AN OVERVIEW OF
DEPARTMENT OF
FISHERIES-GOA

GOAN FISH TRAILS

Vol.-IV- 2021

SWAYAMPURNA GOA MARCHING TOWARDS SELF RELIANCE

GOA@60

आत्मनिर्भर भारत

Azadi Ka Amrit Mahotsav

FIVE MAJOR FISH LANDING JETTIES OF GOA

Fishing is quite a good metaphor for life. You do your prep, you do your thinking, you put your bait out, and you wait, confident that you've done your groundwork. But a lot of life is luck.

-Jeremy Wade

GOA FISH TRAILS

Vol.-IV- 2021

An Overview of

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Shri Filipe-Nery-Rodrigues,
Hon'ble
Minister of Fisheries

I am happy to present before you, "Goan Fish Trails"; an overview of Department of Fisheries, Government of Goa which speaks about the development of fisheries, its achievements and vision for the future.

Fisheries sector contribute significantly to the development of the economy thereby providing livelihood to the people engaged in the fishing activity in the State. Government has taken effective steps towards addressing the challenges and optimizing the potentials in this sector.

Central Government through the initiative to boost the Blue economy, provided funds towards the sustainable development of the Fisheries sector in the State. Hon'ble Prime Minster Shri. Narendra modi have recently launched Prime Minister Matsya sampada Yojana (PMMSY) for the growth of the fishing sector in the State.

I am indeed happy that the Department has brought out the overview of fishing activity in Goa through "Goan Fish" Trails which is laudable.

Filipe Nery Rodrigues
Hon'ble Minister for Fisheries

Shri. P.S. Reddy, IAS
Secretary (Fisheries)

I am happy to note that the Department of Fisheries is coming out with its IVth edition of "Goan Fish Trails".

The publication highlights its achievements & activities carried out during the year 2020-21. The new initiatives of the Government will certainly give a boost to the Aquaculture in the State.

P.S. Reddy, IAS
Secretary Fisheries

Dr. Shamila Monteiro,
Director of Fisheries

Chief Editor's Note

It gives me immense pleasure to place before you the publication "Goan Fish Trail" Volume. - IV – 2021.

The "Goan Fish Trail" provides valuable information about the fishing activities in the State of Goa, role of Department in managing this valuable resources & exploiting the same in a sustainable manner.

The Department has taken a step by involving the local fishermen/ fish farmers in boosting the fish production scientifically. Potentials in the aquaculture sector have contributed significantly towards livelihood developments of the Fish farmers in the State.

Due to the existing Covid-19 Pandemic and the recent Tauktae cyclone the Sector had to face a challenge considering the safety precautions Labour issue and climatic conditions.

This document will help the fishermen, Fish farmers and general public in creating awareness of the Department and all around development of the Sector.

I would like to appreciate the work and co-operation of all my staff in striving to achieve their individual targets and collectively the targets of the Department.

I express my sincere gratitude to the Hon'ble Minister of Fisheries Shri. Filipe Nery Rodrigues for his keen interest in this sector, continuous support and guidance along with Shri. P. S. Reddy, Secretary of Fisheries for his kind advise and motivation.

Dr. Shamila Monteiro
Director Fisheries

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

I. INTRODUCTION

There is an old saying “Give a man a fish and he will eat for a day”. “Teach a man how to fish and you feed him for a lifetime”. It throws light that fish being a renewable resource is a very important resource for human feeding and employment.

Goa is one of the smallest State with a population of 14.59 lakhs (2011 census), and with a coastline of 104 km with numerous bays and headlands. The continental shelf area of Goa extends to about 10000 km2 , estuarine area of 13,157 ha, brakish water area of 3,500 ha, khazan land of 18000 ha, 555km length of rivers, freshwater ponds of 100 ha and reservoir covering 3,300 ha. The fisheries sector of the state contributes about 2.5 % of the total GDP.

The total fish production has been covering around 1 lakh metric tonnes, The department has taken initiative to diversify from capture fisheries to culture fisheries by conducting various awareness and training programme for youth and entrepreneurs interested in taking up aquaculture in the State.

The 4th Volume of Goan Fish Trail highlights the work undertaken by the Department for the benefit of the Fishermen and fish farmer of the State from January, 2020 to March, 2021.

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.

ACHIEVEMENTS

A. Budget Provision

The annual budget for the year 2020-21 of the Department was Rs. 8655.97 lakhs. The Department was able to utilize an amount of Rs. 3068.63 lakh for the year 2020-21.

B. Revenue Generated

The Department generated total revenue of Rs. 485.72 lakh for the Financial Year 2020-21 through various fees and rent of various structures.

C. Infrastructure:

In order to provide better and adequate infrastructure facility to the fishermen, the department has initiated various infrastructure works.

a) Works Completed during 2020-21are as under:-

1. Repair of the existing Fisheries Administrative Building and internal Road at Fisheries Complex Colva in Benaulim Constituency.
2. Repair and Maintenance work of the Khariwada Fishing Jetty
3. Repairs/ renovation of existing sump and pump house at Chapora jetty.
4. Repair of pipe culvert at Cutbona Jetty.

b) Ongoing works:-

1. Work for construction/up gradation of fish landing centres at Malim.
2. Construction of fishing ramp at Muxer, Velim for traditional fishermen to land and berth the fishing vessel (canoe).
3. Construction of compound wall and repairs of toilet block around fixing ramp at Badem, Assagao.
4. Construction of compound wall of Half Masonary wall and half chain like fencing at fresh water fish seed hatchery at Anjunem, Keri, Sattari
5. Repair and renovation of the entire existing shed and other miscellaneous work at fresh water fish seed hatchery at Anjunem, Keri, Sattari.
6. Repair and renovation of brooder tanks of Fresh water Fish seed Hatchery at Anjunem Keri, Sattari.

c) Proposed work:-

1. Repair of Ramp at village Oxel, Siolim and Construction of compound wall.
2. Repair of Net Mending Shed at Durbhat
3. Construction of ramp and net mending shed in survey No. 157/1 at Dharjowada, V.P. Kundaim, Ponda.
4. Construction of net mending shed, toilet and retaining wall at Manaswada, Kundaim.
5. Repairing, extension of net mending shed at Adanwada Tonka, ward No. 5, Marcaim, Ponda.
6. The Department has proposed to install the solar light panel system through the Goa energy Development at Fishing ramp at Santrem, Retaining wall, ward no. 3 Bandir wada and Ramp at ward no. 1 Vagator beach.
7. Construction of protection wall along river Mandovi side at Estuarine Fish farm, Ela, Old Goa.
8. Development and repair of Bunds, Fish tank and Channel of estuarine fish farm, Ela, Old Goa.
9. Demolishing and reconstruction of existing office building at Ela fish farm.

d) Financial Assistance Scheme

Fishing is an important sector of food production providing nutritional security besides livelihood support and gainful employment to the people engaged in this sector. Various financial assistance schemes are been implemented by the Directorate of Fisheries, for the welfare of the fishermen. Following are the State as well as Central Schemes implemented by the department and the physical and financial achievements during financial year 2020-21.

Physical & Financial Achievement for the Financial Year 2020-21

(Rs. in lakh)

Sr. No.	Name of the scheme	Financial Achievement	Physical Achievement
	State Schemes		
1	Financial Assistance for the purchase /Construction of Wooden/FRP Canoe	27.92	47
2	Financial Assistance for the purchase of fuel (Petrol) for the operation of the OBM	262.32	526
3	Financial Assistance for the purchase of Singel/Rampon net & its accessories.	0.50	01
4	Financial Assistance for the purchase Gill net & its accessories.	19.44	71
5	Financial Assistance to Brackish Water Aquaculture Farms.	2.36	05
6	Interest Subsidy on Loans for Agriculture and Allied Activities	2.65	13
7	The Goa Value Added Tax (VAT) based subsidy on H.S.D. oil consumed by fishing vessel	1027.64	621
8	Supply of Insulated Boxes to Fisher person	13.29	34
9	Tribal sub plan for Schedule Tribe development scheme	13.56	29
	TOTAL	**1369.68**	

DIRECTORATE OF FISHERIES

ACHIEVEMENT UNDER BLUE REVOLUTION

Autorickshow with ice box financed under Blue Revolutio


Mobile Fish Stall financed under Blue Revolution


Open Sea Cage Culture financed under Blue Revoluti

Physical & Financial Achievement for the Financial Year 2020-21

(Rs. in lakh)

	Centrally Sponsored Schemes		
1.	Artisanal/Traditional Craft (Units)	25.79	28
2.	"Providing boats (replacement) and nets for traditional fishermen" under PMMSY	3.93	03
3.	Motorization of Traditional Craft	13.17	25
4.	Craft & Gear	2.40	06
5.	Financial Assistance for Purchase of Insulated Truck of a minimum 6 tonne capacity	22.50	03
6.	Financial Assistance for Purchase of Insulated Truck of a minimum 10 tonne Capacity	16.00	02
7.	Financial Assistance for Development of Ice Plant 10 tonne	12.50	01
8.	Financial Assistance for Development of Cold Storage 20 tonne	25.00	01
9.	Financial Assistance for Development of Cold Storage 10 tonne	12.50	01
10.	Financial Assistance for Setting up of Mobile Fish Stall	16.02	04
11.	Renovation of Existing Ponds/Tanks under Blue Revolution	1.40	01
12.	Construction of new ponds/tanks under Blue Revolution	8.23	02
13.	Financial Assistance for Open Sea Cage Culture under Blue Revolution	9.61	01
14.	Establishment of Medium RAS (with 6 tank of minimum 30 m3/tank capacity 10ton/crop under PMMSY	10.00	01
15.	Establishment of Small Biofloc (7 tanks of 4m dia and 1.5 high) culture system under PMMSY	3.00	01
16.	Financial Assistance Purchase of Lifejackets and Lifebuoys	14.07	38
17.	Financial assistance for the purchase of Motorcycle with Icebox under PMMSY/Blue Revolution	1.47	05
18.	Financial assistance for the purchase of Auto rickshaw with Icebox under PMMSY/Blue Revolution	19.20	17
19.	Safety of Fishermen at Sea (AIS, FISH FINDER, VTS, LIFE JACKETS and LIFE BUOY)	35.07	42
	TOTAL	**251.86**	

IV. TRAINING AND INTERACTION PROGRAMMES

1. Community Interaction Programme

It is to state that Indian Coast Guard in coordination with Department of Fisheries conducts Community Interaction Programme twice in a month with Fishermen for sensitizing fishermen about Coastal Security and Safety of Fishermen at sea.

In year 2020-21, community interaction programmes at various places i.e. Jetties, Panchayats etc. were conducted successfully. As the Coastal Security Measures enhances day by day, Security Agencies expect more and more fishermen to be sensitize. A total of 4 nos. of Pogrammes were conducted during 2020-21.

Community Interaction Programme for the fishermen held at Village Panchayat Hall,Saleri, Cola and at Menezes Braganza Hall, Panjim – Goa.

2. Awareness under "ATMANIRBHAR BHARAT" and "SWAYAMPURNA GOA".

Recently Government has initiated "AtmaNirbhar Bharat/ Swayampurna Goa" under which the Department staff is deputed at various Village Panchayat's of Goa for making awareness about various Departmental schemes and also to provide technical guidance to the people. Under the Atmanirbhar Bharat Package and Swayampurna Goa, the Department conducted 110 nos. of Awareness Programmes on Schemes and also provided technical knowledge in various Aquaculture farms in the State of Goa.

Awareness programme conducted under "Atmanirbhar Bharat" at Harvalem Panchayat, Bicholim and Macazana Panchayat, Salcete – Goa.

Details Of Programme Conducted By The Fisheries Department Under Atmanirbhar Bharat/ Swayampurna Goa From November, 2020 To March, 2021

Sr. No.	Name of the Taluka	Taluka Nodal Officer	No. of Programme Undertaken	No. of Participant
1	2	3	4	5
NORTH GOA				
1	Bardez	Dr. Smita Muzumdar	18	314
2	Bicholim	Shri. Pradeep Gawas	8	245
3	Pernem	Shri. Vipul Mapari	11	483
4	Sattari	Shri. Ravi Rodrigues	2	79
5	Tiswadi	Dr. Sunita Pauskar	12	291
SOUTH GOA				
1	Canacona	Smt. Roshni Komarpant	11	357
2	Dharbandora	Shri. Joel Diniz	3	160
3	Ponda	Shri. Chandan Shirodkar	10	281
4	Quepem	Shri. Sagar Naik	1	150
5	Salcete	Miss. Shenia Coutinho	20	629
6	Sanguem	Shri. Chandresh Haldankar	9	400
7	Mormugao	Smt. Rohita Naik	5	109
		TOTAL	**110**	**3498**

Short term training programme held at Fisheries Training Centre, Ela Dauji,Old Goa.

3. Short Term Training Programme:

Short Term Training Programmes are imparted to fisher youth, fish farmers, entrepreneurs etc. interested in gaining in-hand training as well as theoretical knowledge in Fisheries oriented aspects. The training is held at Fisheries Training Centre, Ela Dauji, Old Goa. The detail of training programmes held are as under:

Sr. No	Short Term Training Programmes	Date	No of students/ fish farmers/entrepreneurs
1	Biofloc and RAS Culture System	22/12/2020 to 23/12/2020	28
2	Biofloc and RAS Culture System	29/12/2020 to 30/12/2020	17
3	Ornamental Fisheries and Fabrication of Aquarium tank	12/01/2021 to 13/01/2021	25
4	Seafood Value added Fish Product Preparation	03/02/2021	23
5	Seafood Value added Fish Product Preparation	23/02/2021 to 24/02/2021	25
6	Brackish water Shrimp Culture	01/03/2021 to 02/03/2021	20
7	Open sea cage culture and mussel culture	09/03/2021 to 10/03/2021	45

Short term training programme on value Added Fish products held at Fisheries Training Centre, Ela Dauji,Old Goa

4. Awareness Programme On Biofloc /Ras Culture System

Department has successfully conducted two Awareness Programmes on "Biofloc/RAS Culture System" in the Month of December 2020 at Fisheries Training Centre, Ela Dhauji, Old Goa, under "Pradhan Mantri Matsya Sampada Yojana (PMMSY) on account of World Fisheries Day. The Department received good response towards the same. A total of 45 students/farmers/entrepreneurs attended the said training session. Besides theory session, an exposure field visit to the biofloc farms was also undertaken as a part of the said training.

Awareness programme on Biofloc conducted at Training Centre, Ela Dauji, Old Goa and visit to Biofloc farm at Sal, Bicholim – Goa.

V.

AQUACULTURE

1. 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 2020-2021, it produced 1.50 lakh advance fingerlings of good quality, besides additional 7 lakh fingerlings were procured from outside the State and supplied to the fish farmers at reasonable rates.

IMC seed at Keri Hatchery.

Packing of seeds.

Distribution of IMC seeds to fish
farmers at Fish Seed Hatchery, Keri, Sattari – Goa.

Visit of Hon'ble Minister of Fisheries at Fresh water Fish Seed Hatchery, Anjuna, Kerim Sattari Goa

2. Estuarine Fish Farm, Ela, Old Goa

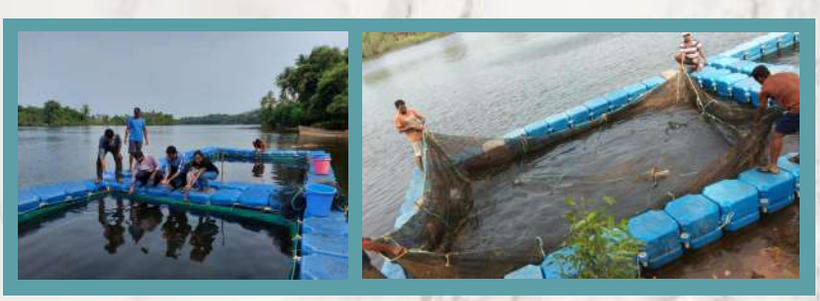
Milk Fish (Chanos chanos) was cultured at the Department Estuarine Fish Farm at Ela, Dhauji, Old Goa and a total of 1.5 tones of Milk Fish was harvested. Also, sea bass fingerlings were released in the ponds of Estuarine Fish Farm, Ela Dhauji, Old Goa.

Milk Fish harvested at Brackish Water Fish Farm, at Ela Dauji, Old Goa.

3. Brackish water River Cages

Goa state has a huge scope for Brackish water Aquaculture since the state is bestowed with resources of Brackish water areas and especially the mangrove based creeks, canals and backwaters. Hence, to provide alternate livelihood, brackish water cage culture is a powerful tool to utilize the untapped water resources for enhancing fish production, productivity and translating these into income.

The Department of Fisheries has initiated Brackish water cage culture which has enabled utilization of open water bodies for fish production and livelihood generation. Department has set up a demonstration unit in the river Mandovi at Khandola. In the first phase of the project rearing of fish i.e. Pearl spot Etroplus suratensisis in the Mandovi River was cultured.



Brackish Water River Cages installed at Khandola

4. Aquaponic system

Aquaponics is a food production system that couples aquaculture (raising aquatic animals such as fish, crayfish, snails or prawns in tanks) with hydroponics (cultivating plants in water) whereby the nutrient rich aquaculture water is fed to hydroponic grown plant, involving nitrifying bacteria for converting ammonia into nitrates.

The Department of Fisheries has introduced this modern Technology and has set up Demonstration unit at Freshwater Fish Seed Hatchery at Keri, Sattari. In this integrated system, Tilapia fish was cultured along with vegetables such as Capsicum, Tomatoes, Basil, Spinach,Coriander and Ridge Gourd.

Aquaponics Unit at Fresh Water Fish Seed Hatchery, Keri Sattari

5. Harvesting of Reservoir

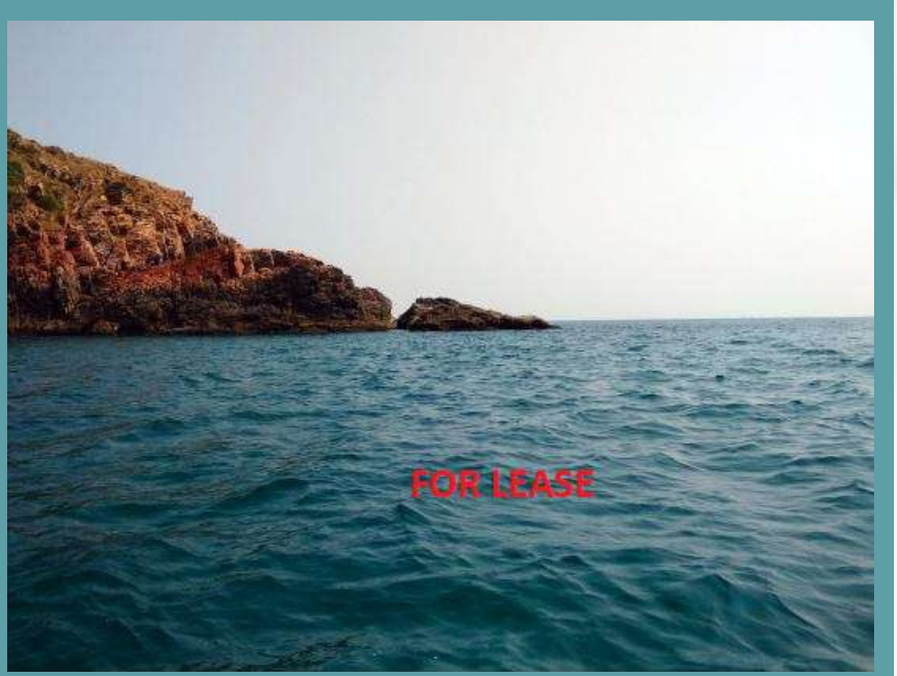
The Department had stocked the reservoirs i.e. Anjunem, Chapoli, Amthane, Salaulim and Panchvadi with fish seed of Rohu Catla, Mrigal and Common Carp. The Department has harvested the reservoirs by inviting the tender from 21/06/2021 to 10/07/2021. During the harvesting period, the species such as Rohu, Catla and Pangasius sutchi were caught. The total quantity of fish harvested from the above mentioned reservoirs was 1417 kg.

Casting of nets in the Reservoir

Harvested Fish

6. Goa State Mariculture Policy 2020

The Department has notified the "GOA STATE MARICULTURE POLICY 2020" for implementing cage fish farming in the Official Gazette, Series I No.21 dated 20th August, 2020 to ensure maximum economic returns to the State from aquaculture, while simultaneously benefitting the stake holders and the environment.



VI. POLICY DECISION

A) Major decisions taken by the Government

1.The State Government under Marine Fishing Regulation Act, 1980, has approved to reduce the fishing ban from 61 days to 47 days i.e. from 15th June, 2020 till 31st July, 2020 (both days inclusive) due to COVID-19 Pandemic.

2.The Department of Fisheries, Government of Goa under section 4 of Goa Marine fishing regulation Act,1980 has issued an order for implementation of minimum legal size specifying minimum legal size for 20 major fish caught in Goan territorial water.

3.The Government has approved for collection of Processing fees for Registration of fishing vessel and transfer of fishing vessel under Merchant Shipping Act, 1958.

4.The Government has revised collection of Processing fees to issue of NOC for operation of water sports activities.

5.The Government has approved to registered Fish Sellers and Fish Traders in order to identify the fishermen from different localities/commodities and Department will able to maintain the database of all fishermen all over the State. Department to have a control on the number of fish trader operating in the State of Goa.

6. POLICY DECISION ON FISHING VESSEL (CANOE)

The Department has decided to reduce the number of permission to construct the new fishing vessel (canoe) from 100 nos. to 40 nos. per year and have issued revised guidelines for the same vide order dated 16/07/2020.

7. POLICY DECISION ON FISHING VESSEL (TRAWLER/PURSE SEINE)

In pursuance to demand from the fishermen, the Government has also approved to purchase the second hand vessels (seaworthy condition) from outside the State of Goa which is available at low cost, in replacement of the existing vessel or within the State whose Vessel Registration Certificate is cancelled by Department of Fisheries (vide order dated 29/05/2020).

Further, the Department has issued revised guidelines towards Construction of new fishing vessel under replacement and transfer of existing fishing vessel from one person to other (vide order dated 28/05/2020).

8. AUTHORIZED OFFICER

Department has issued a notification to authorize the Assistant Superintendent of Fisheries, Fisheries Officer and Junior Technician, of the Directorate of Fisheries, Government of Goa to exercise the powers conferred on and discharge the duties imposed upon the Authorized Officer under the Goa Marine Fishing Regulation Act, 1980 in the entire State of Goa.

9. ACTS AND RULES

The Indian Fisheries Act, 1897 (Central Act 4 of 1897) was repealed by repealing and Amending Act, 2015 (No. 17 of 2015) hence, the rules framed there under by the Government of Goa i.e. the Goa, Daman and Diu Fisheries Rules, 1981 have also been repealed. The Government has amended Goa Marine Fishing Regulation Act, 1980 in the year 2019 for the inclusion of provisions for regulating fishing in inland waters, etc. and the Act has come into force from 01/11/2019. The Goa Marine Fishing Regulation Rules (Amendment 2021) there under have been framed and have been approved by Government.

B) Other Initiatives

- **Issuance of Aadhar card enabled QR code:**
  Recently, as per Central Government Guidelines, regarding use of "UIDAI Database for verifying Antecedents of Marine Fishermen in the High Seas" Aadhaar card enabled QR code is made mandatory document as fishermen ID cards.

- **Kisan Credit Card:**
  The Department of Fisheries has undertaken the special drive to cover the fishermen under KISAN CREDIT CARD. The benefit of the Kisan Credit Card has been extended to 247 fishermen of the State have been issued Kisan Credit Card.

- **Implementation of Central Scheme**
  Department has implemented a central scheme called "Pradhan Mantri Shram Yogi Maandhan Yojna (PM-SYM) and National Pension Scheme for the Traders and Self Employed Persons (NPS-Traders)" This scheme is basically for the workers or crew working on the fishing vessel/canoe and for the fish vendors and similar other occupations.
  For the implementation of the said scheme Department has conducted various awareness programmes at field level i.e. Jetties/Blocks during community interaction programme.

- **Installation of CCTV camera:**
  Department intends to install CCTV camera systems at all 6 notified Fish Landing Centres, viz. Malim, Chapora, Vasco, Cortalim, Talpona and Cutbona jetty due to security reasons. Also, in near future CCTV cameras shall be installed on Patrolling boats.

- **Implementation of eSMS Service**
  Department shall implement eSMS Gateway and Mobile Governance Initiative through Info Tech Corporation of Goa Ltd. ITG has set up a SMS gateway to integrate the benefits of mobile technology with the Department with an aim to create cost-effective, efficient and round the clock Government information systems for the benefit of the public. It will enable Department to send SMS alerts for various services such as SMS on status of application of citizen, weather warning alerts, various meetings, message to field level officers and employee regarding various meeting and updates of the Department etc.

- **Setting up of Fish Kiosk/Retail Fish Outlet**
  Department is planning to introduce a new scheme i.e. “Setting up of Fish Kiosk/Retail Fish Outlets” in order to provide fish to the people of Goa at reasonable rates. The certain varieties of fish will be considered for determining the prices and the same will be done by the Department.

- **Registration of Fish Sellers and Fish Agents**
  In order to bring all the fish agents and fish vendors under the ambient of the Fisheries Department, the Department has started registration of fish sellers and fish agents. This will help the department to identify/recognized the fishermen from different localities/communities and the department could maintain the database of all fishermen all over the State. This will also allow the Department to have a control on the number of fish trader/agent operating in the State of Goa thereby protecting the interest of the local fishermen of the State.

Guiding Night fish sellers from Sanquelim, Karapur to register as Fish Sellers

Fish Sellers Identity Cards distribution at Siridao, Tiswadi

- **Implementation of Central Sector Scheme**

  It is to state that the Government of India has approved the “Pradhan Mantri Matsya Sampada Yojana” (PMMSY) - A scheme to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India at a total investment of Rs.20050 crores for its implementation for a period of 5 (five) years from FY 2020-21 to FY 2024-25 in all the sates and Union Territories (Uts).

  The PMMSY is designed to address critical gaps in fish production and productivity, quality, technology, post-harvest infrastructure and management, modernization and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers' welfare.

  Further, it is to inform that Department has already taken approval from the Government for the implementation of PMMSY scheme.

  Department of Fisheries, Government of India has conveyed Administrative approval to the proposal of Government of Goa for development of fisheries in the state at a total cost not exceeding Rs.4146.50 lakhs including central share amounting to Rs.1193.49 lakhs, State share amounting to Rs.795.66 lakhs and beneficiary share amounting to Rs. 2157.35 lakhs under Centrally sponsored scheme component of “Pradhan Mantri Matsya Sampada Yojana” (PMMSY)

  During 2020-21, Department of Fisheries, Government of India has released an amount of Rs.596.74 lakhs out of Rs.1193.49 lakhs allocated under PMMSY for the State of Goa

Components under PMMSY

Sr. No.	Name of the Component	Category	Units (No/Ha)	Unit cost	Total Project cost	Central Share	State Share	Beneficiary Share
1	Construction of new ponds for brackish water aquaculture	General	2	8.00	16.00	3.84	2.56	9.60
		Women	0	8.00	0.00	0.00	0.00	0.00
		SC	0	8.00	0.00	0.00	0.00	0.00
		ST	0	8.00	0.00	0.00	0.00	0.00
		Sub-Total	**2**		**16.00**	**3.84**	**2.56**	**9.60**
2	Input cost for brackish water aquaculture ponds	General	2	6.00	12.00	2.88	1.92	7.20
		Women	0	6.00	0.00	0.00	0.00	0.00
		SC	0	6.00	0.00	0.00	0.00	0.00
		ST	0	6.00	0.00	0.00	0.00	0.00
		Sub-Total	**2**		**12.00**	**2.88**	**1.92**	**7.20**
3	Construction of biofloc ponds for brackish water/ saline/alkaline areas including inputs of Rs 8 Lakhs/0.1 Ha	General	2	18.00	36.00	8.64	5.76	21.60
		Women	1	18.00	18.00	6.48	4.32	7.20
		SC	1	18.00	18.00	6.48	4.32	7.20
		ST	0	18.00	0.00	0.00	0.00	0.00
		Sub-Total	**4**		**72.00**	**21.60**	**14.40**	**36.00**
4	Construction of biofloc ponds for fresh water areas including inputs of Rs 4 Lakhs/0.1 Ha	General	2	14.00	28.00	6.72	4.48	16.80
		Women	1	14.00	14.00	5.04	3.36	5.60
		SC	1	14.00	14.00	5.04	3.36	5.60
		ST	0	14.00	0.00	0.00	0.00	0.00
		Sub-Total	**4**		**56.00**	**16.80**	**11.20**	**28.00**
5	Establishment of medium RAS (with 6 tank of minimum 30 m^3/tank capacity 10 ton/crop)/ Biofloc culture system (25 tanks of 4 m dia and 1 m height)	General	1	25.00	25.00	6.00	4.00	15.00
		Women	0	25.00	0.00	0.00	0.00	0.00
		SC	0	25.00	0.00	0.00	0.00	0.00
		ST	0	25.00	0.00	0.00	0.00	0.00
		Sub-Total	**1**		**25.00**	**6.00**	**4.00**	**15.00**

Components under PMMSY

Sr. No.	Name of the Component	Category	Units (No/Ha)	Unit cost	Total Project cost	Central Share	State Share	Beneficiary Share
6	Establishment of small RAS (with 1 tank of minimum 100 m/Biofloc (7 tanks of 4 m dia and 1 m height) culture system	General	1	3.00	3.00	0.72	0.48	1.80
		Women	0	3.00	0.00	0.00	0.00	0.00
		SC	0	3.00	0.00	0.00	0.00	0.00
		ST	0	3.00	0.00	0.00	0.00	0.00
		Sub-Total	**1**		**3.00**	**0.72**	**0.48**	**1.80**
7	Bivalve cultivation (Mussels, Clam, Pearls etc.)	General	5	0.20	1.00	0.24	0.16	0.60
		Women	3	0.20	0.60	0.22	0.14	0.24
		SC	0	0.20	0.00	0.00	0.00	0.00
		ST	2	0.20	0.40	0.14	0.10	0.16
		Sub-Total	**10**		**2.00**	**0.60**	**0.40**	**1.00**
8	Ice Plant/storage of minimum 10 tonnes	General	1	40.00	40.00	9.60	6.40	24.00
		Women	0	40.00	0.00	0.00	0.00	0.00
		SC	0	40.00	0.00	0.00	0.00	0.00
		ST	0	40.00	0.00	0.00	0.00	0.00
		Sub-Total	**1**		**40.00**	**9.60**	**6.40**	**24.00**
9	Ice Plant/storage of minimum 20 tonnes	General	2	80.00	160.00	38.40	25.60	96.00
		Women	0	80.00	0.00	0.00	0.00	0.00
		SC	0	80.00	0.00	0.00	0.00	0.00
		ST	0	80.00	0.00	0.00	0.00	0.00
		Sub-Total	**2**		**160.00**	**38.40**	**25.60**	**96.00**
10	Modernization of cold storage/ice plant	General	2	50.00	100.00	24.00	16.00	60.00
		Women	0	50.00	0.00	0.00	0.00	0.00
		SC	0	50.00	0.00	0.00	0.00	0.00
		ST	0	50.00	0.00	0.00	0.00	0.00
		Sub-Total	**2**		**100.00**	**24.00**	**16.00**	**60.00**
11	Refrigerated Vehicles	General	2	25.00	50.00	12.00	8.00	30.00
		Women	2	25.00	50.00	18.00	12.00	20.00
		SC	0	25.00	0.00	0.00	0.00	0.00
		ST	0	25.00	0.00	0.00	0.00	0.00
		Sub-Total	**4**		**100.00**	**30.00**	**20.00**	**50.00**

Components under PMMSY

Sr. No.	Name of the Component	Category	Units (No/Ha)	Unit cost	Total Project cost	Central Share	State Share	Beneficiary Share
12	Insulated Vehicles	General	5	20.00	100.00	24.00	16.00	60.00
		Women	5	20.00	100.00	36.00	24.00	40.00
		SC	0	20.00	0.00	0.00	0.00	0.00
		ST	0	20.00	0.00	0.00	0.00	0.00
		Sub-Total	**10**		**200.00**	**60.00**	**40.00**	**100.00**
13	Motor cycle with ice box	General	5	0.75	3.75	0.90	0.60	2.25
		Women	0	0.75	0.00	0.00	0.00	0.00
		SC	1	0.75	0.75	0.27	0.18	0.30
		ST	4	0.75	3.00	1.08	0.72	1.20
		Sub-Total	**10**		**7.50**	**2.25**	**1.50**	**3.75**
14	Three wheeler with ice box including e-Rickshow/ Auto Rickshaw	General	5	3.00	15.00	3.60	2.40	9.00
		Women	3	3.00	9.00	3.24	2.16	3.60
		SC	0	3.00	0.00	0.00	0.00	0.00
		ST	2	3.00	6.00	2.16	1.44	2.40
		Sub-Total	**10**		**30.00**	**9.00**	**6.00**	**15.00**
15	Construction of fish retail markets including ornamental fish/ aquarium markets	General	4	100.00	400.00	96.00	64.00	240.00
		Women	0	100.00	0.00	0.00	0.00	0.00
		SC	0	100.00	0.00	0.00	0.00	0.00
		ST	0	100.00	0.00	0.00	0.00	0.00
		Sub-Total	**4**		**400.00**	**96.00**	**64.00**	**240.00**
16	Fish value add enterprises units bodies	General	1	50.00	50.00	12.00	8.00	30.00
		Women	0	50.00	0.00	0.00	0.00	0.00
		SC	0	50.00	0.00	0.00	0.00	0.00
		ST	0	50.00	0.00	0.00	0.00	0.00
		Sub-Total	**1**		**50.00**	**12.00**	**8.00**	**30.00**
17	Construction of fish kiosks including kiosks of aquarium/ ornamental fish	General	4	10.00	40.00	9.60	6.40	24.00
		Women	2	10.00	20.00	7.20	4.80	8.00
		SC	1	10.00	10.00	3.60	2.40	4.00
		ST	1	10.00	10.00	3.60	2.40	4.00
		Sub-Total	**8**		**80.00**	**24.00**	**16.00**	**40.00**

Components under PMMSY

Sr. No.	Name of the Component	Category	Units (No/Ha)	Unit cost	Total Project cost	Central Share	State Share	Beneficiary Share
18	Support for acquisition of deep sea fishing vessels for traditional fishermen	General	10	120.00	1200.00	288.00	192.00	720.00
		Women	10	120.00	1200.00	432.00	288.00	480.00
		SC	0	120.00	0.00	0.00	0.00	0.00
		ST	0	120.00	0.00	0.00	0.00	0.00
		Sub-Total	**20**		**2400.00**	**720.00**	**480.00**	**1200.00**
19	Upgradation of existing fishing vessels for export competency	General	10	15.00	150.00	36.00	24.00	90.00
		Women	5	15.00	75.00	27.00	18.00	30.00
		SC	0	15.00	0.00	0.00	0.00	0.00
		ST	0	15.00	0.00	0.00	0.00	0.00
		Sub-Total	**15**		**225.00**	**63.00**	**42.00**	**120.00**
20	Establishment of Bio-toilets in mechanized fishing vessel	General	50	0.50	25.00	6.00	4.00	15.00
		Women	50	0.50	25.00	9.00	6.00	10.00
		SC	0	0.50	0.00	0.00	0.00	0.00
		ST	0	0.50	0.00	0.00	0.00	0.00
		Sub-Total	**100**		**50.00**	**15.00**	**10.00**	**25.00**
21	Providing boats (Replacement) and nets for traditional fishermen	General	15	5.00	75.00	18.00	12.00	45.00
		Women	3	5.00	15.00	5.40	3.60	6.00
		SC	1	5.00	5.00	1.80	1.20	2.00
		ST	1	5.00	5.00	1.80	1.20	2.00
		Sub-Total	**20**		**100.00**	**27.00**	**18.00**	**55.00**
22	Multipurpose support services- Sagar Mitra etc (for 6 months)	General	20	0.90	18.00	10.80	7.20	0.00
		Women	0	0.90	0.00	0.00	0.00	0.00
		SC	0	0.90	0.00	0.00	0.00	0.00
		ST	0	0.90	0.00	0.00	0.00	0.00
		Sub-Total	**20**		**18.00**	**10.80**	**7.20**	**0.00**
	Grand Total				**4146.500**	**1193.490**	**795.660**	**2157.350**

SPECIAL STEPS TAKEN AT THE TIME COVID -19

Department extended full cooperation to the Fishermen, Fish farmers and Fishing Societies during the outbreak of pandemic COVID-19. The unloading of fish from fishing boats were permitted and allowed to transport fish from the jetties to the cold storage/processing plants by issuing the passes. The fisheries societies were permitted to sell their fish catch stored in the cold storage/ice plants at various Panchayats and Municipalities through Insulated truck/mobile vans. The mobile van, motorcycles and auto rickshaws with ice box were also used for door to door selling of fish. The officials of Fisheries Department conducted awareness programmes for the fishermen/crew members at various fishing and traditional landing sites/ramps for sensitizing the fishermen about the pandemic and safety measures to be followed such as social distancing, washing of hands, wearing of mask etc.

मत्स्यउद्योगातर्फे कोरोना जागृती मोहीम

कुटबण : वेंधील कामगारांना मार्गदर्शन करताना मत्स्यउद्योग खात्याचे उपसंचालक चंद्रकांत वेडीप.

प्रतिनिधी

मडगाव

आज संपूर्ण देश कोरोना व्हायरसच्या विरोधात लढत आहे. या पार्श्वभूमीवर मत्स्यउद्योग संचालनालयातर्फे कुटबण, वास्को, मालीम व बाणावली जेटीवर काम करणाऱ्या कामगारांना कोरोना व्हायरसपासून सावध करण्यासाठी केंद्र सरकारच्या सूचनांचे पालन करण्याकरिता जागृती मोहीम राबविण्यात आली होती.

या मोहिमेतून त्यांना मास्क, सॅनिटायझर व सोशल डिस्टन्सिंगचे पालन व अनेक महत्वाच्या गोष्टी मत्स्यउद्योग खात्याचे उपसंचालक चंद्रकांत वेडीप यांनी सांगीतल्या. या मोहिमेतून सुमारे एक लाखाहून अधिक कामगारांना जागृत करण्यात आले. तसेच कणकोण, मुरगाव, वार्देश, तिसवाडी व पेडणे येथील परंपरिक कोळी बांधवांना भेटून या जागृती मोहिमेचे आयोजन करण्यात आले होते.

गोव्यात कोरोना व्हायरसचे सात पॉझिटिव्ह रुग्ण आढळले होते. त्यातले सर्व रुग्ण बरे झाले असले तरी आपण सर्वांनी काळजी घेण्याची गरज असल्याचे वेडीप यांनी सांगीतले.

गोवा टाइम्स

लॉकडाऊनमध्ये गोव्याच्या मत्स्योद्योग खात्याने बजावली मोलाची भूमिका

संकटातही शोधली संधी, गोमंतकीयांनाही मिळाली आवडती 'फिशकरी'

10:43

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विविध

लॉकडाऊन : मत्स्योद्योग खात्याचे योगदान

VII. PEOPLE AND EVENTS AROUND US

1. Aqua Goa Mega Fish Festival 2019-20

The Department has successfully organized a three day extravaganza event on "Aqua Goa Mega Fish Festival 2019-20" from 13th February to 15th February 2020 at SAG Ground, Campal, Panaji. This festival was a grand success and was appreciated by the people. The festivals comprised of sea food stalls, commercial stalls related to fisheries activities, ornamental fish exhibition gallery, cultural activities, seminars, film screening for students, competitions for school children etc.

The main objective of the fish festival was to expand its scope by including innovative concepts to attract more participation from fisheries stake holders and general public.

Inauguration of Aqua Goa Mega Fish Festival 2019-20

2. Vibrant Goa Global Expo and Summit 2019-20.

An event called Vibrant Goa Global Expo and Summit 2019 was held in Goa on 17/10/2019 to 19/10/2019 at Dr. Shyama Prasad Mukherjee Indoor Stadium, Panaji. The objective towards the said event is for development in key areas such as innovation, sustainability, industries, technology, youth and skill development, knowledge sharing and networking.

The Department has participated in the said event with department stall in order to expand its scope in fisheries sector by including innovative concepts to attract more participation from fisheries stake holders.

3. Narali Poornima

Department celebrates “Narali Poornima” Festival (Official function) in the office premises every year. Department had celebrated the same on 03/08/2020. During Narali Poornima day, coconut pooja is performed followed by immersion of coconut in the sea.

After this function, the Annual Satyanarayan Pooja was performed in the premises and devotees were served with Maha Prasad.

Immersion of coconut in the sea by Hon'ble Minister of Fisheries on the occasion of “Narali Poornima” followed by “Satyanarayan Pooja” in the office.

4. Launching of Website of Department of Fisheries

The Department of Fisheries launched its website on the World Fisheries Day i.e. 21/11/2020 which is accessible to general public through domain www.fisheries.goa.gov.in. The creation of website has been done by Infotech Corporation of Goa Ltd., Panaji. It highlights brief about the Department. The website provides information about the schemes of the Department, Acts and Rules, Post Vacancies, Citizen Charter, various events conducted by the Department etc. which will help fishermen in particular and general public in knowing the Department. It highlights various activities conducted by the Department. Also, the applications required to avail the schemes can be accessible through the website. It will represent the Department and will be the opportunity to enlighten the people about the services of the Department.

Website launching of the Department of Fisheries by Hon'ble Minister of Fisheries Shri. Fillipe Neri Rodrigues.

5. Celebration of WORLD FISHERIES DAY

The Department celebrated World Fisheries Day on 21st November 2020 in the Multipurpose hall of Department of Art & Culture, Panaji – Goa. Fishermen were felicitated at the hands of honorable Minister of Fisheries, Shri. Filip Neri Rodrigues. Fishermen were also distributed Kisan Credit Card in the hands of Minister of Fisheries. Department also showed the success stories of the fishermen and distributed fishing vehicles.

Inaugration of World Fisheries Day by Hon'ble Minister Shri. Fillipe Neri Rodrigues.

People present for the function.

Kisan Credit Card distribution to the fishermen.

Distribution of Motorcycle with Ice Box to Fishermen.

6. Visit of Union Minister for Fisheries to the State of Goa

The Hon'ble Union Minister for Fisheries, Shri. Giriraj Singhji had visited the State of Goa from 5th Feb. to 7th Feb. 2021. During his visit Scope and Development in fisheries sector in Goa were discussed. The proposed projects to be taken up under PMMSY are construction of Wholesale market, Construction of Fishing Harbour at Vasco, setting up of open sea cage culture, setting up of Shrimp and fin fish hatchery etc.

VIII. STATISTICS

- **WATER SPORTS**

The Department issues no objection certificate to the Water Sports vessels operating at different beaches of Goa. The total number of NOC's granted for the year 2020-21 Taluka - wise are as follows:

Sr. No.	Taluka	No. of Water Sports vessels
	NORTH GOA	
1	Bardez	251
2	Pernem	01
3	Tiswadi	49
	TOTAL	**301**
	SOUTH GOA	
1	Canacona	2
2	Salcete	50
3	Vasco	6
	TOTAL	**58**
	Inland waters	69
	Total	**428**

- **NO. OF VESSELS (TRAWLER/PURSE – SEINERS) OPERATED AT MAJOR LANDING CENTRES FOR THE YEAR 2020-21.**

Sr. No.	Mechanised fishing vessel	Total Nos.
1	Purse Seiner	306
2	Trawler cum	062
3	Trawlers	529
	Total	**897**

- **SPORT FISHING VESSEL:**

Sport fishing is a major activity for tourist in any State. The Department has 9 Nos. of Sport fishing vessels registered up to 2020-21.

- **BLOCK WISE TOTAL CANOES REGISTERED FOR THE YEAR 2020-21**

TISWADI	
Caranzalem	03
Donapaula	02
Siridao	03
Nauxim	03
Kavem	01
Odxel	03
Vadgalim	01
Cacra	01
St. Estevam	01
Chimbel	01
Carambolim	01
Total	**20**

PERNEM	
Mandrem	02
Arambol	02
Morjim	01
Total	**05**

BARDEZ	
Nerul	10
Calangute	15
Siolim	01
Anjuna	03
Reis Magos	01
Candolim	04
Colvale	01
Total	**35**

SALCETE	
Betul	01
Vellim	06
Colva	06
Benaulim	07
Varca	04
Betalbatim	02
Total	**26**

MARMUGAO	
Kantem Baina	04
Cansaulim	03
Bogmalo	02
Vasco	02
Velsao	03
Total	**14**

CANACONA	
Talpona	06
Kindlebag	01
Saleri-Cola	09
Agonda	03
Galgibag	02
Palolem	03
Pollem	01
Colomb	01
Total	**26**

- **TOTAL MOTORISED AND NON MOTORISED CANOE**

Sr. No	Traditional fishing vessels	Total Nos.
1	Non Motorised canoe	288
2	Motorised canoe	1753
	TOTAL	**2041**

- **TOTAL MOTORISED AND NON MOTORISED CANOE UP TO 2020-21**

Sr. No	Taluka	Motorized	Non Motorized	Total
NORTH GOA				
1	Bardez	373	68	441
2	Pernem	157	12	169
3	Tiswadi	306	49	355
SOUTH GOA				
1	Canacona	290	64	354
2	Ponda	03	00	03
3	Salcete	150	37	187
4	Vasco	474	58	532
	TOTAL	**1753**	**288**	**2041**

- **FISHING LICENCE:**

The Department issues fishing license to the fishing vessels which is mandatory documents to be kept onboard. The total number of new fishing license issued to the trawlers/purse-seiners and fishing canoes for the year 2019-20 is as follows:

Sr. No	Category	No. of Vessels
1	Canoes	1062
2	Trawler/Purse-seiners	410
	Total	**1472**

TALUKA WISE FISHING GEARS REGISTERED (2020-21)

Type of Gear	Tiswadi	Bardez	Ponda	Pernem	Canacona	Mormugao	Salcete	Total
Sea gill net	26	35	02	11	34	16	27	151
Sea cast net	--	--	--	--	--	--	--	--
River gill net	04	01	01	--	--	--	06	12
River cast net	00	--	--	--	--	--	--	00
Rampon net	01	--	--	--	--	--	--	01
Drag net	--	--	--	--	--	--	--	00
Purse-seine net	--	08	--	--	--	02	17	27
Trawl net	--	12	--	--	--	08	19	39
Barrier (Futauni)	--	--	--	--	--	--	--	00
Sluice gate	01	--	--	--	--	--	--	01
Stake net	--	--	--	--	--	--	--	--
Kadsari net	--	--	--	--	--	--	--	--
Other net	--	--	--	--	--	--	--	--
Ormol net	02	--	--	--	--	--	--	02
Singel net	--	--	--	--	--	01	--	01
Hook & line	--	**06**	--	--	--	--	--	06
Total	**34**	**62**	**03**	**11**	**34**	**27**	**69**	**240**

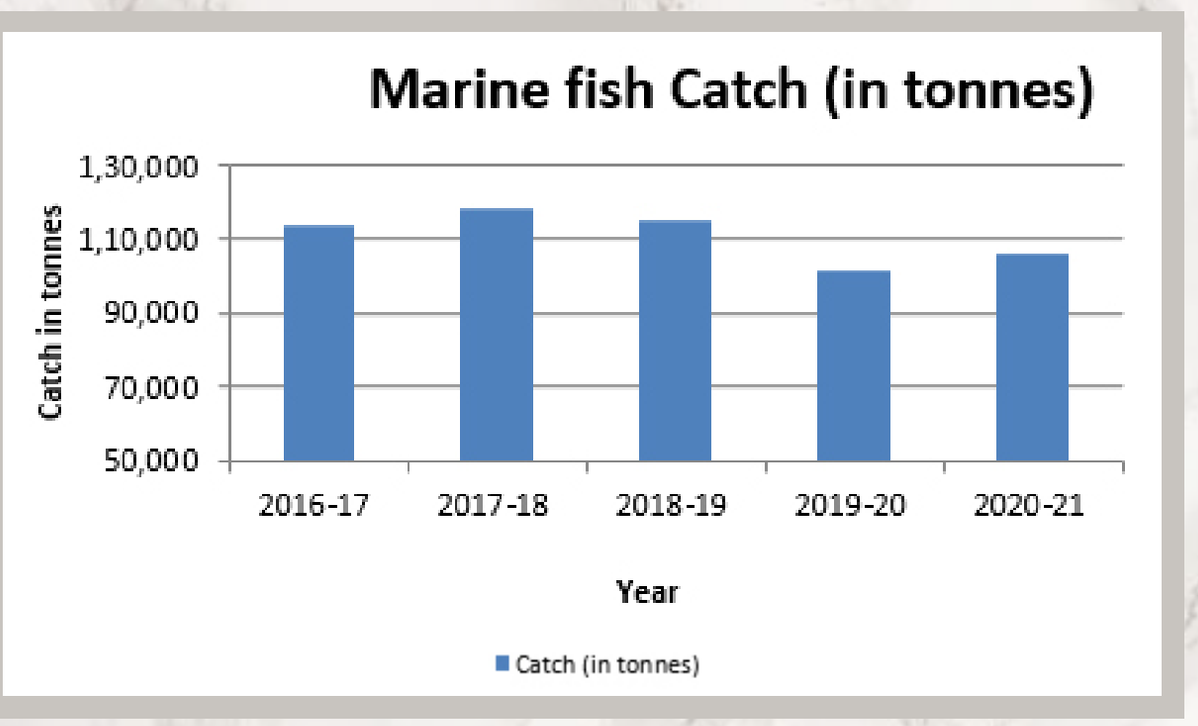
Major Jetty Wise Marine Fish Catch from 2016-17 to 2020-21
(in tonnes)

Year	Malim	Cutbona	Vasco	Chapora	Talpona	Total (Jetties)	Others	Total
2016-17	21870	28012	26486	717	681	**77766**	35791	**113557**
2017-18	24782	37312	24288	1127	1389	**88898**	29567	**118465**
2018-19	41313	29855	21046	821	619	**93654**	21805	**115459**
2019-20	34376	27951	21471	1163	436	**85397**	16069	**101466**
2020-21	26915	27022	20830	511	1073	**76351**	29808	**106159**

Marine Fish Production of Goa for the period from 2016-17 to 2020-21

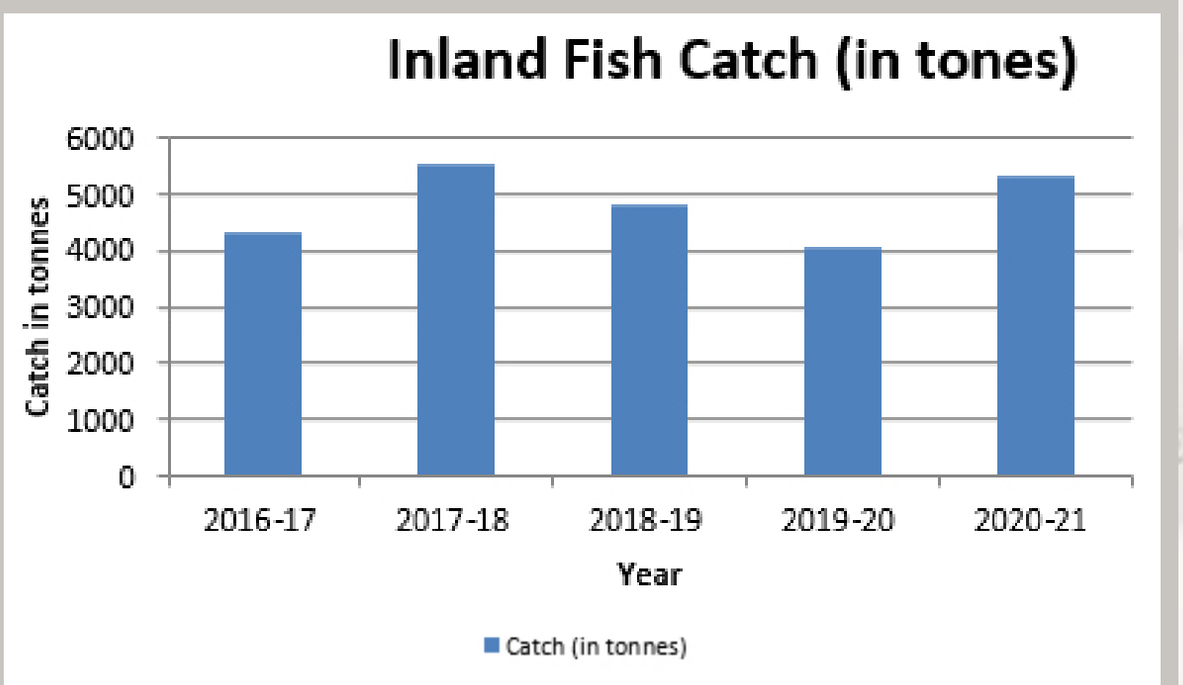
(In Tonnes)

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Catch (in tonnes)	113557	118465	115459	101466	106159



Inland Fish Production of Goa for the period from 2016-17 to 2020-21
(in tonnes)

Year	2016-17	2017-18	2018-19	2019-20	2020-21
Catch (in tonnes)	4336	5542	4829	4081	5325



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

Sr. No.	Species	2016-17	2017-18	2018-19	2019-20	2020-21
1	2	3	4	5	6	7
1	Mackerals (Bangdo)	22531	33422	37514	28519	28703
2	Sardines (Tarlo)	42818	33745	15451	12647	5218
3	Cat Fish (Sangot)	698	467	262	1205	424
4	Shark fish (Mori)	143	207	1041	716	891
5	Seer Fish (Wiswan)	2833	1822	1288	2860	4031
6	Prawns (Sungtam)	5467	9806	6825	6262	5470
7	Pomprets (Paplet)	1700	1361	495	1353	1522
8	Cuttle Fish (Manki)	1551	1425	2201	3757	1862
9	Tuna (Bokdo)	7153	9277	9614	8478	9915
10	Ribbon Fish (Balle)	602	1026	1618	1669	2704
11	Reef Cod (Gobro)	636	685	1376	547	271
12	Kowala kowal (Velli)	711	1269	749	496	420
13	Golden Anchovy (Kapsale)	280	279	121	75	71
14	Silver Belly (Kampi)	1931	3030	5366	6385	7280
15	Soles (Lepo)	2786	1237	2203	1166	1741
16	Silver Bar (Karli)	302	376	184	271	433
17	Crabs (Kurlio)	1126	1059	740	1003	2168
18	Sciaenoids (Dodiaro)	3957	1715	1435	2870	2773
19	Butter Fish (Soundale)	1648	618	647	573	881
20	Others	14684	15639	26329	20614	29381
	Total	**13557**	**118465**	**115459**	**101466**	**106159**

Financial year-wise Inland fish production for the last five years

Sr. No	Name of the Fish	2016-17	2017-18	2018-19	2019-20	2020-21
1	2	3	4	5	6	7
1	**Prawns**					
a	Big	133	206	240	109	185
b	Medium	294	326	159	54	175
c	Small	404	428	309	281	415
2	Lady Fish	101	174	110	61	136
3	Mullets	461	738	644	461	598
4	Gerres	110	113	71	41	95
5	Lutianus	125	151	166	75	123
6	Cat Fish	440	619	546	399	566
7	Anchovy	51	97	62	25	51
8	Pearl Spot	258	446	364	328	446
9	Betki	97	129	164	61	128
10	Milk Fish	18	16	15	2	3
11	Megalops	39	30	30	9	25
12	Scatophagus	73	56	55	36	87
13	Ambasis	241	403	304	262	364
14	Crabs	404	607	455	382	567
15	Black Water Clamps	255	56	42	133	198
16	False Clamps	105	96	111	227	200
17	Oysters	67	85	108	282	169
18	Mussel	58	131	139	90	83
19	Lepo	6	3	1	--	13
20	Indian Salmon	--	--	--	--	--
21	Balle Reddish	1	--	--	5	--
22	Sciaenoids	--	--	--	--	--
23	Others(Palu)	78	85	68	--	--
24	Others(Vagolem)	--	--	--	--	--
25	Others (Leather Jackets)	--	--	--	--	--
26	Others	--	--	--	41	36
27	Miscellaneous	517	547	666	717	662
	Total	**4336**	**5542**	**4829**	**4081**	**5325**

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

Quantity in M.tonnes
Value in Rs. Lakhs

Sr. No	Item		2016	2017-18	2018-19	2019-20	2020-21
1	2	3	4	5	6	7	8
1	Fr. Shrimps	Q	1840	3327	1908	1526	4756
		V	82.32	14879	7391.89	6304	21357
2	Fr. Cuttle Fish	Q	2419	1404	1265	1718	1123
		V	62.26	4360	3812.86	4535	2340
3	Fr. Squids	Q	3985	5307	5746	3517	2522
		V	97.71	9537	12215.55	7607	7239
4	Fr. Fresh Fish	Q	28634	34984	24289	5533	7909
		V	341.54	37307	33843.35	8113	11924
5	Fr. Tuna	Q	-	-	-	-	-
		V					
6	Ribbon Fish	Q	-	-	-	-	-
		V					
7	Indian Mackerels	Q	-	-	-	-	-
		V					
8	Reef Cod	Q	-	-	-	-	-
		V					
9	Fr. Seer Fish	Q	-	-	-	-	-
		V					
10	Other fishes	Q	311	1815	4590	2404	239
		V	3.02	1593	4554.25	2292	665
11	Dried Fishes	Q	1020	3733	140	-	-
		V	9.69	3517	149.35		
	Total	**Q**	**38209**	**50570**	**37938**	**14698**	**16549**
		V	**596.54**	**71193**	**61967**	**28851**	**43525**

IX. ARTICLES BY DEPARTMENT PERSONNEL

Multi Species Finfish Cage Culture For Alternative Livelihood

Shri. Chandresh Pramod Haldankar, Supdt. Of Fisheries,
Directorate of Fisheries, Panaji- Goa

Introduction

Goa situated at the west coast, having coast line of 104 km has significantly helped the people living in the coastal areas in undertaking fishing activity as a source of livelihood. The six major rivers Chapora, Mandovi, Zuari, Talpona, Galgibagh, Sal and its tributaries intricately traverse across the State making it a rich nursery and feeding ground for the aquatic life benefiting the inland fishermen. Further around 600 hectares area of land is under the pisciculture with sluice gate and around 198.72 hectares of land is scientifically developed for Shrimp farming.

Need for the technology

Brackish water or rivers are primarily used for capture fisheries by the fishermen in the State presently. Fisher folks residing on the bank of river are dependent on the availability of fish catch for their income and woman's are engaged in selling of the fish catch. However, the potential use of the rivers and brackish water has not being explored in previous years.

Hence, to provide alternative livelihood, Cage culture in river especially in brackish water can be powerful technology to utilize the untapped potentials of rivers thereby enhancing the overall fish production, providing self- employment, increase the income and livelihood security of the local fisher folk community. Also, woman empowerment and participation of self help Group's can be development through such introduction of technology.

Multi- Species Finfish Brackish water cage culture

A comprehensive low cost brackish water cage culture technology for sustainable and viable farming of various brackish water finfish species can be adopted by fisher folk / farmer. While adopting such technology, site should be selected which is free from all kind of pollution. Site should have regular water depth & above 3meters and must retain at least 2 - 2. 5mtrs water level during lowest low tide of the year. The cage main structure and frame can be made up &Galvanized iron (GI) pipes, PVC pipes or bamboo poles, however GI cages can be more preferred due to longer shelf life. Ideal cage dimension should be 4m x 4m x 2m (L x b x h) (32 m 3).

The cage structure can be floated by using 6- 8 nos. a HDPE barrels. Anchors of appropriate weight should be selected to withstand the cages For strong water current and to avoid displacement of cages during tides. Anchors or concrete weight blocks can be used for anchoring. Two types of nets i.e. pre-grow out and grow - out nets are used for cage culture. Knotless or knotted HDPE net, diamond or hexagonal Shape mesh should be preferred. To protect culture species and inner nets from river predators, outer net should be used of appropriate mesh size and strong fabrication.

Production of high value food fish is one of the most promising aquaculture based livelihood option in such cage culture practices. Common candidate finfish for such cage culture can be Asian Seabass (Chonak), Pearlspot (Kalundar), Milkfish (Gholshi), Grey mullet (Shevto) Red snapper (Tamso), Cobia (Modso) and Pompano. However, among candidate species Asian Seabass and Pearlspot is considered as high value food fish with higher growth rates and high market-values.

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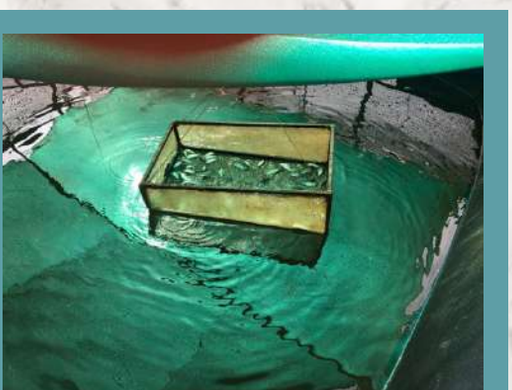
While adopting the brackish water cage culture technology and for it's actually implementation following factors should be taken into consideration.

1) Suitable site selection
2) Selection of Candidate Species
3) Appropriate stocking density
4) Feed and Feed management
5) Cage management
6) Harvesting and Marketing

Conclusion

In order to address the opportunities and to promote such technology, Department of Fisheries, Government of Goa through the flagship scheme Pradhan Mantri Matsya Sampada Yojana of Government of India implements the component “Installation of cages” with unit cost of Rs. 3 lakhs of which 40% subsidy is eligible for General category and 60% subsidy is eligible for SC/ ST/Woman category.

Further after successful demonstration of brackish water cage culture by ICAR-Central Institute of Brackish water Aquaculture (CIBA), in neighboring States, Department is regularly conducting training and awareness programme towards the Inland river cage culture. Department is also ensuring the participation of expert faculties such as Scientist , expertise's for the trainings so that upcoming farmers and fisher folk can take up this activity for livelihood and self employment in the State.



Probiotics in Aquaculture- friendly sustainable Aquaculture

Smt. Rohita Naik, Superintendent of Fisheries
Directorate of Fisheries, Panaji Goa

Aquaculture is the farming of aquatic organisms in order to produce healthy fish to assure the maximum profit. It has been considered as an option to cope with the world food demand. Due to overfishing of wild populations, aquaculture has become an economic activity of great importance around the world. However, the intensification of aquaculture practices requires cultivation at high densities, which has caused significant damage to the environment due to discharges of concentrated organic wastes, that deplete dissolved oxygen in ponds, giving rise to toxic metabolites (such as hydrogen sulfide, methane, ammonia, and nitrites), that often are responsible for mortality.

Moreover, under these conditions of intensive production, aquatic species are subjected to high-stress conditions, due to which fish culture is currently suffering from serious losses due to infectious diseases. The use of antimicrobial drugs, pesticides and disinfectant in aquaculture disease prevention and growth promotion has led to the evolution of resistant strains of bacteria. The need for increased disease resistance, growth of aquatic organisms, and feed efficiency has brought about the use of probiotics in aquaculture practices.

The word probiotic is derived from Greek words, Pro (favour) and Bios (life) meaning 'for life'. Probiotics used in aquaculture have been broadly defined as the “live microbial feed supplement which beneficially affects the host animal by improving its intestinal microbial balance and protecting the host animal against harmful bacterial pathogens. “Therefore, several terms such as “friendly”, “beneficial”, or “healthy” bacteria are also commonly used to describe probiotics. The first probiotics in aquaculture discovered long time ago was Lactobacillus sp., the lactic acid producing bacteria. Major categories in commercial formulation include Bacillus spp., lactic acid bacteria, yeast, and nitrifying/denitrifying bacteria and their use is regulated by careful management recommendations (fig.1).

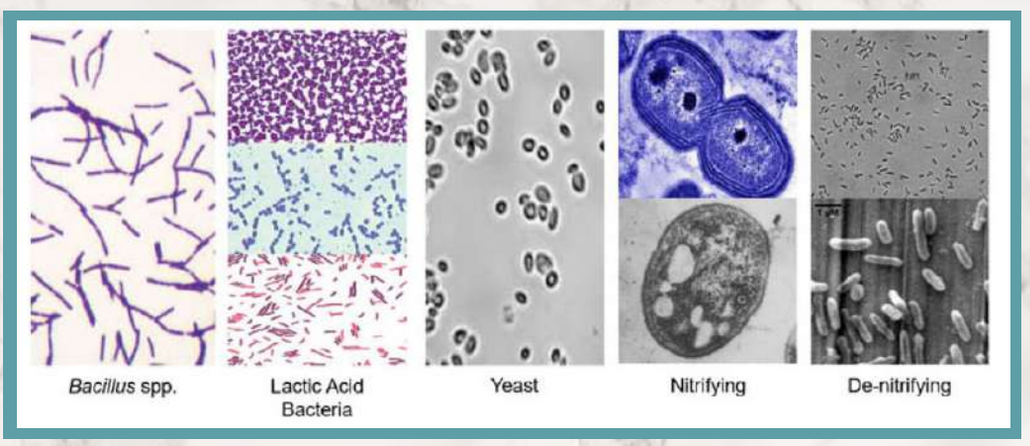


Fig.1.Main categories of probiotics for Aquaculture

Several routes for probiotic administration are used in aquaculture systems. Probiotic scan be administered as dietary supplements (via live food such as Artemia and rotifers or pellet food) or added to the water directly. Furthermore, probiotic delivery via injection has also been reported.

Probiotics strains are either used as single bacterial strain or multi strains which contain more than one strain. The benefits of such supplements include, improved feed value, enzymatic contribution to digestion, inhibition of pathogenic microorganisms, anti-mutagenic and anti-carcinogenic activity, increased immune response, stress tolerance to the animals by reducing metabolic and oxidative stress factors and certain probiotics produce vitamin B1 and vitaminB12 which help in the fish growth, metabolism and reproduction.

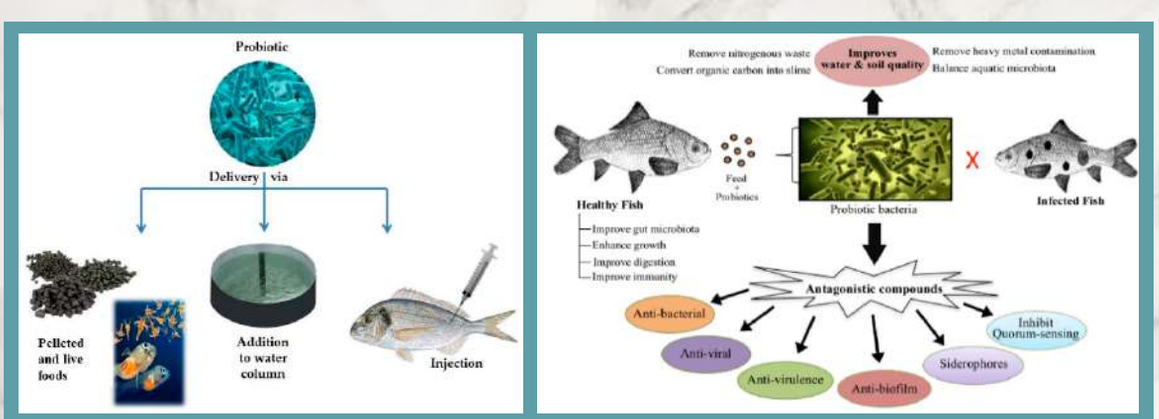


Fig2.a Probiotics administration in aquaculture, b. mode of action of probiotics

Probiotics are used in Biofloc culture system. Biofloc consist of developing microbial aggregates formed from carbon:nitrogen ratio (C: N) in water, with low or zero exchange and high oxygenation, diets with low crude protein content and external carbon source like molasse (sugar cane), rice bran, wheat bran, among others. This C:N ratio allows microbial community growth, especially of heterotrophic bacteria, which metabolize carbohydrates and consume inorganic nitrogen (principally ammonia NH4+), reducing their concentration and improve water quality.

Biofloc technology (BFT) is one of the innovative methodologies for waste management and nutrient retention that offers a solution to solve environmental problems in aquaculture because it doesn't use water exchange to solve nitrogen compound elimination, but it utilizes microbial assimilation, stimulated for addition of material rich in carbon, to transform those compounds. Also, microbial protein can be used as food for culture species. This is very important because in any fish and crustacean culture system, water quality management is the principal factor that impacts in production sector, particularly in intensive and hypertensive culture systems.

CONCLUSION

Probiotics as an alternative to antibiotics in aquaculture. They help to increase fish growth by enhancing the feed conversion efficiency, improve water quality by balancing bacteria as well as confer protection against harmful bacteria by different modes of action.

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A Step towards Sustainable Fisheries Management-
Implementation of Minimum Legal Size in Fisheries

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The State of Goa has been blessed with rich waters of the rivers and sea. Being on the coast, Fishing is a major activity for the population of Goa. Lives of the people thriving on the fishing business depend on the understanding and application of the essence of conservation. Utilization of wealth obtained from nature, preservation in a conventional way and maintenance of the ecological balance by eco-friendly fishing measures is a step towards securing a sustainable future for fisheries.

Fisheries experts are of a view that commercialization of fishing and effectiveness of modern fishing techniques has been one of the factors for dramatic decline in fisheries stocks of commercial species and exploitation of non-target marine species. Bycatch, is all the sea life which was not being targeted but land into commercial industries for merge currency value, since markets have been established for the non-target species which is caught incidentally as a result of indiscriminate fishing gears. Due to failure in use of selective fishing gears thousands of non-target marine species are caught and large areas of marine habitat destroyed.

Marine life simply does not have the capacity to reproduce at a rate which will keep pace with the rate of extraction and so the biodiversity of the oceans will reach such a depleted state that no fishing activity will be economically viable. Efforts need to be made for reducing ecological impacts of fisheries. Fisheries management is a process that creates and enforces the rules that are needed to prevent overfishing and help overfished stocks rebound. Objectives of fisheries management can be divided into four subsets: biological, ecological, economic and cultural. These categories ensure sustainable fisheries by:

- Maintaining the target species at or above the levels necessary to ensure their continued productivity (biological),
- Minimizing the impacts of fishing on the physical environment and on non-target (bycatch), associated and dependent species (ecological),
- Maximizing the net incomes of participating fishers (economic), and
- Maximizing employment opportunities for those dependent on the fishery for their livelihoods (social).

Sustainability means ensuring the habitat and ecosystem supporting the fishery are in good condition. A sustainable fishery has sufficient spawning fish to produce the next generation, while allowing fishing to take place. This ensures we can secure our fish and aquatic fish resources for the future.

Minimum Legal Size (MLS) in fisheries is seen as a fisheries management tool with the ability to protect juvenile fishing, maintain spawning stocks and control the size of fish caught. The MLS sets the smallest size at which a particular species can be legally retained if caught. MLS could be used to protect immature fish ensuring that enough fish survive to grow and spawn, control the numbers and sizes of fish landed, maximize marketing and economic benefits and promote the aesthetic values of fish.

Goa State fisheries on the recommendation of Marine Products Export Development Authority and ensuring a step towards conservation of fisheries has implemented minimum legal size for 20 species in order to avoid juvenile fishing in the State from January 2020.

The challenge now is designing a brighter future for both marine life that live in our seas and people that depend on those seas for their livelihoods. Mere implementation of Minimum Legal Size in Fisheries through policy decision may not be effective. Self consciousness, catching control, smart consumers and collective responsibility of individuals towards conservation, will help ensure a secure future towards Fisheries.

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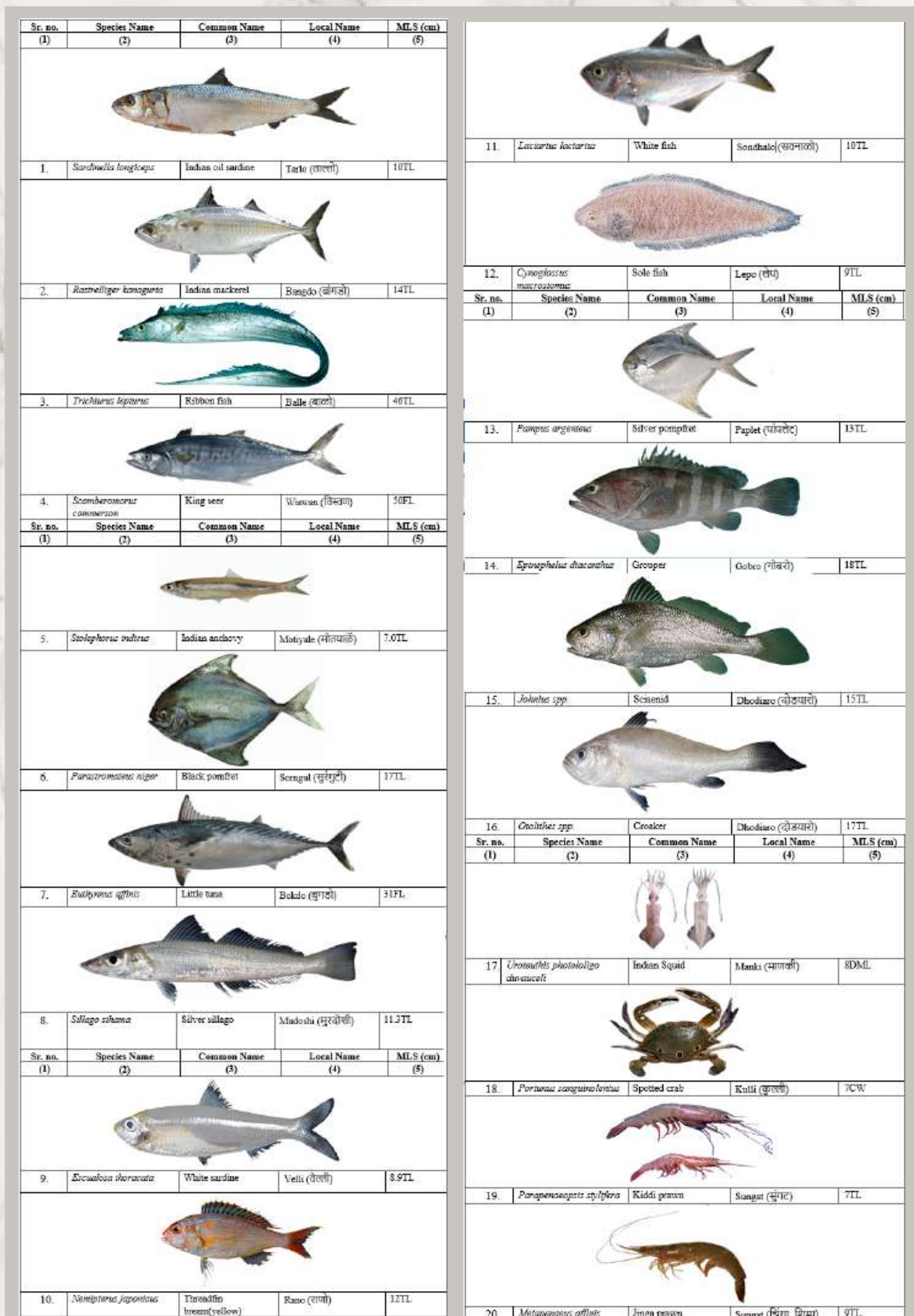
Guide for Implementation of Minimum Legal Size in Fisheries in Goa for following Fish Species



Sr. no. (1)	Species Name (2)	Common Name (3)	Local Name (4)	MLS (cm) (5)
1.	*Sardinella longiceps*	Indian oil sardine	Tarlo (तारलो)	10TL
2.	*Rastrelliger kanagurta*	Indian mackerel	Bangdo (बांगडो)	14TL
3.	*Trichiurus lepturus*	Ribbon fish	Balle (बाल्लो)	46TL
4.	*Scomberomorus commerson*	King seer	Wiswan (विस्वाण)	50FL
5.	*Stolephorus indicus*	Indian anchovy	Motiyale (मोतयाळे)	7.0TL
6.	*Parastromateus niger*	Black pomfret	Sorngul (सुरंगुटी)	17TL
7.	*Euthynnus affinis*	Little tuna	Bokdo (बुगडो)	31FL
8.	*Sillago sihama*	Silver sillago	Madoshi (मुरडोशी)	11.3TL
9.	*Escualosa thoracata*	White sardine	Velli (वेल्ली)	8.9TL
10.	*Nemipterus japonicus*	Threadfin bream(yellow)	Rano (राणो)	12TL
11.	*Lactarius lactarius*	White fish	Sondhalo(सवनाळो)	10TL
12.	*Cynoglossus macrostomus*	Sole fish	Lepo (लेप)	9TL
13.	*Pampus argenteus*	Silver pompfret	Paplet (पापलेट)	13TL
14.	*Epinephelus diacanthus*	Grouper	Gobro (गोबरो)	18TL
15.	*Johnius spp*	Sciaenid	Dhodiaro (दोडयारो)	15TL
16.	*Otolithes spp*	Croaker	Dhodiaro (दोडयारो)	17TL
17	*Uroteuthis photololigo duvauceli*	Indian Squid	Manki (माणकी)	8DML
18.	*Portunus sanguinolentus*	Spotted crab	Kulli (कुल्ली)	7CW
19.	*Parapenaeopsis stylifera*	Kiddi prawn	Sungat (सुंगट)	7TL
20.	*Metapenaeus affinis*	Jinga prawn	Sungat (झिंगा शिम्प)	9TL

Abbreviations:-TL-Total Length, FL-Fork Length, DML- Dorsal Mantle Length, CW- Carapace width of crabs, MLS-Minimum Legal Size
Consider the catch as violation if more than 50% of the catch sample is composed of fishes at or below the prescribed MLS.

Phytoplankton associated with seasonal oxygen depletion in waters of the western continental shelf of India

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The Arabian Sea productivity is regulated mainly by nutrient inputs from below the euphotic zone via upwelling and convective mixing (Madhupratap et al. 1996; Wiggert et al. 2005). The resultant nutrient enrichment of the euphotic zone leads to high primary productivity and phytoplankton blooms (Barber et al. 2001; Gauns et al. 2005) in the region for most parts of the year. Thus, high surface productivity in the two seasons, southwest (SW) and northeast monsoon(NEM) leads to considerable flux of organic particles to the deep (Ramaswamy & Nair 1994; Rixen et al. 2005) and the concomitant high rates of oxygen consumption results in oxygen deficiency. Thus, making Arabian sea one of the world's most intense oxygen minimum zones (OMZ) with O2 concentrations < 0.1ml L-1 (Naqvi, 1987; Morrison et al. 1999).

In contrast, to the perennial OMZ in the central northern areas of Indian Ocean, severe oxygen deficiency is experienced during summer upwelling along the western continental shelf of India covering a stretch of 180,000 km2 coast line. The onset of summer monsoon (May–June) marks the beginning of upwelling along the SW coast of India (Sarma, 1967, Naqvi et al. 2000) which persists till October and propagates northward (Banse, 1959; Unnikrishnan & Antony, 1992). This effect is also seen extending into the rivers of Mandovi-Zuari estuary bringing in low oxygenated waters (Sankaranarayanan & Jayaraman, 1972). The enhanced nutrient supply via upwelling that brings up subsurface water of low O2 content is further reduced through degradation of organic matter. Thus, high organic loading is one of the primary causes of O2 depletion in coastal areas and enclosed seas, a wide-spread global problem. The water column undergoes gradients in oxygen concentration depending upon the dissolved oxygen levels, the water column was designated as oxic (>2ml L-1), hypoxic (<2ml L-1), suboxic (<0.2ml L-1) and anoxic (<0.02ml L-1) (Naqvi et al. 2006) and accordingly phytoplankton present are reported here.

Phytoplanktons are microscopic autotrophic components of the plankton community and key part of the ocean and freshwater ecosystem. They are food for other plankton and small fish as well as larger animals such as whales Seasonal variability in phytoplankton community in relation to gradients in dissolved oxygen at the Candolim Time Series transect located (CaTS) located at 150 31 N, 730 39 E, (depth 25 m) over the central western continental shelf of India is presented in this study.

A total of 96 phytoplankton species were found in these waters on an annual scale. Most of them occurred under oxic condition. Generally, water column remains well oxygenated (>2ml L-1) during non-monsoon period (Dec-April) 3.13 - 6.67 O2 ml L-1). The phytoplankton abundance ranged from 4 x 104 and 5.5x105 (avg. 1.2x105 + 1.5x105) cells L-1. In general, diatoms remained the predominant forms >95% . Some of the dominant diatoms (centric) were Cosinodiscus spp, Ditylum spp, Odontella spp, Chaetoceros spp, Eucampia spp, Guinardia spp, Leptocylindruis spp, Skeletonema costatum, while, pennate diatoms (12%) were Pseudo-nitzschia spp, Thalassionema spp Coconeis spp, Navicula spp, Pleurosigma spp. Amongst dinoflagellates, Amphidinium spp, Gyrodinium spp , Gymnodinium spp, Prorocentrum spp, Scripsiella spp, Protoperidinium spp were common.

On the onset of southwest monsoon, upwelling processes and land derived nutrients leads to burst of surface productivity with chlorophyll a as high as 7.6 mg Chl a m-3. The decomposition of near surface blooms plus low oxygen through seasonal upwelling eventually depletes O2 level towards late SWM (June –July), where subsurface and near bottom water became hypoxic, ranging from 0.24 -1.56 mlL-1. Phytoplankton abundance ranged from 1.8x104-1.3x105 (5.9 x104 + 4.1 x104) cells L-1. The algal composition comprised of 68 species (diatom: 56 and dinoflagellates: 12) with a total of 36 genera. The major dominant diatoms present were chain forming cells like Thalassiosira subtilis, Skeletonema costatum, Leptocylindrus minimus, Chaetoceros curvisetus, Thalassionema nitzschioides, Thalassiothrix spp, Pseudonitzcshia spp and Asterionella japonica .Those that were present in scarce quantities at the time of sampling were Planktoniella sol, Triceratium spp, Streptotheca tamesis, Coconeis spp, and Amphora. Dinoflagellates in the study area always show (<5%) of the total composition in this oxygen gradient. Their abundance was found to be 100-1500 cells L-1.

Further, suboxic conditions prevailed during August- Oct, subsurface waters (>10m) become severely suboxic (0. 3 - 0.03 ml L-1) and at times turns anoxic particularly near bottom waters particularly in October. However, pico-autotrophs (<5-0.7 µm) constituted about 65% of the total phytoplankton biomass (chlorophyll a). Even at undetectable levels of dissolved oxygen, some algal forms were present. Their abundance varied between 5.6 x 103 and 8.2 x 104(3.8+3.9 x104) cells 1-1. Pennate diatoms, were found to be coupled with low oxygen waters. Other communities of dinoflagellates were virtually absent except for Gyrodinium species.

To conclude, seasonally reversing circulation along the west coast of India induces changes in oxygen, affecting plankton dynamics. Micro plankton (mostly Diatoms but also dinoflagellates (>5µm) constitute a major part of the phytoplankton biomass in oxic waters, particularly the chain forming diatoms that proliferates faster than dinoflagellates. Pico-autotrophs (Synechococcus) and to a smaller extent, pennate diatoms are found to be predominant in oxygen depleted waters in late SW monsoon period suggesting clear shifts in phytoplankton community structure on the time-scales.

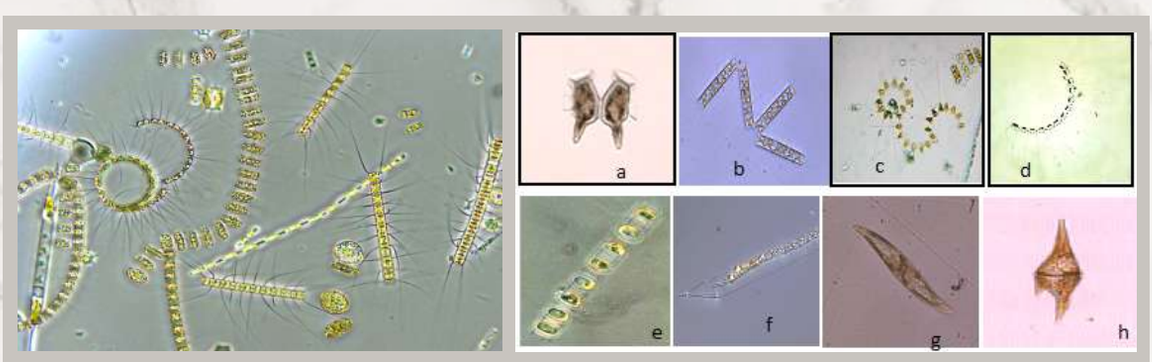

Plate1.A Some common marine phytoplankton species found in coastal waters of Goa (a)Dinophysis caudata (b) Thalassionema nitzschioides (c) Astrionella japonica (d) Chaetoceros curvisetus (e) Skeletonema costatum (f) Rhizosolenia alata (g) Pleurosigma angulatum (h) Ceratium furca.

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X. HUMAN RESOURCE

List of the Staff retired during the year 2020-21 upto March 2021.

Sr. No.	Name of the Official	Designation	Date of Retirement
1.	Smt. Dora C Lobo e Fernandes	Office Superintendent	31/05/2020
2.	Shri Surendra R. Shirodkar	Asstt. Electrician	31/10/2020
3.	Shri Deelip B. Gawandi	Fisheries Surveyor	30/11/2020
4.	Shri Illo D.Gawde	Junior Deckhand	31/01/2021
5.	Shri Premanand V. Kalagutkar	Junior Deckhand	28/02/2021
6.	Shri Dinesh Naik	Mechanical Instructor	31/03/2021
7.	Shri Govind K. Gawde	Upper Division Clerk	31/03/2021

List of Staff Promoted During the year 2020-21 upto March 2021

Sr. No.	Name of the Official & Designation	Designation	Promoted to
1	Smt. Preetam B. Naik,	Assistant. Superintendent of Fisheries	Superintendent of Fisheries
2	Smt. Ujwala V.N. Shirodkar,	Lower Division Clerk	Upper Division Clerk
3	Shri Uday Khanolkar,	Fisheries Surveyor	Fisheries Officer
4	Shri. Divakar Korgaonkar,	Fisheries Surveyor	Fisheries Officer

EMPLOYEE DIRECTORY

	Name and Designation of the Staff of Directorate of Fisheries.		
Sr. No.	**Name**	**Designation**	**Mobile No.**
1.	Dr. Shamila Monteiro	Director Fisheries	9326125026
2.	Shri. Chandrakant Velip	Dy. Director Fisheries	9923499855
3.	Dr. Smita Mazumdar	Dy. Director Fisheries	7888299898
4.	Shri Digmbar Kalapurkar	Dy. Director (Stat & Plann)	9765327980
5.	Smt. Megha Kerkar	Superintendent of Fisheries	9420162084
6.	Shri. Chandresh Haldankar	Superintendent of Fisheries	9764480663
7.	Smt. Rohita Naik	Superintendent of Fisheries	9764239688
8.	Smt. Preetam Naik	Superintendent of Fisheries	8806839645
9.	Shri. Wilson Furtado	Asstt. Accounts Officer	9850999461
10.	Shri. Sudesh Volvoikar	Research Assistant	9421553810
11.	Smt. Janaki Goenkar	Office Superintendent	9326125026
12.	Smt. Kshama Navelkar	Head Clerk	9423075353
13.	Smt. Vaishali Shirodkar	Accountant	8208842470
14.	Smt. Zigyasa Murkar	Asst. Supdt. of Fisheries	8407973579
15.	Shri. Chandan Shirodkar	Asst. Supdt. of Fisheries	9270067014
16.	Dr. Sunita Pauskar	Asst. Supdt. of Fisheries	9850764554
17.	Shri. Pradeep Gawas	Asst. Supdt. of Fisheries	9403175091
18.	Smt. Roshini Komarpant	Asst. Supdt. of Fisheries	9764243587
19.	Shri. Ravi Rodrigues	Asst. Supdt. of Fisheries	9921948844
20.	Shri. Alec De Souza	Fisheries Officer	9604033152
21.	Shri. Vipul Mapari	Fisheries Officer	8806407880
22.	Dr. Christabelle Fernandes	Fisheries Officer	9764320787
23.	Shri. Joel Diniz	Fisheries Officer	9923972603
24.	Shri. Sagar Naik	Fisheries Officer	7798889240
25.	Shri. Uday Khanolkar	Fisheries Officer	9422018550
26.	Shri. Divakar Korgaonkar	Fisheries Officer	9423837493
27.	Shri. Saby Moraes	Fisheries Officer	9763555380
28.	Shri. Shamrao Raikar	Jr. Technician	9923159494
29.	Marcia Fernandes	Jr. Stenographer	9168790606
30.	Shri. Deepak Kunkoliker	Marketing Inspector	8806624355
31.	Shri. Dina Volvoikar	Store Keeper	9049600907
32.	Shri. Joao Mascarenhas	UDC	8322787090
33.	Smt. Roshan Taluanekar	UDC	9049270608
34.	Smt. Palhavi Dangui	UDC	9850183385
35.	Shri. Samir Parab	UDC	8390829693
36.	Shri. Uday Kamat	UDC	9923748915
37.	Smt. Ujwala V. N. Shirodkar	UDC	9860032006

38.	Shri. Lavu Gauns	UDC	7774953547
39.	Shri. Umesh Kulkarni	LDC	8411025887
40.	Shri. Siddesh Naik	LDC	9823454593
41.	Smt. Anita Madkaikar	LDC	9637017392
42.	Shri. Damodar Kalangutkar	LDC	7588454082
43.	Smt. Prajakta Haldankar	LDC	9823987389
44.	Smt. Renisha Cardozo	LDC	8805232307
45.	Shri. Prathamesh Shirodker	LDC	9881211999
46.	Smt. Sonia Naik	LDC	8975101221
47.	Smt. Steffi Pires	LDC	9822518207
48.	Shri. Richard Raicar	LDC	9765468413
49.	Kum. Frida Barreto	LDC	7721889747
50.	Smt. Ashwini Gaonkar	LDC	9765848696
51.	Smt. Canira Raicar	LDC	9552981383
52.	Shri. Gaston Silva	LDC	9011124435
53.	Shri. Prabhakar Shetgaonkar	LDC	9423154373
54.	Shri. Florence Rebello	Wireless Operator	8411993438
55.	Shri. Janardhan Naik	Wireless Operator	8007382769
56.	Shri. Shivanand Surlakar	Wireless Operator	8408872613
57.	Shri. Ramesh Gawas	Wireless Operator	9552080099
58.	Shri. Sucorro Dias	Driver	7507626467
59.	Shri. Swapnesh Adel	Driver	9923657475
60.	Shri. Lenin Aguiar	Driver	9823672438
61.	Shri. Satish Gawas	Driver	9420744956
62.	Shri. Govind Zilu Naik	Driver	9881744298
63.	Shri. Subhash Salgaonkar	Driver	9049018315
64.	Shri. Dilesh Pagui	Engine Driver	9823672438
65.	Shri. Keshav Dessai	Engine Driver	9822048383
66.	Shri. Devanand Lone	Fisheries Surveyor	9823679921
67.	Shri. Mahesh N Volvoikar	Fisheries Surveyor	9922598437
68.	Shri. Domingo Fernandes	Fisheries Surveyor	9421246892
69.	Shri. Anand Gaude	Fisheries Surveyor	9673243231
70.	Shri. Kamalakant Gaude	Fisheries Surveyor	9422845037
71.	Shri. Gopal Zuvatkar	Fisheries Surveyor	9923040949
72.	Shri. Harish Prabhu	Fisheries Surveyor	9545225033
73.	Shri. Avinash Arondekar	Fisheries Surveyor	8806753314
74.	Kum. Rajeshri Gaonkar	Fisheries Surveyor	9923850398
75.	Shri. Shyamsundar Mishal	Fisheries Surveyor	7588674297

76.	Shri. Prathamesh Khandeparkar	Fisheries Surveyor	9673272527
77.	Shri. Damodaran Naik	Fisheries Surveyor	9923843930
78.	Shri.Vinayak Pednekar	Fisheries Surveyor	8806474529
79.	Shri.Amogh Mahavarkar	Fisheries Surveyor	9960365724
80.	Smt. Saily Korgaonkar	Fisheries Surveyor	9673257293
81.	Shri. Lavkush Malik	Fisheries Surveyor	9673549177
82.	Shri. Subhash Gaonkar	Fisheries Surveyor	9579302298
83.	Shri. Nikhil Betkikar	Fisheries Surveyor	7038474124
84.	Shri. Vishal Pagi	Fisheries Surveyor	9764682588
85.	Shri. Bablo Kalangutkar	Fisheries Surveyor	9823352145
86.	Shri.Vedanand Shirodkar	Fisheries Surveyor	8308364110
87.	Shri. Ankush Shirodkar	Fisheries Surveyor	7798124462
88.	Shri. Kishen Borcar	Fisheries Surveyor	8411953837
89.	Shri. Kalpesh Gaonkar	Fisheries Surveyor	9764937170
90.	Shri. Mahadev Gaonkar	Fisheries Surveyor	9420158813
91.	Smt. Nishi Naik	Fisheries Surveyor	9860435071
92.	Shri. Anil Naik	Fisheries Surveyor	9823137561
93.	Smt. Seema Dessai	Fisheries Surveyor	9850104424
94.	Kum. Shenia Coutinho	Fisheries Surveyor	9923033457
95.	Shri. Sujay Dessai	Fisheries Surveyor	9665216551
96.	Shri. Krishna Nandkishore Naik Shirodkar	Fisheries Surveyor	7798676067
97.	Shri .Rajesh Nechkankar	Fisheries Surveyor	9765973713
98.	Shri. Nitin Anandache	Fisheries Surveyor	9673601030
99.	Shri. Rohan Morajkar	Fisheries Surveyor	9823880829
100.	Shri. Anand Naik	Fisheries Surveyor	9158345953
101.	Shri. Sameer Velip	Fisheries Surveyor	8390829693
102.	Shri. Parvinder Lone	Fisheries Surveyor	9923478888
103.	Shri. Nitin Sawant.	Fisheries Surveyor	9923348696
104.	Shri. Narayan Naik	Bosun	8275622373
105.	Shri. Ganpat Chari	Net Mending Instructor	9765157218
106.	Shri. Siddesh Kerkar	Mechanical Instructor)	9421248792
107.	Shri. Francisco Victor Dos Milagres De souza	Statistical Assistant	9767807634
108.	Smt. Priya Madkaikar	Statistical Assistant	8329614469
109.	Shri. Nath Bhagat	Statistical Assistant	9762179423
110.	Shri. Shailesh Tari	Investigator	9922537646
111.	Smt. Sanchita Nagvekar	Investigator	9049170956

112.	Shri. Vikas Faldessai	Junior Deckhand	9822882455
113.	Shri. Hari Palyekar	Junior Deckhand	7798104790
114.	Shri. Gopal Naik	Junior Deckhand	9881779052
115.	Shri. Subhash Shetkar	Junior Deckhand	9623325335
116.	Shri. Prajay Parulekar	Junior Deckhand	8421137017
117.	Shri. Anay Halarnkar	Junior Deckhand	9860314936
118.	Shri. Vidhyanand Phadte	Junior Deckhand	0832-2224838
119.	Shri. Indur Kankonkar	Junior Deckhand	9923085532
120.	Shri. Pravin Shirodkar	Junior Deckhand	8888632301
121.	Shri. Shashikant Pagi	Fieldman	9923749464
122.	Shri. Prasanna Pagi	Fieldman	9763741525
123.	Shri. Flavio Fernandes	Fieldman	9822689563
124.	Shri. Shubham Naik	Fieldman	7507641767
125.	Shri. Rahul Tari	Fieldman	9049245236
126.	Shri. Sagar Korkankar	Fieldman	9075941026
127.	Shri. Shubadeen Naik	Fieldman	0832-2224838
128.	Shri. Soccoro Pinto	Fieldman	9921879257
129.	Shri. Siddarth Mishal	Fieldman	9923112651
130.	Shri Filomeno Henry Columbano Carvalho	Helper	9881882360
131.	Shri. Bhiva Gawas	Helper	8805336547
132.	Shri. Chandrakant Narulkar	Helper	9823535646
133.	Shri. Mohan Garudi	Messenger	9226792539
134.	Shri. Bhupal Phadte	Multi Tasking Staff	9881732250
135.	Smt. Shobha Parab	Multi Tasking Staff	9637749551
136.	Smt. Sudha Gaude	Multi Tasking Staff	9764775953
137.	Smt. Gauri Chodankar	Multi Tasking Staff	8390203141
138.	Smt. Niella Fernandes	Multi Tasking Staff	8888184392
139.	Shri. Rajendra Naik	Multi Tasking Staff	9823783647
140.	Smt. Pritam Shirodker	Multi Tasking Staff	9822824456
141.	Shri. Felipe Colaco	Multi Tasking Staff	8380958978
142.	Shri. Norman Soares	Multi Tasking Staff	8308765217
143.	Shri. Gangaram Rathod	Multi Tasking Staff	8550900815
144.	Shri Pradip R. Sardessi	Multi Tasking Staff	
145.	Shri. Ibrahim Saha	Watchman	9822686515
146.	Shri. Vaibhav Tamboskar	Watchman	9823188233
147.	Shri. Sambhaji Sawant	Watchman	9420897288
148.	Shri. Ratnakar Kanolkar	Watchman	9923651057

XI. DIRECTORY OF FISHING SOCIETIES

1.	Cutbona Fisheries Co-operative Society Ltd. P.O. Velim, Cutbona, Salcete-Goa
2.	Mandovi Fishermen Marketing Co-operative Society Ltd. Malim Jetty, Betim, Bardez Goa 403101
3.	South Goa Mechanised Boat Owners Co-op and Marketing Society Ltd. Velim, Salcete-Goa
4.	Vasco Fishing Boat Owners Marketing Co-operative Society Ltd., Behind T.B. Cunha Chawk, Vasco – Goa
5.	Xapora Fishing Boat Owners Fisheries Co-operative Society Ltd., Chapora, Bardez- Goa.Near Chapora jetty, P.O. Vagator, Chapora, Bardez, Goa, 403509
6.	Zuari Fishermen Marketing Co-operative Society Ltd Near Acid Tank, Vasco Fishing jetty, Vasco-da-Gama, Goa,
7.	A.V.C.B. Traditional Fisherman Association 44/A/I Passagem, Assolna, Salcete-Goa 403701
8.	Akhil Goa Kshatriya Pagui Samaj. H.No.6/203, Rajbaga Canacona Goa 403702
9.	All Goa Fisherman's Co-op. Association Ltd. C/o. The Sahauddhar Urban Credit Co-op. Society Ltd., Fernandes Building, Malim, Betim, Bardez Goa.
10.	All Goa Purse-seine Boat Owners Association, AS/5, Mohidin Towers D.B.Road Panaji Ilhas Goa
11.	Baga Sant Khuris Fishermen Association, Calangute, Bardez Goa.
12.	Baina Ramponkar & Fishing Canoe Owner's Society, Katem Baina, Vasco-da-Gama, Goa.
13.	The Cutband Boat/Trawler Owners Association, P.O. Velim, Salcete- Goa
14.	Desterro Fisherman Association, Near Desteirro Church, Vasco-da-Gama, Goa.
15.	Dona Paula Fishermens Association H.No.C-22/48, Antiza Mansion, Dona Paula, Tiswadi Goa.
16.	Goa Fishing Boat Owners Association, Behind T.B. Cunha Chowk, Vasco Fishing Jetty, Vasco-da-Gama , Vasco Goa
17.	Goenche Ramponkarancho Ekvott (GRE) P. O. Cansaulim Goa
18.	Nirvikar Fishing Co-op. Society Ltd. Tembwada, Morjim, Pernem Goa.
19.	Niz Goenche Ramponkarancho Ekvott H.No. 1393/A, S-1, Ground Floor, Menino Jesus Cottage, Mazilvaddo, Benaulim, Salcete

XI. DIRECTORY OF FISHING SOCIETIES

20.	Odxel Fishermen Association Odxel, Taleigao, Tiswadi, North Goa. PO Goa University 403206
21.	Old Cross Fishing Canoe Owners Co-op. Society Ltd. H.No.116, Non-Mon, Dempo bhatt, Vasco-da-Gama Goa.
22.	Ovleshwar Fisherman Association, Firguebhat, Nerul, Bardez Goa.
23.	Shree Ganesh Traditional Fisheries Association Gabitwada, Talpan, Canacona, Goa.
24.	Shree Sateri Fisherman Association, Near Goa University, Cacra, Tiswadi, Goa.
25.	Shree Shantadurga Fisherman Association Near Goa University Cacra Tiswadi Goa
26.	St. Andrews Canoe Owners –Vasco Society H. NO. 257, Behind Tilak Maidan, Khariwada, Vasco-da-Gama, Goa
27.	St. Francis Xavier Canoes Owners Vasco Society, H. No. 134, Non-Mon, Dempo Bhat, Vasco da Gama, Goa
28.	The Canacona Taluka Gabit Fisherman Trawler/Mechanised, Craft Owners Co-op. Society Ltd., Talpona, Sadolsem, Canacona-Goa
29.	The Purse Seiners Boat Owners Cooperative Society Ltd House No. 797, Cutband, Velim, Salcete, Goa. 403723
30.	Traditional Fisherman's Association of North Goa Firangebhat, Nerul, Bardez Goa
31.	Vailankani Saibin Fisherman Association, Dandadi, Nerul, Bardez Goa
32.	Vasco Ramponkarancho –Magkarancho Ekvott, Near Old Cross No.181 Khariwada Vasco-da-Gama Goa
33.	Velsao Fishing Canoe Owners Society, H.No.220, Velsao Dando, Cansaulim.
34.	Pescador Canoe Society Vasco Goa H, No. 15/124(60), Pixem Dongri, Vasco da Gama, Goa. 403802
35.	Kshatriya Maratha Paramparik Macchimar Sanghatana, Rangallim, Velim, Salcete, Goa
36.	Akhil Goa Harkari Sahari Saunstha, Durbhat, Ponda Goa
37.	Siridao Traditional Fishermen Association Siridao Tiswadi Goa
38.	Baina Fishermen Society Katem Baina, Vasco-da-Gama Goa

XII. PHOTO GALLERY

AQUA GOA MEGA FISH FESTIVAL 2020 (PANJIM)

AQUA GOA MEGA FISH FESTIVAL 2020 (PANJIM)








WORLD FISHERIES DAY 2021

Awareness under “ATMANIRBHAR BHARAT” “SWAYAMPURNA GOA”


Programme at Bogmalo

Programme at Khola Panchayat

Programme at Valvoi

Programme at Surla

Awareness Programme

Programme at Surla

Awareness Programme

Programme at St. Estevem

Programme at Xeldem

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Email: dir-fish.goa@nic.in Website: www.fisheries.goa.gov.in