers such as the Terekol, Chapora, Mandovi, Zuari, Sal, and Talpona flow westward into the Arabian Sea, forming vital estuarine ecosystems ideal for fisheries and fishing crafts. Key reservoirs-Salaulim, Chapoli, Anjunem, and Amthane—serve as important sources for inland fisheries. Fishing has long been central to Goa's coastal communities, contributing substantially to the local economy through marine and freshwater capture fisheries and aquaculture. Fishing has traditionally been one of the Chief occupations and the source of livelihood of the people living in the coastal areas of Goa. Marine and fresh water capture fishery along with freshwater and brackish water Aquaculture contributes significantly to the state's economy. Fishery and its related activities provide employment, trade and economic well-being to the people of Goa. Hence, it is important to carry out fishing activities in a sustainable manner. The various kind of traditional craft use by the fishermen to catch fish are fishing canoe, dugout canoe, voddi, and in mechanized sector trawler and purse-seine boat are used as major craft. In recent year the Sports fishing vessel is also permitted to operate in Sea and in land water for recreation purpose. The foreigner visit in the state is very fond of such type of sports fishing wherein they capture the Fish and released in live state.

2. Definition of Fishing Craft and Gear.

Fishing gear refers to the equipment used to catch fish, while crafts serve as platforms for fishing operations and transporting crew. Together with auxiliary tools and manpower, these form a fishing unit, whose size and efficiency depend on the distance to fishing grounds, methods of catch handling, and local geographical

features. Goa has a long tradition of using diverse types of crafts and gear tailored to marine and inland fisheries. Depending on water conditions, target species, and fish size, some nets are used independently, while others require craft support. This blend of traditional knowledge and evolving fishing technology plays a vital role in boosting commercial fish production across the state.

As per Clause 12, Section 3 of the Merchant Shipping Act, 1958, a "fishing vessel" is any mechanically powered ship dedicated to profit-based sea fishing. In Goa, fishing vessels up to 23 meters in length are registered under Section 435 G of this Act. Inland craft, by contrast, are registered under the Inland Vessels Act through the Captain of Ports Department, ensuring regulatory oversight of both coastal and inland fisheries. The total of 3019 fishing crafts are register in the state of Goa as per the MS Act which are used for harvesting the fish resource in sustainable method

Fishing craft use for Marine Fish harvesting in Goa.

1) Dugout Canoes/voddi/ponyol

The voddi or ponyol called in local language Konkani is one of traditional craft used by the traditional fishermen for fishing near to the shore of sea within 5 km from the coast. It is small wooden made boat. These are constructed from large wood logs. These logs are hollowed by scooping inner part. The bottom of canoe is thicker in size than both sides. The normal size of this canoe is range from 5 m to 8m long and the breath and height is around 50-60cm.

The gear use by fishermen on voddi for catching fish are Gill net and cast net. The voddi is also use to operate the Goan traditional beach seining gear locally known as Rampon. The boat is generally operated by manually and no mechanical engine is use in such type of craft. The wooden pole is also entangled on one side of voddi for maintaining the balance of voddi in sea. The voddi require low draft for operation and can be berth on the bank of river or on the beach. This voddi is normally operated by single person.

2) Non-motorized and motorized Fishing craft (canoe).

Small fishing crafts used by traditional fishermen in Goa operate up to 12 nautical miles from the coast and are typically made of wood or fibre-reinforced plastic (FRP), with FRP being more common today. The state permits construction of such crafts up to 38 feet in length, 1–1.5 meters in height, and 1–2 meters in breadth. These boats are powered by outboard or inboard engines of up to 10 horsepower, often carrying dual engines for safety on longer trips. Equipped mainly with gill nets of varying mesh sizes, they are classified as traditional crafts and are allowed to operate year-round—even during the fishing ban—as they support the livelihoods of local communities, they are registered under the Merchant Shipping Act and licensed under the Goa Marine Fishing Regulation Act. The major catch from this craft are mackerel, sardine etc. The number of crew operated on this craft are 5 to 6. The safety equipment such as life buoys, life jackets is also mandatory on this craft as per the MFR Act.

3) Trawler Fishing vessel.

Trawlers are among the most widely used and longstanding fishing vessels in Goa, built from wood, fibre-reinforced plastic (FRP), or steel. Ranging from 10 to 23 meters in length and powered by engines up to 300 HP, these boats are fitted with trawl nets, winches, and mast-boom setups for efficient hauling. Vessels up to 15 meters fish within 12 nautical miles, while larger ones operate beyond into the EEZ. Trawlers support both bottom and mid-water fishing, targeting species like shrimp, mackerel, flatfish, and sardines. Though bull or pair trawling is banned, single-vessel operations continue with modern navigation and communication tools, and safety equipment as mandated by the Goa Marine Fishing Regulation Act.

4) Purse-seiner Fishing vessel.


The purse-seine vessels are equipped with purse-seine nets as well as dingy boats and hence they are called as purse-seiners. Purse-seining is a method to capture large shoals of demersal fish such as prawns and pelagic fish close to the surface such as sardines, mackerels, tuna, anchovies, herring, salmon by encircling them with a large purse-seine net. There are three types of purse-seiner boat operated in Goa depending on the material use for the construction i.e. wooden, steel and FRP purse-seiner. The State Government is registering the Purse-seine boat up to 23 mts in length and the Engine allow to install on the boat is up to 300 HP. Purse-seiner vessel is normally operated beyond the 5km from coast in territorial water and in the EEZ area in depth of up to 200mts, according to the size of vessel, mesh size of net and targeted species. There are around 40 to 45 crews working on the vessel along with one tandel. Purse- seiner are also equipped with a power a hydraulic winch to haul in the net. The vessel is going to fishing trip of 10 to 15 days and bring the fish upto 20 tonnes (App) per trip depending on the size of vessel. The Boat is also well equipped with various communication as well as navigation equipment as installed in trawler vessel. The safety equipment such as life buoys, life jackets is also mandatory on this boat as per the MFR Act.

5) Sport Fishing Vessel

Sport fishing is a popular tourist activity in Goa, with vessels permitted for recreational fishing where fish are caught and released alive. Encouraged by the state government due to high interest from foreign tourists, these boats are made of FRP, operate within 5 km from the coast in shallow waters, and require minimal draft for berthing along rivers. Registered under the MS Act, 1954 and licensed under the MFR Act, these vessels use hook-and-line gear and are equipped with standard navigation, communication, and safety tools. They typically launch from floating jetties, pontoons, or directly from beaches.

Fishing craft use for inland Fish harvesting in Goa.

Inland fishing crafts in Goa are small boats used primarily in rivers, lakes, reservoirs, canals, and estuaries by artisanal fishermen residing along the shorelines. These crafts also serve to transport feed, seed, and materials for inland cage culture operations and play a vital role in supporting the livelihoods of small-scale fishing communities.

1) Ponyol /voddi/canoe

Ponyol is the small artisanal traditional wooden or FRP craft use in river, estuary, creek, reservoir to catch fish operated manually with oars. The length of this craft is varying from 3 to 5 mts. The main gear use for fishing on this craft are gill net, cast net, hook and line etc. They are also employed for fixing stake nets and for Futauni fishing along riverbanks. Recently small motor of 2hp to 5hp is also use to propel the craft for reaching the fishing ground. Common catches include shrimp, crab, mullet, and sea bass. These vessels are registered under the Inland Vessels Act by the Captain of Ports Department of the Government of Goa.

Conclusion

The success of fishing largely depends on the choice of gear and craft used to target and capture specific fish species. Over generations, traditional fishermen have skillfully refined their techniques to suit local water bodies and optimize their catch. While age-old methods still hold value, many have evolved with modern advancements in design and construction. Embracing new technology can boost the productivity of small-scale fisheries, but it must be paired with responsible management and regulation to ensure sustainability.

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“GLOBAL WARMING, MARINE DE-OXYGENATION, AND THEIR IMPACT ON FISHERIES”

Dr. Smita Mazumdar
Deputy Director of Fisheries

The health of our planet's oceans is intrinsically linked to the well-being of humanity, particularly for the billions who rely on marine ecosystems for food and livelihoods. However, a growing, often unseen crisis is unfolding beneath the surface: the synergistic effects of global warming and marine de-oxygenation are fundamentally altering ocean chemistry and biology, posing an unprecedented threat to global fisheries.

Global Warming's Embrace: *A Warmer, Less Habitable Ocean*

Global warming, primarily driven by anthropogenic greenhouse gas emissions, has led to a significant increase in ocean temperatures. The ocean has absorbed over 90% of the excess heat generated by these emissions, transforming it into a vast heat sink. This warming has several profound implications for marine life:

Reduced Oxygen Solubility: Warmer water simply cannot hold as much dissolved oxygen as colder water. This fundamental physical property means that as the ocean warms, its capacity to sustain oxygen-dependent life diminishes.

Increased Metabolic Rates: For cold-blooded marine organisms, including most fish, higher temperatures directly translate to increased metabolic rates. This means they require more oxygen to function, even as less oxygen becomes available in their environment.

Habitat Compression and Range Shifts: As temperatures rise, many fish species are forced to seek cooler waters, leading to shifts in their geographical distribution. This can push species towards the poles or into deeper waters, disrupting established ecosystems and often concentrating fish into smaller, more vulnerable areas. For example, some commercially important fish populations, like certain tuna species, are projected to move further east, impacting traditional fishing grounds.

Altered Reproductive Cycles and Growth: Warming waters can interfere with critical timings of reproduction, endangering offspring survival. While some studies suggest faster growth rates in warmer waters for young fish, this often leads to smaller adult body sizes and reduced overall yields, as the ecosystem's carrying capacity for larger fish declines.

Marine De-oxygenation: *The Ocean's Suffocating Embrace*

Compounding the effects of warming is marine de-oxygenation, the reduction of dissolved oxygen in oceanic and coastal waters. This phenomenon is driven by two primary factors:

Warming-Induced Stratification: Warmer surface waters become more buoyant and less likely to mix with cooler, deeper waters. This increased stratification prevents oxygen-rich surface waters from replenishing the naturally oxygen-poor deeper layers, exacerbating oxygen depletion.

Nutrient Pollution and Eutrophication: Runoff from land-based agriculture, sewage, and industrial waste introduces excess nutrients into coastal waters. This triggers massive algal blooms. When these algae die and decompose, the process consumes vast amounts of oxygen, leading to the creation of "dead zones" – areas where oxygen levels are so low that most marine life cannot survive. The number and size of these dead zones have been expanding exponentially since the mid-20th century.

Impact on Fisheries: *A Looming Crisis*

The combined impact of global warming and marine de-oxygenation presents a multifaceted threat to global fisheries, affecting both the abundance and accessibility of fish stocks:

Reduced Fishable Biomass: Lower oxygen levels directly impact the growth, survival, and reproduction of fish. When conditions become critical, it leads to reduced population sizes and overall biomass available for harvest.

Changes in Fish Distribution and Catchability: As fish avoid low-oxygen zones, their distribution patterns shift. This can force fishing vessels to travel further, increasing operational costs and making traditional fishing grounds less productive. In some cases, fish may aggregate at the edges of hypoxic zones, making them temporarily easier to catch, but this can mask underlying population declines and lead to unsustainable harvesting.

Vulnerability to Overfishing: Species already stressed by overfishing are particularly susceptible to the additional pressures of warming and de-oxygenation. Reduced genetic diversity and smaller populations make them less resilient to environmental changes.

Disruption of Food Webs: The loss of oxygen-sensitive species can alter the delicate balance of marine food webs. This can lead to the proliferation of low-oxygen tolerant species, such as jellyfish, and negatively impact higher trophic levels, including commercially valuable fish that rely on affected prey.

Economic and Social Consequences: For coastal communities and nations heavily reliant on fisheries, these changes pose a significant threat to livelihoods, food security, and cultural heritage. The shift in fishing grounds can also lead to disputes over resource access and management.

Addressing the Challenge

Mitigating the adverse effects of global warming and marine de-oxygenation on fisheries requires a concerted global effort. This includes: Aggressive Reduction of Greenhouse Gas Emissions: The most fundamental step is to drastically cut carbon emissions to slow ocean warming and acidification.

Controlling Nutrient Pollution: Implementing stricter regulations and practices to reduce agricultural runoff, improve wastewater treatment, and manage aquaculture waste is crucial for combating coastal de-oxygenation.

Adaptive Fisheries Management: Fisheries management strategies must evolve to account for changing fish distributions, population dynamics, and ecosystem health. This includes dynamic quota systems, protected areas, and international cooperation.

Investment in Research and Monitoring: Continued scientific research is essential to better understand these complex phenomena and predict their future impacts, allowing for more informed decision-making.

The challenges posed by global warming and marine de-oxygenation are formidable, but by understanding their interconnectedness and acting decisively, we can work towards safeguarding our oceans and ensuring the long-term sustainability of global fisheries for future generations.

“Climate Chaos Meets Marine Debris: A Perfect Storm for Coastal Fisheries”

Dr. Christabelle Fernandez
Fisheries Officer

Coastal fisheries are vital for global food security, livelihoods, and biodiversity. They support millions of small-scale fishers and supply a significant share of the world’s protein. However, these essential ecosystems now face mounting pressure from two intertwined global threats: climate change and marine debris, especially plastic pollution. While each is damaging on its own, their combined effects are creating unprecedented stress on marine environments and the communities that rely on them.

Addressing these interconnected challenges is crucial for the future of coastal fisheries. Climate Change Impacts on Coastal Fisheries Climate change impacts coastal fisheries through various stressors such as ocean warming, sea level rise, acidification, and stronger storms. Warmer oceans are shifting species distributions, with fish migrating toward cooler waters, thus reducing catches in traditional fishing grounds and threatening local livelihoods. This leads to declining catches in traditional fishing grounds, threatening the livelihoods of local fishers who cannot easily adapt or move with these shifting stocks. Ocean acidification, caused by rising carbon dioxide levels, impairs the ability of marine organisms like shellfish and corals to form shells and skeletons. More frequent and intense storms damage infrastructure, disrupt fishing operations, and accelerate coastal erosion contributing to habitat loss, further reducing the productivity of coastal fisheries.

Marine Debris and Its Impacts

Marine debris, particularly plastics and derelict fishing gear, has become a pervasive pollutant in marine environments. This debris originates from a variety of sources including land-based waste, stormwater runoff, and lost or abandoned fishing gear. Marine animals ingest or become entangled in plastics, leading to injury, starvation, or death—disrupting food webs and threatening biodiversity. Debris that

settles on coral reefs, seagrass beds, or the seafloor can physically damage these ecosystems. Ghost gear i.e. abandoned or lost nets and traps continues to damage marine life indiscriminately, depleting stocks and harming non-target species like turtles and seabirds. Furthermore, plastic debris can act as a vector for chemical pollutants and invasive species. It is note that plastics can absorb persistent organic pollutants (POPs) and other toxic chemicals from seawater, which then bio-accumulate through the food chain, posing risks to marine life and human health. Ingested plastic particles and associated toxins have been found in a wide range of marine species, raising concerns about human health risks through seafood consumption.

The Dangerous Intersection: Climate Change and Marine Debris

While climate change and marine debris are often addressed in isolation, their interaction creates amplified risks for coastal fisheries. Stronger storms increase the volume of marine debris by damaging coastal infrastructure and fishing gear, much of which ends up in the ocean. Shifting ocean currents and winds spread debris to new areas, polluting previously unaffected habitats. Further, as fisheries shift into new waters due to climate-driven species migrations, fishers often operate in unfamiliar or unregulated areas, increasing the risk of gear loss and environmental damage. Additionally, ecosystems already stressed by climate change—such as bleached coral reefs or acidified waters—are more vulnerable to plastic-related damage. Shellfish exposed to acidification may be further harmed by micro-plastic ingestion, reducing survival and reproduction rates.These interacting pressures compound the challenges faced by coastal fisheries, reducing resilience and adaptability. The result is a feedback loop in which degraded ecosystems and declining fish stocks make communities more vulnerable to both environmental and socioeconomic shocks.

Socioeconomic Consequences

The combined impacts of climate change and marine debris are profoundly affecting coastal communities. Small-scale fishers often lack the financial and technical resources needed to adapt to changing ocean conditions. Declining stocks and gear losses make livelihoods precarious, increasing food insecurity in regions where fish is a dietary staple. Competition over dwindling resources can lead to overfishing or conflict, further degrading ecosystems. In some regions, this pressure may lead to forced migration, undermining cultural traditions, social cohesion, and regional stability.

Toward Integrated Solutions

Tackling these intertwined challenges requires a holistic, ecosystem-based approach. Fisheries management must incorporate climate adaptation, such as protecting critical habitats, adopting sustainable gear, and implementing early warning systems for extreme weather.

Further, to address the compounding challenges of climate change and marine debris in coastal fisheries, Benthic mapping can play a vital role in this process by offering detailed spatial data on seafloor habitats. By integrating this information into marine spatial planning, policymakers can identify biodiversity hotspots, track habitat degradation, and design targeted conservation zones. This approach enhances resilience by ensuring that vulnerable or productive ecosystems receive focused protection.

Community engagement is equally critical. Empowering local fishers through education, co-management, and stewardship initiatives improves compliance and enhances the resilience of fisheries.

To conclude, Coastal fisheries are at the frontline of two converging crises: climate chaos and marine debris including plastic pollution. Together, they form a perfect storm of ecological disruption, economic hardship, and social vulnerability.
Top of Form
Bottom of Form

By recognizing and responding to the interconnectedness of climate change and marine debris and by embracing integrated, adaptive management approaches—rooted in science, supported by data, and driven by community leadership—we can build resilient fisheries and protect the communities that depend on them and have sustainable fisheries for generations to come.

DESIGNING AND FABRICATION OF AN AQUARIUM

Ms. Riddhi Savoiverekar
Sagar Mitra

An aquarium is a transparent tank or container, typically made of glass or acrylic, where fish, aquatic plants, and decorative elements are arranged to create a visually pleasing aquatic environment. Besides being a hobby, aquarium keeping also promotes relaxation and enhances interior aesthetics.

- **Key Factors to Consider When Constructing an Aquarium**

1. **Tank Size and Fish Capacity**

- The number of fish an aquarium can support is primarily determined by the surface area (Length × Breadth), not just the volume.
- General rule of thumb: Allow approximately 75 cm^2 of surface area per 2.5 cm of fish length (excluding the tail).
- Overcrowding leads to poor water quality, stress, and health issues for fish.

2. **Location of the Aquarium**

- Place the aquarium away from direct sunlight to prevent excessive algae growth and temperature fluctuations.
- Ensure the location is stable, away from vibrations and heavy traffic, and can support the tank's weight when filled with water and decorations.

3. **Tank Shape and Surface Area**

- A larger surface area allows better oxygen exchange, which is crucial for fish health.
- The ideal length-to-height ratio of an aquarium tank is 3:2 to maximize surface area and provide swimming space.

4. **Minimum Tank Dimensions**

- For beginners, a good starting size is 60 cm (L) × 30 cm (W) × 30 cm (H). Smaller tanks are harder to maintain due to rapid parameter changes.

5. **Aquarium Shapes**

- Rectangular (most common and practical)
- Triangular (for corners)
- Square
- Trapezoid
- Globular (less surface area, not ideal for most fish)
- Hexagonal

6. Materials Required

- Glass or acrylic sheets
- Aquarium-safe silicone sealant
- Filtration unit
- Air pump
- Lighting system
- Heater (if keeping tropical fish)
- Substrate (gravel/sand)
- Plants and decorations

7. **Water Filtration and Aeration**

- A filter helps remove waste and maintain water quality.
- An air pump supports oxygen exchange, especially in taller or densely stocked tanks.

8. **Temperature Control**

- Tropical fish require stable temperatures (around 24–28°C).
- A thermometer and heater are essential for temperature-sensitive species.

9. **Aquascaping**

- Arrangement of rocks, plants, driftwood, and ornaments to mimic natural habitats and reduce fish stress.
- Live plants help improve water quality by absorbing nitrates and providing oxygen.

10. **Maintenance Considerations**

- Regular water changes (20–30% weekly) and gravel cleaning are vital.
- Monitor pH, ammonia, nitrite, and nitrate levels to keep the environment safe.

- **Fabrication of Aquariums**

1. Glass Thickness

- Smaller tanks (e.g., under 60 cm in length): 4–5 mm thick glass is usually sufficient.
- Medium tanks (up to 120 cm): 6–10 mm thick glass.
- Larger tanks (over 150 cm): 10 mm or more, with additional bracing or support.

- The greater the water volume, the more pressure it exerts on the tank walls. Improper thickness can result in bowing or breakage.

2. Size of Glass Panes

- Whether front and back panels rest on the bottom pane or are fixed to the side margins.
- Fixing the front and back panels to the side edges of the bottom pane offers stronger structural integrity.
- Always measure accurately and label each pane before assembly.
- Consider a small gap (usually 1–2 mm) between panes for silicone bonding.

- **How to Calculate Aquarium Water Volume?**

Knowing the volume of your aquarium is essential for dosing medications or water treatments, stocking fish appropriately and choosing the right filtration and heater capacity.

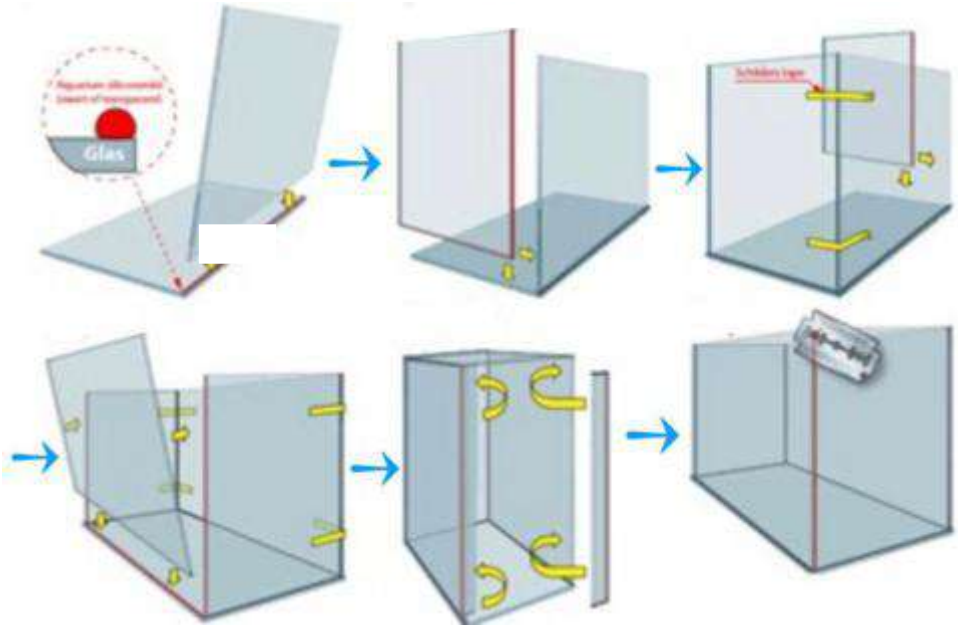
Volume Calculation Formulas

1. **In Centimeters (for Liters):** Volume (Liters)=L×W×H/1000
2. **In Feet (for Cubic Feet):** Volume (ft^3)=L×W×H OR Volume (gallons)=Cubic Feet×6
3. **In Inches (for Gallons):** Volume (ft^3)=L×W×H/1728 OR Volume (gallons)=ft^3×6

Note: 1 Cubic Foot = 1728 Cubic Inches = 6 US Gallons

- *Steps for Fabrication / Sealing of a Rectangular Aquarium*

1. Choose a flat, even surface. Spread a polythene sheet, newspaper, orthermocol to protect the base.
2. Use a glass cutter and scale to cut glass to the required sizes for the tank (front, back, sides, bottom).
3. Wipe all edges with acetone or alcohol to remove dust and grease for better sealing.
4. Place the back panel flat on the prepared surface.
5. Apply a thin layer of silicone along one edge of the back panel.
6. Carefully press the bottom panel along the edge of the back panel, forming an L-shape.
7. Apply sealant to the relevant edges and fix the side panels in place one by one.
8. Use masking or duct tape on the outer corners to hold panels in position while the sealant cures.
9. Let the silicone set for at least 24 hours undisturbed.
10. Once cured, remove any excess sealant with a sharp blade.
11. Fill the tank with water to check for leaks. Observe for at least a few hours.
12. Empty and wash the tank thoroughly to remove any residue or acetic acid from the sealant.



Aquarium design and fabrication training by Fisheries Department

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STUDY TOUR TO NORWAY

Dr. Shamila Monteiro
Director of Fisheries

The Hon'ble Minister of Fisheries and the Director of Fisheries along with few fishermen from Goa visited Norway from 25th February to 2nd March 2024 for attending Agdar – India Business Seminar held at Kristiansand wherein more than 100 interested businessmen from Norway had participated who were keen to engage with diverse sectors in India including fisheries.

During the visit, Hon'ble Minister of Fisheries Shri Nilkanth Halarnkar addressed the seminar and presented Government of Goa's policy in Fisheries sector wherein he engaged the Norwegian enterprise working in the field of aquaculture to explore the possibilities of developing the cage farming in Goa.

Further, the site visit was organised by the Business Region Kristiansand (the commerce Department of the city Government) for the delegation to the Global Ocean Technology (GOT) and Mandal shipyard, specialised in manufacture of fishing vessels.Further, they also went on board one of the latest and large fishing vessels (Sille Marie) of 67 meters which had on-board fish processing unit.

Thereafter, we visited Institute of Marine Research (IMR) at Arendal. There, an overview of the research activities undertaken by IMR including assessment of fish stock as well as basic research of marine ecosystem, aquaculture, fisheries, nutrition, food safety and animal welfare was explained. The Hon'ble Minister and his team later went on board IMR's research vessel GM Dannevig Arendal. The institute has identified the fish breeding grounds of the various field along the coast of Norway which helps the Government to take management steps to ensure good stocks.

Further, a brief site visit was also organised to a blue mussel farming at Larvik carried out by Norwegian Mussel Company AS where they have been carrying out offshore mussel farms using New Zealand technique and smart farm technology who are also in the process of setting up similar farms in Goa in the coming months in the name of Mother Oceans.

The visit of the Hon'ble Minister was preceded by visit of the Director of Fisheries, Dr. Shamila Monteiro along with a team of entrepreneurs/fishing vessels owners from Goa to Bergen and Alesund. In Bergen, they visited NCE Seafood Cluster to understand the operation of the cluster and its activities for sustainable

aquaculture and fisheries and further the visit to NOFIMA was arranged to engage Norwegian researchers working on innovative but natural feed for fishes as well as to utilize various by-products of fish processing in a sustainable manner. NOFIMA is a renowned institute of the Government of Norway working in the improvement on Fisheries sector and has many research stations in Norway. The institute has held up with Government of West Bengal for improvement in the fisheries sector.

They also visited Grieg Seafood AS, which is one of the largest salmon farming and processing companies. Views were exchanged on various aspects of salmon breeding and efforts made by Norwegian enterprises to reduce damage to the natural ecosystem.

Further, the delegation visited Hatch Blue AS in Bergen, which specializes in providing consultancy services for aquaculture and seafood and provides pre-seed funding and incubation programs. They also had elaborated on two enterprises they were funding in India, who use low energy green processing technology to shape seaweeds into carbon efficient solutions.

The Delegation also visited control centre of Blom fisheries in Rong near Bergen, which monitors remotely all their off shore salmon farms spread over several places in Norway.

Also, a visit to offshore fish cages of Engesund Fiskeoppdrett AS was organised to experience the operation of open sea cages. The open sea cages were highly sophisticated with full automation in maintaining water quality and feeding.

In Alesund, delegation interacted with ship brokers and one of the largest ship design companies VARD AS, they also visited yet another large fishing vessels which had on-board fish processing unit including individual quick frozen (IQF) as well as contact freezer. The company has designed high-tech deep-sea fishing vessel with multi-gear technology which could be very useful for the designing of deep-sea fishing vessels in Goa.

They also visited the salmon and trout processing company, HOFSETH AS, and took a tour of their processing unit. Further we visited one of the professional fishing equipment stores Fiskevegen, where we learnt about the automatic jiggers and modern fishing equipment.

The visit was organised by the Ambassador of India to the Kingdom of Norway and has also given following suggestions for Goa Government to consider:

a) Establishing Centre of excellence on Sea Bass or similar Indian fish species similar to the model adopted by Norway for Salmon. This centre could have expertise to support the entire ecosystem of Sea-bass or other species for aquaculture, starting with processing to breeding to cage culture to marketing.

b) Building a deep-sea fishing vessel with an onboard fish processing unit by taking the Norway expertise in designing the same and using it as a demonstrative vessel which could be leased to fishermen for short duration on experimental basis to see the feasibility of the fishing vessel for helping the fishermen to develop capabilities to harvest deep sea fish stocks.

c) Collaboration with Institute of Marine Research (IMR) in Norway to develop expertise to study and assess fish stock to help and guide fishermen.

d) As the Norwegian Mussel Company is planning to set up an offshore blue mussel farm in Goa, opportunities can be explored for identifying fishermen from Goa who could also consider establishing similar mussel farms by collaborating with Norwegian Company.

e) Request NCE Seafood Cluster to share with us their model which could then be modified suitably to our situation to develop similar model in Goa and take the assistance from the Innovation Norway in this regard as they are the key stakeholder of NCE Seafood cluster.

f) Working on a joint project with NOFIMA or IMR to study the local fish market/practices in Goa to develop local solutions for fish feed and sustainable use of fish waste/by-products.

In view of above, to benefit the fishermen in the state it is proposed that the Government may consider tying up with the Norway Institutes like NOFIMA and IMR for the following:

1. Set up a Centre of excellence for culturing Sea bass and Cobia (marine fin fish).
2. Identification of fish breeding sites.
3. Identification of site and technology transfer for open sea cage farming including seaweed and mussel farming.

Further, the Government may also like to collaborate with VARD AS and Mandal Shipyard (Global Ocean Technology) for the following:

a) Design for deep sea fishing vessels with multiple fishing gears, chilling facility and pre-processing on board.

b) Design for renovation of existing small vessels for multiple fishing gears.

(Dr. Shamila Monteiro)
Director of Fisheries

STUDY TOUR TO SINGAPORE

(Shri. Chandresh Haldankar)
Supdt. of Fisheries

(Smt. Megha Kerkar)
Supdt. of Fisheries

(Dr. Shamila Monteiro)
Director of Fisheries

An invite was received from SORR INDIA towards coordination of information gathering visit to Singapore from 24th August 2024 to 29th August 2024 regarding Oil spill response and to empower Coastal communities. SORR INDIA intends to create economic benefits for communities affected by pollutions, whether from oil spills or plastic. Further they will conduct training programme to teach the fishermen communities regarding oil spills and its contentment.

The delegation was led by Hon'ble Minister for Fisheries and following members.

1. Shri. E. Vallevan, IAS, Secretary (Fisheries.)
2. Dr. Shamila Monteiro, Director of Fisheries/Member Secretary, Goa state Pollution Control Board.
3. Shri. Prathamesh Tulaskar, OSD t oHon'ble Minister Fisheries
4. Smt. Megha Kerkar, Dy. Director of Fisheries.
5. Shri. Chandresh Haldankar, Supdt.of Fisheries.

Day wise activities and visit conducted during the visit are as follows.

Day1:24/08/2024

In the afternoon, a meeting was held with Commandant Pradeep K. Kushwaha,a former Coast Guard officer and representative of SORR (Search and Oil Recovery Response) from India and Singapore, to finalize the visit schedule. After the meeting, the Department official was taken to Santosa Island Beach, which had been impacted by an oil spill in 2024.

The Commander detailed the incident, which occurred on the night of June 14, 2024. The spill was caused by a collision between dredger vessels and oil bunker vessels at the Pasi Panjang terminal in Singapore, resulting in the release of approximately 400 metric tonnes of fuel oil into the environment.

The response effort commenced the following morning, with the Santosa Development Corporation and the Maritime and Port Authorities deploying a variety of equipment for oil containment and recovery. Advanced technologies such as floating booms, skimmers, dispersants, and absorbents were utilized, along with 20-25 port crafts. By June 20, 2024, the majority of the oil had been removed, and after a month of intensive cleanup, the beach and surrounding areas were cleared and reopened to the public.

Throughout this period, the Singapore Food Agency continued to monitor nearby fish farms and aquaculture operations to ensure that the oil spill did not spread to these areas and affect the local seafood industry.

Day2:25/08/2024

On the second day, the itinerary included a visit to Marina Santosa Cove on Santosa Island to observe a pioneering effort against plastic pollution. The focus was on the *Plastic Odyssey* research vessel, which docked in Singapore on August 24, 2024. This vessel is engaged in a three-year global expedition aimed at demonstrating its innovative technology for converting discarded plastics into useful materials.

Aboard the *Plastic Odyssey*, recycling workshops feature ten specialized units, each housed in its own container. These units are equipped with essential machinery, such as shredders and extruders, to process plastic waste and produce new products. Among the items created through this process are bricks, tiles, tubes, and plastic pallets, all of which can be repurposed for various uses.

Day3:26/08/2024

On the third day, the morning session featured a visit to the S.E.A. Aquarium, located at 8 Santosa Gateway, Santosa Island, Singapore. Covering 20 acres and inaugurated in 2012, the S.E.A. Aquarium was previously the world's largest oceanarium and public aquarium until it was surpassed by the Chimelong Ocean Kingdom in China. The facility, with a capacity of 45 million liters, houses over 1 million marine, brackish, and freshwater animals from more than 800 species. It is organized into ten distinct zones with 49 habitats, including highlights such as the Shipwreck, School of Fish (a cylindrical tank with a coral garden), Ocean Diversity, Open Ocean (a large tank with multiple viewing panels), Quirky Adaptations, Underwater City (live coral), and Apex Predators of the Sea (a 118-foot-wide and

27- foot-tall tunnel featuring various large shark species). Interactive features include Discovery Touch Pools.

In the afternoon and evening, the delegation met at Marina Keppel Bay for discussions and a site visit. Attendees included:

1. Mr. Jason Zailani Mahlan, Dockmaster/ Deputy Manager, Marina Operations
2. Mr. Collin Toh, Senior Property Manager, Keppel Bay
3. Mrs. Yollanda Guo, Senior Manager, Keppel Bay
4. Mr. Patrick Lim, Manager, Keppel Bay

Mr. Jason opened the discussion by outlining the procedures and essential steps for managing and containing oil spills near harbors and bays. He stressed the importance of having absorbents and maintaining adequate stock levels. He noted that the National Environment Agency (NEA) of Singapore provides boom stocks, which are crucial during oil spills. Additionally, he highlighted that booms are also beneficial for fishermen to keep their jetty areas free from oil and other pollutants, potentially offering them additional revenue.

The Director of Fisheries provided insights into the state's preparedness for oil spills and reinforced the advantages of booms for local fishermen.

Following the meeting, the group visited the Marina Keppel Bay area, which had been significantly impacted by the recent oil spill. Mr. Zailani reported that a thick layer of oil had initially spread throughout the bay and into some residential areas. He described the extensive cleanup efforts, including the removal of oil from the water, walls, and protective barriers around the bay. By the end of the cleanup, the bay was cleared of pollution, with some marine life beginning to return and floating pontoons becoming visible again.

The visit concluded with Commandant Pradeep K. Kushwaha delivering vote of thanks. Mr. Jason suggested that authorities should prioritize training personnel and building public trust to enhance effectiveness in managing such unforeseen events.

Day4:27/08/2024

Morning Session: The planned visit to Marina, Keppal Bay to view the first 100% electric passenger vessel was canceled due to heavy rain.

Evening Session: The delegation visited the Global Centre for Maritime Decarbonisation, where Dr. Sanjay C. Kuttan, Chief Strategy Officer, welcomed the group and presented the Centre's mission. Key highlights included:

Shaping Standards: Establishing benchmarks for maritime decarbonisation.

Deploying Solutions: Implementing effective strategies through out the industry.

Financing Projects: Supporting innovative initiatives through funding.

Fostering Collaboration: Encouraging partnerships across sectors to accelerate decarbonisation efforts.

Dr. Kuttan noted that the Centre collaborates with over 80 international project partners and discussed various completed, ongoing, and planned initiatives. Focus areas included:
Ammonia as Fuel: Investigating its viability as a modern energy source.
Green Fuels: Ensuring the quality and effectiveness of sustainable fuels.
Carbon Value Chain: Unlocking opportunities within carbon management.
Energy Efficiency Technologies: Promoting the adoption of technologies that enhance energy efficiency.

The session underscored the importance of collaboration and innovation in achieving maritime decarbonisation goals.

Day5:28/08/2024

On Day 5, the delegation, led by the Secretary (Fisheries), visited Temasek Polytechnic. They were welcomed by Mr. Amaladoss Anburaj, Senior Scientist at the Centre for Aquaculture and Veterinary Science (CAVS), along with his team, who provided an overview of the institution.

Mr. Anburaj detailed the Diploma in Aquaculture program and the Centre's focus on training and research in aquaculture. The Temasek Polytechnic campus covers 30 hectares and offers 36 diploma programs across diverse fields, including design, business, electronics, IT, tourism, logistics, applied sciences, and life skills, serving over 13,000 students.

He also highlighted the advanced research facilities available at CAVS, which include:

Re-circulating Aquaculture Systems (RAS) Animal Clinic and Wellness Centre Diagnostic Facilities

Live Feed Culture Facilities

Research Facilities for Aquaculture Species

Following the presentation, Mr. Anburaj led the delegationon at our of several centers within the campus. They first visited the Centre of Excellence and Aquaculture Innovation Centre, which features RAS facilities on the second floor. The tour continued to the Aquaculture Health Hub, APEC Centre, Blue Aqua Research Centre, and Oceanus Innovation Centre.

Additionally, the group explored the rooftop aquaponics setup and a specialized research lab dedicated to aquaponics initiatives. The visit underscored Temasek Polytechnic's commitment to enhancing aquaculture education and research. Discussions were also initiated for exchange programme of staff and students once the proposed fisheries college in Goa commences which would give a boost to Fisheries Education.

Recommendations:

1. Harbours in Singapore are well-organized and efficiently regulated and key features include:

- Waste management and environmental protection systems to prevent marine pollution
- Efficient cold chain management ensuring freshness of catch from sea to market
- Strict hygiene and food safety standards
- integration with local wholesale markets, enhancing marketing and distribution

It is recommended that similar facilities be proposed in the Detailed Project Report (DPR) for the up-gradation of fish landing centres in Goa, ensuring improved operational efficiency, sustainability, and compliance with food safety standards.

2. To enhance preparedness against marine oil spills, it is proposed that oil containment booms be pre-positioned at strategic locations by the Disaster Management Cell, in coordination with:

- Indian Coast Guard
- Goa State Pollution Control Board
- Department of Fisheries
- Captain of Ports
- Other relevant line departments

This initiative will ensure rapid containment and mitigation of oil spills, protect coastal ecosystems, and safeguard livelihoods dependent on marine and fishing activities.

3. It is also recommended to establish institutional collaboration with Singapore for the exchange of faculty and students, as well as for internship opportunities, once the Collage of Fisheries is established in the State of Goa.

This shall facilitate knowledge sharing and exposure to global best practices in fisheries science, marine conservation, and harbor management and also offer students and facility access to advanced research facilities, academic expertise, and practical training. Additionally, this will also strengthen capacity-building and support the long-term development of a skilled workforce for Goa's fisheries and allied sectors.

This would contribute significantly to the academic excellence and global relevance of the proposed College of Fisheries.

(Shri. Chandresh Haldankar)	(Smt. Megha Kerkar)	(Dr. Shamila Monteiro)
Supdt. of Fisheries	Supdt. of Fisheries	Director of Fisheries

STUDY TOUR TO BUSAN, SOUTH KOREA

Yashaswini B. IAS
Preceding Director of Fisheries

Four participants from India took part in the FAO-organized International Fisheries Law Training at the OFCC, Busan. This program included a wide range of global fisheries law issues and field visits, aimed at enhancing capacity for marine fisheries governance.

FAO Faculty/subject experts:

1. Mr. Sanjeet Ruhal, FAO Faculty
2. Mrs. Elda Belja, FAO Faculty
3. Dr. Deukoo Han, Director General, International Cooperation Bureau, Korea
4. Dr. Osvaldo Urrutia, FAO, Faculty
5. Mr. Joao Neves, FAO, Faculty
6. Mr. Giuliano Carrara, FAO, Faculty
7. Dr. Buba Bojang, FAO, Faculty
8. Mr. Taehoon Lim, Director/ Fisheries policy division, Korea
9. Dr. P. Krishnan, Director, BOBP, Chennai
10. Mr. Esther Boy, FAO, Faculty

Participant's details:

Total 21 participants have been attended from 7 countries viz: SriLanka, India, China, Thailand, Vietnam, Philippines & Indonesia.

Topics covered in the training:

1. Objectives & expectations of the International Fisheries Law
2. Jurisdiction of the laws
3. Overview and recent trends in International Fisheries Law
4. Relationship between International Law & National Fisheries Law
5. Introduction to public International Law
6. Introduction to the Law of the Sea
7. Law of Treaties
8. Territorial and contiguous zone
9. High Seas
10. Exclusive Economic zone & Exclusive Fisheries zone
11. Marine scientific research
12. Archipelagic states
13. Landlocked states/straits
14. The right of hot pursuit
15. Settlement of International fisheries disputes
16. Safety of fishing vessels
17. Work in fishing

18. Introduction to International fisheries law
19. Relevant treaties and soft law instruments
20. Rights and responsibilities of the flag state in the fisheries matter
21. Rights and responsibilities of the port state including in PSMA
22. Rights and responsibilities of the coastal state/ market measures against IUU Fishing.
23. Introduction to fisheries legislation, scope, principles & concepts
24. Introduction to fisheries legislation powers and measures of administration & Conservation, organization & management.
25. Introduction to fisheries legislation, fishing access regime
26. Introduction to Regional fisheries bodies
27. The BBNJ Agreement and its relationship to relevant instruments & framework
28. Introduction to the PSMA
29. Inter-agency co-operation, coordination & exchange of information
30. Regional fisheries Governance: case of Bay of Bengal
31. Introduction to sustainable fisheries planning and management policy, legal & Institutional frame works
32. Preventing, deterring & eliminating IUU Fishing through the PSMA and Complementary instruments & tools
33. Overview of the estimation of IUU fishing magnitude
34. Overview of catch documentation schemes & transhipment
35. Introduction to MCS Types and sources of information for monitoring, control & Surveillance
36. Introduction to MCS information sources/uses
37. Types and sources of information for monitoring, control & surveillance
38. MCS programmes & schemes
39. Structuring of MCS policy and operational elements
40. Assets and technology for MCS
41. Global record/GIES
42. Introduction to cooperation and coordination National inter agency cooperation and coordination.
43. Types of fisheries non-compliance. Crimes associated with or related to fishing post inspection actions.
44. Fisheries management in ROK
45. Pre-trail preparations
46. Introduction to case handling, evidence
47. Expert witness and corroboration
48. Criminal and administrative procedures & appeals
49. Practical experiences in fisheries non-compliance-evidence (chain of custody and proof)
50. Preparation for simulated trail.
51. Valedictory and feedback on the training.

Benefits of training: Knowledge acquired on the following aspects

- Current status and implementation of international fisheries laws (UNCLOS) in various countries.
- Various International fisheries agreements, implementation and challenges
- Marine fish production current trends in EEZ & high seas of various countries
- Responsibilities and duties of port, flag & coastal states
- Importance of Regional Fisheries Management Organizations (RFMOs) in conservation, replenishment and management of fisheries stocks
- Difference between national & international fisheries laws
- Port state measure agreement (PSMA) & Its guidelines
- Planning and management policy, legal & Institutional frameworks
- Preventing, deterring & eliminating IUU Fishing through the PSMA and Complementary instruments & tools
- Overview of the estimation of IUU fishing magnitude
- Overview of catch documentation schemes & trans shipment
- Monitoring, control & surveillance (MCS) types and sources of information for MCS
- Structuring of MCS policy and operational elements
- Assets and technology for MCS
- Global record/GIES
- Introduction to cooperation and coordination National inter agency cooperation and coordination.
- Types of fisheries non-compliance. Crimes associated with or related to fishing post inspection actions.
- Pre-trail preparations
- Procedures for case handling & evidence collection
- Criminal and administrative procedures & appeals

The above knowledge will be beneficial to the country to help in entering the regional, International treaties (agreements) & formation of RFMOs and also helps for making marine fisheries management policies and guidelines to align with international community.

Additional information:

In addition to the above training visited local fisheries infra, Seaweed culture, Domestic marketing & studied value addition products (Pics enclosed).

Way forward:

All the four Indian participants together prepared the following role & recommendations to the GOI for effective implementation of International fisheries law.

Role and Recommendations in International Fisheries Governance and Infrastructure

Subject Matter Context: Fisheries management is increasingly governed through international cooperation, given the trans-boundary nature of fish stocks and rising concerns about Illegal, Unreported, and Unregulated (IUU) fishing. Several international mechanisms and agreements such as the International Labour Organization (ILO) Convention No. 188, Port State Measures Agreement (PSMA), Catch Documentation Schemes (CDS), and Regional Fisheries Management Organizations (RFMOs) aim to ensure sustainability, worker welfare, and equitable resource access. India, as a major maritime nation with extensive Exclusive Economic Zone (EEZ) and growing fishing capacity, plays a critical role in the global fisheries governance framework.

1. Ratification of ILO Workin Fishing ConventionNo.188 (2007)

Overview:

Adopted in Geneva in 2007, this Convention sets standards for decent work conditions on board fishing vessels, including occupational safety, health, medical care, and social security for fishers.

Status in India:

India has not ratified Convention No. 188 yet. While national laws address some aspects of fisher welfare (e.g., safety standards, minimum wages), full alignment with the Convention's comprehensive framework is pending.

Recommendation:

India should prioritize ratification to improve working conditions and access premium seafood markets. Countries like Sri Lanka and Indonesia have implemented reforms aligned with the Convention, improving fisher safety and international standing. Ratification would improve international perception of India's labour standards in the fisheries sector and potentially open new export markets.

2. On-boarding with PSMA (PortStateMeasuresAgreement) Overview:

PSMA, adopted by FAO, aims to combat IUU fishing by preventing vessels engaged in such activities from using ports to land or tranship their catch. It includes global cooperation and information sharing via the Global Information Exchange System (GIES).

India's Status:

India has not joined PSMA but has shown interest. Lack of accession hinders systematic port inspections and denies access to the Global Information Exchange System (GIES).

Recommendation:

India should join PSMA to strengthen port control, protect marine resources, and enhance regional cooperation. Sri Lanka, Bangladesh, and Thailand have joined PSMA and successfully implemented port inspection systems, which have deterred IUU fishing.

1. **Use of GIES without Formal PSMA Membership**

No, full access to GIES is restricted to PSMA parties. Non-members may receive limited information through regional cooperation, but cannot contribute or benefit from real-time intelligence. India has to be on boarded with PSMA for us of GEIS.

2. **Catch Documentation Scheme (CDS)**

CDS aim to trace fish from capture to market to ensure legality and sustainability, supporting efforts against IUU fishing. FAO has issued Voluntary Guidelines for Catch Documentation Schemes (2017). CDS tracks the legality of fish catch from harvest to market, aiding traceability and compliance with trade regulations.

India's Status:

CDS is not fully implemented in India. Digital fishery monitoring and traceability projects are in early stages. The Marine Products Exports Development Authority (MPEDA) has been authorized by the Government of India to validate catch certificate, implementing this from December 2022.

Recommendation:

India must expedite implementation and align with FAO's Voluntary Guidelines for CDS. This would enhance exports, particularly to the EU and Japan, where traceability is mandatory.

3. **Straddling Stocks and RFMO in the Indian Ocean**

Issue:

RFMOs are regional bodies responsible for managing fish stocks across national jurisdictions. Straddling stocks migrate across EEZs and high seas. The Indian Ocean lacks an RFMO specifically for these stocks.

China's Position:

China has expressed interest in creating new RFMO. India's Position: India has not taken a leadership role in this space.

Recommendation:

India should consider leading or co-developing an RFMO for straddling stocks to:

- Protect its fishing interests
- Ensure fair quota systems
- Promote regional cooperation and sustainability
- Counter balance geopolitical influences

4. Quota Allocation System (QAS) in IOTC

Issue:

IOTC is an RFMO responsible for the conservation and management of tuna and tuna- like species in the Indian Ocean. QAS discussions are focused on how quotas are distributed among member states. QAS discussions at IOTC are primarily based on historical catch, favouring developed nations.

Impact on India:

India's low historical catch limits its future quota under current proposals.

India's Position:

India has opposed such QAS proposals, advocating for equity-based criteria that consider population, development needs, and potential.

Recommendation:

India should continue pushing for inclusion of social and developmental equity in quota calculations, aligning with other like-minded nations.

5. India's Role in International Fisheries Treaties Status:

India participates in:

- IOTC as a full member
- FAO bodies, including COFI (Committee on Fisheries)
- Regional frame works like IORA, BIMSTEC

However, India has not ratified key treaties like:

- PSMA
- UNFSA (UN Fish Stocks Agreement)
- ILOC188

Recommendation:

India should work towards ratification to gain full negotiating power and secure long-term marine resource sustainability.

6. Rights of Cooperating Non-Members in RFMOs Clarification:

To become a Cooperating Non-Party (CNP) in an RFMO, a state typically must accede to the UNFSA.Without it, access to RFMO-managed stocks is limited.

India's Status:

India is a non-party to UNFSA, limiting it stability to engage with some RFMOs as a full stakeholder.

India as Observer in SIOFA Overview:
The Southern Indian Ocean Fisheries Agreement (SIOFA) manages deep-sea fisheries.

India's Position:

India is a non-participating observer, meaning it has no voting rights or formal influence.

Recommendation:

India should consider becoming a member to ensure representation of its distant-water fleet and influence rules on deep-sea fishing especially when India is promoting Deep sea fishing under PMMSY scheme.

7. Port Inspections and IUU Fishing in India Issue:

India lacks a centralized port inspection framework due to its non-accession to PSMA.

Current Practice:

Port authorities perform checks, often without structured involvement of the Fisheries Department.

Recommendation:

India should:

- Create an inter-agency port inspection unit including Fisheries, Customs, and Coast Guard
- Train port officers in vessel monitoring and CDS enforcement

8. Port Infrastructure–Case Study: Busan, South Korea

Overview:

Busan's Jagalchi Fish Market and Landing Center is a globally recognized example of integrated fishery management.

- Includes live fish markets, cold storage, traceability, and public shopping areas
- Acts as a major economic hub attracting tourists and traders
- Digital management, hygiene compliance, and fisher support facilities are top-notch

Recommendation:

India should replicate elements of Busan's model in major fish landing centers, integrating:

- Market infrastructure
- Fisherwel fare amenities
- Cold chain systems
- Smart monitoring

9. India's Performance on SDG Goal 14 –Life below Water

Overview:

SDG14 focuses on sustainable use of oceans and marine resources.

India's Efforts:

- Initiated several blue economy and coastal sustainability programs
- Adopted Marine Fisheries Bill, National Marine Fisheries Policy
- Regular reporting on SDG progress remains voluntary and inconsistent

Recommendation:

- Fisheries Department should regularly participate in UN voluntary questionnaires
- Integrate SDG14 targets into national fisheries policies and funding programs

Conclusion and Summary Recommendations:

- ✓ Ratify key international treaties like ILOC188, PSMA, and UNFSA.
- ✓ Lead regional efforts to establish an RFMO for straddling stocks in the Indian Ocean.
- ✓ Implement Catch Documentation Schemes aligned with international guidelines.
- ✓ Develop strong port inspection systems involving fisheries officials.
- ✓ Upgrade fish landing centers, inspired by Busan's integrated model.
- ✓ Advocate for equitable quota systems at IOTC and other RFMOs.
- ✓ Align domestic fisheries management with SDG14, ensuring consistent global reporting.

India's National Framework to Combat IUU Fishing: A Summary Note

India has developed a comprehensive response to Illegal, Unreported, and Unregulated (IUU) fishing through a three-pronged strategy, aligning with international best practices and regional cooperation efforts.

a) National Plan of Action to Prevent, Deter and Eliminate IUU Fishing (NPoA-IUU)

India's NPoA-IUU, in line with the FAO's International Plan of Action, provides the policy framework to address IUU fishing across its coastal and EEZ waters. It emphasizes legal reforms, improved vessel licensing, enhanced traceability,

stakeholder engagement, and the adoption of Monitoring, Control, and Surveillance (MCS) tools. The plan encourages participatory governance and sustainable fisheries management.

b) Monitoring, Control and Surveillance (MCS) Programme

The MCS Programme is India's operational mechanism to enforce IUU controls. It includes:

- Vessel Monitoring Systems (VMS) for real-time tracking.
- Surveillance operations coordinated among the Department of Fisheries, Indian Coast Guard, and Navy.
- Port State measures for catch verification and enforcement.
- Inspection protocols for fishing vessels and documentation.

Efforts are ongoing to expand these systems to include artisanal and small-scale fishers, strengthening real-time compliance.

c) National Implementation Plan (NIP)

The NIP translates India's global and regional commitments into actionable national strategies. It focuses on:

- Legal harmonization through instruments like the proposed Ocean Regulation Management Act.
- Infrastructure modernization for fish landing sites and electronicatch documentation.
- Institutional capacity building across central and state agencies.
- Marine spatial planning to balance conservation and economic activity.

Suggestions:

- Enact a central law (e.g., Ocean Regulation Management Act)to unify marine fishing regulations across states and the EEZ.
- Mandate VMS for all mechanized vessels and develop low-cost tracking for small- scale fishers.
- Digitize vessel registration and create centralized national data base linked to all coastal states.
- Integrate surveillance systems (satellite, AIS, radar)and enhance co-ordination between agencies (Coast Guard, Navy, Fisheries).
- Modernize fishing harbors with digital landing, catch documentation, and traceability systems.
- Enforce port state measures and implement a national catch certification scheme.
- Engage fishing communities in co-monitoring and provide incentives for sustainable practices.

- Conduct awareness campaigns and training on IUU risks and regulations.
- Enhance regional cooperation through BOBP-IGO and explore joining the FAO Port State Measures Agreement.
- Setup an IUU task force with clear monitoring indicators and annual progress reviews.

Acknowledgements:

Sincere thanks to the GOI, Gov. of Goa, FAO & BOBP for Nominating for the Prestigious training program.

Yashaswini B. (IAS)
Director of Fisheries
30/05/2025






XVIII. SUCCESS STORIES

1. Installation of cages in River

Smt. Maria Joana Rosaria Fernandes
Location: Muxer, Panchwadi, Ponda, Goa

Cage culture is an emerging aquaculture practice that enables sustainable and high-yield fish farming in open water bodies. It offers a promising solution to enhance fish production by using untapped riverine resources. This method not only contributes to nutritional security but also creates employment and improves the livelihoods of local communities

Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) and through support provided under the Women Beneficiary Category, Smt. Maria Joana Rosaria Fernandes successfully installed 06 river cages in the Panchwadi village of Ponda Taluka.

Species Cultured: Asian Seabass (Lates calcarifer) – a high-value, fast-growing species in demand in local markets.

Target Production: 2.5 tons per crop, **Fish Size at Harvest**: 1 – 1.5 kg

Marketing: Supplied directly to local markets, ensuring freshness and fair pricing. Through her determination and adoption of modern fish farming techniques, Smt. Maria Joana Rosaria Fernandes has successfully demonstrated how river cage culture can be a sustainable, profitable, and inclusive model of aquaculture.

The Department of Fisheries, Government of Goa has released the subsidy to the beneficiary under General category for installation of cages in River under PMMSY as under:

Sr. No.	Name of the Applicant	Units Installed	Financial Assistance
1.	Smt. Maria Joana Rosaria Fernandes	06 nos.	Rs.10,80,000/-

2. Installation of cages in River

Smt. Silvia Fernandes
Location: Sonvexem, Ullando,
Curtorim – Salcete Taluka

In a remarkable step towards sustainable aquaculture and women empowerment, Smt. Silvia Fernandes, a resident of Curtorim, embraced the cage culture technology to enhance fish production and livelihood in her village.

Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY), Smt. Fernandes installed 12 river cages in the river at Ullando, Curtorim. This initiative was supported under the Women Beneficiary category, highlighting her role as a model entrepreneur in the fisheries sector.

Species Cultured: - Asian Seabass (Lates calcarifer) – a high-value species known for its taste and market demand.

Production Details

- **Target Output**: 2.5 tons per crop, **Average Fish Size at Harvest**: 1 – 1.5 kg
- **Market**: Local – ensuring fresh supply of quality fish to nearby consumers

Smt. Silvia Fernandes has set a remarkable example by adopting modern cage culture technology, contributing to the **Blue Revolution** in Goa. Her success showcases the potential of river cage farming as a **viable, eco-friendly, and inclusive** livelihood option, particularly for women in coastal and riverine areas.

The Department of Fisheries, Government of Goa has released the subsidy to the beneficiary under General category for installation of cages in River under PMMSY as under:

Sr. No.	Name of the Applicant	Units Installed	Financial Assistance
1.	Smt. Silvia Fernandes	12 nos.	Rs.10,80,000/-

3. Installation Aquarium/Ornamental Fish Kiosks

Kum. Diksha Sachin Dessai
Location: H. No. 200, Tisk
Honda, Sattari, – North Goa

Turning Passion into Livelihood: Ornamental Fish Kiosk Installation

Kum. Diksha Dessai with a keen interest in aquatic life turned her passion for ornamental fish into a livelihood with limited job opportunities and a strong desire to stay connected to nature, she approached the Department of Fisheries to explore sustainable business options.

In the financial year 2024–25, under the Pradhan Mantri Matsya Sampada Yojana (PMMSY) of the Government of India, implemented by the State Government of Goa, Kum. Diksha successfully established an Ornamental Fish Kiosk. This initiative aims to promote ornamental fisheries as a viable business model, especially among youth and women.

Features of the Kiosk

- Aquariums featuring a variety of vibrant ornamental fish species
- Accessories and fish feed for aquarium owners
- Educational material for aquarium maintenance and fish care
- Portable filtration units to ensure healthy aquatic environments

The kiosk is strategically placed in a location with high public visibility and tourist footfall, ensuring continuous interest and customer engagement.
The Department of Fisheries, Government of Goa has released the subsidy to the beneficiary under Women Category for establishment Aquarium/Ornamental Fish Kiosks under PMMSY as under:

Sr. No.	Name of the Applicant	Units Installed	Financial Assistance
1.	Kum. Diksha Sachin Dessai	01 unit	Rs. 6,00,000/-

XIX. HUMAN RESOURCE

Sr. No.	Name of the employees	Designation
1	Dr. Shamila Monteiro	Director of Fisheries
2	Shri. Chandrakant D. Velip	Deputy Director of Fisheries
3	Dr. Smita Mazumdar	Deputy Director of Fisheries
4	Shri. Amit Sawant	Dy. Director (Administration)
5	Shri. Chandresh M. Gaonkar	Dy. Director (Planning & Statistics)
6	Smt. Megha Kerkar	Superintendent of Fisheries
7	Shri. Chandresh Haldankar	Superintendent of Fisheries
8	Smt. Rohita Naik	Superintendent of Fisheries
9	Smt. Preetam Naik	Superintendent of Fisheries
10	Smt. Zigyasa Murkar	Superintendent of Fisheries
11	Dr. Sunita Pauskar	Superintendent of Fisheries
12	Smt. Varsha Nabesh Dessai	Superintendent of Fisheries
13	Smt. Sheetal P. Naik	Research Assistant
14	Shri. Sandeep Naik	Assistant Accounts Officer
15	Smt. Janaki Govenkar	Office Superintendent

List of staff retired during the year 2024-25

Sr. No.	Name of the Official	Designation
1.	Shri. Ibrahim Saha	Watchman
2.	Shri. Mahesh N. Volvoikar	Fisheries Surveyor.

List of Staff Recruited During The Year 2024-25 Upto March 2023 By Direct Recruitment

Sr. No.	Name of the Official	Designation
1	Shri. Ashutosh Kerkar	Lower Division Clerk

XX. DIRECTORY OF FISHING SOCIETIES

NORTH GOA

Sr. No.	Name of the Society	Contact No.	President / Chairman
	PERNEM		
1	Nirvikar Fishing Co-op. Society Ltd.	9049571055, 9371010713	Bheem Pednekar
2	Laxmi Narayan Fisherman Association		Narayan L. Redkar
	BARDEZ		
3	All Goa Fisherman's Co-op. Association Ltd.	0832-2475099 8805514244	Adv. Chandrakant V. Chodankar
4	Candolim Fisherman Association	9960193399	Vincent Fernandes
5	Baga Sant Khuris Fishermen Association	9822986108	Ronny P.D'Souza
6	Kandolchea Khravancho Eakvot	9890495030	Domingoes Joao Gonsalo Fernandes
7	Ovleshwar Fisherman Association	9850764148	Bhau S. Kalangutkar
8	Traditional Fisherman's Association o North Goa	8698576557, 9970318296	Peter Menon
9	Vailankani Saibin Fisherman Association	9860765641	Caetano Fernandes
	BICHOLIM		
10	Kharvi Samaj Vishwasth Mandal Society	9422448662, 7507214621	Adv. Narayan Putu Sawant
	TISWADI		
11	Dona Paula Fishermens Association	9049813389	Shri Ivo Nunes
12	Caranzalem Raponkar Traditional Fisherman Association	9822175766	Francisco Zacarias Vaz
13	Odxel Fishermen Association	9011307797, 9922619508	Ajay Diukar
14	Siridao Traditional Fisherman Association	9822147576	Dilip Kankonkar
15	Shree Sateri Fisherman Association	9834664264	Sumitra Fatarpekar
16	Shree Shantadurga Fisherman Association	9923284676	Sanjay Pereira
17	Inland Traditional Fishermen and Fish Farmers Association	9307941548	Virendra Salgaonkar

SOUTH GOA

SALCETE			
Sr. No.	**Name of the Society**	**Contact No.**	**President / Chairman**
18	A.V.C.B. Traditional Fisherman Association	9325565932	Remdeios Crasto
19	Niz Goenche Ramponkarancho Ekvott	9823180200	Saby Fernandes
20	Kharvi Bhavancho Ekvott	7774902290	Jose Fernandes
21	Traditional Fisherman Association of Colva	7743898880	Tomas Rodrigues
22	The Colva Traditional and mechanised canoe owners society	9011231266	Lina D'Silva
CANACONA			
23	Akhil Goa Kshatriya Pagui Samaj.	9511630921, 9923403683,	Ashok Apa Dhuri
24	Dev Dungeshwar Gabit Fishermen's Society	9834533046 7875231848	Siddesh s. Salgaonkar
25	Shree Ganesh Traditional Fisheries Association	7821885890	Shri.Vishnu Keluskar
26	Agonda Boat Owners Association	8408081814	Shri Sanju Anant Pagui
VASCO			
27	St. Andrews Canoe Owners –Vasco Society	9860123987	Sebastiao De Souza
28	Baina Ramponkar & Fishing Canoe Owner's Society,	9822177346	Santo Andre Gurjao
29	Baina Fisherman Society	9850189991	Alcantro Gurjao
30	Desterro Fisherman Association	9923633360	Domingos Mendes
31	The Desterro vailankani saibin society	8149980318 9923633360	Prashant Jamsandekar
32	St. Francis Xavier Canoes Owners Vasco Society	7758901464, 9765974569	Lourence D'Souza
33	St. Peter and Paul Fishing Cannos Association, Velsao, Dando	9158444428 8766914858	Pedro Minguel Rodrigues
34	Old Cross Fishing Canoe Owners Co-op. Society Ltd.	9637891412 9545401532	Custodio D'souza
35	Goenche Ramponkarancho Ekvott (GRE)	9623269344	Shri. Agnelo Rodrigues
36	Velsao Fishing Canoe Owners Society	9579594289, 9552617383, 8805599143	Lawrence Mascarenhas
37	Velankanni Canoe Owners Society	7020312646	Paulo Francisco Lobo

TRAWLERS/ PURSE SEINERS

NORTH GOA

Sr. No.	Name of the Society/ Association	Contact No.	President / Chairman
1	All Goa Purse-seine Boat Owners Association	9920616891	Harshad Dhond
2	Mandovi Fishermen Marketing Co-operative Society Ltd.	0832 2413656, 0832 2415447 9822482551	Francisco D'souza
3	Xapora Fishing Boat Owners Fisheries Co-operative Society Ltd.,Chapora, Bardez- Goa.	9822142230, 9356265120	Balbhim Malvankar

SOUTH GOA

CUTBONA

4	Cutband Boat/Trawler Owners Association	08322775915, 9822132008	Jose Roque Dourado
5	Cutbona Boat Owners Development Society	8322775915	Savio Dsilva
6	Coutband Fisheries Co-operative Society Ltd.	9822382924	Vinay Tari
7	South Goa Mechanised Boat Owners Co-op and Marketing Society Ltd.	9822589549	Antonio Fernandes
8	The Purse Seiners Boat Owners Cooperative Society Ltd	9822583707	Sebastiao Cardozo
9	Deep Sea Fishing and Marketing Co-operative Society Ltd	7798252525	Joyston D. Rodrigues
VASCO			
10	Goa Fishing Boat Owners Association	9822941761 7498419106	Jose Philip
11	Vasco Fishing Boat Owners Marketing Co-operative Society Ltd.	9822139521	Minguel Cardoz
12	Zuari Fishermen Marketing Co-operative Society Ltd	0832-2501110, 9923037926, 9326127387, 9823643363	Jerry Fernandes
CANACONA			
13	The Canacona Taluka Fishermen Trawler/Mechanized, Craft owners Co-op. Society Ltd	9673743171 9423888339	Ditosa Barreto

	GROUPS/ UNIONS/Federation		
Sr. No.	**Name of the Society/ Association**	**Contact No.**	**President / Chairman**
1	Akhil Gomantak Harkari Sahakari Saunstha Maryadit	8275833183	Vasudev J. Phadte
2	Goa Kshatriya Maratha Samaj	0832-2410641 9168813750	Manguesh S. Chodankar
3	Goa Kshatriya Maratha Kharvi Samaj	9168813750	Manguesh S. Chodankar
4	All Goa Small Scale Responsible Fisheries union	8805074643	Shaila D'mello
5	Kshatriy Maratha Paramparik Macchimar Sanghatana	8888381379	Pramod V. Zuvenkar
6	Margao Wholesale Fish Market Association	9049631559	Maulana Ibrahim

XXI. PHOTO GALLERY

Newspaper Articles

Silvia Fernandes turned a childho
dream into a thriving chowak far

मच्छीमारांसाठी आता मुख्यमंत्री मदत योजना

मृत्यूनंतर कुटुंबीयांना ५० हजार साहाय्य

पणजी, ता. १० (प्रतिनिधी):

अर्थसाहाय्यासाठी या बाबी आवश्यक


Awereness programme on Turtle conservation by Fisheries Department with consultation of TREE Foundation NGO

Inspection of jetty by Hon'ble minister for Fisheries along with officers of Fisheries Department and GSIDC

Community Interaction programme at Malim Jetty

Community Interaction programme at Bardez Block

Post-Budget Webinar on Agriculture and Rural Prosperity at Malim Sub-Office


Meeting with Mechanized fisherman society before commencement of fishing season

GLIMPSE OF AQUA GOA MEGA FISH FESTIVAL 2025


Directorate of Fisheries
Government of Goa


Date : 10th to 12th January 2025


AANANT AQUAPONICS


JOLLY BOAT


JALA MITRA
SFX DIVINE
JAYAM DARSHAN

Department of Fisheries

Government of Goa

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