



ANNUAL REPORT

2020-21

DEPARTMENT OF FISHERIES
MINISTRY OF FISHERIES, ANIMAL HUSBANDRY AND DAIRYING
GOVERNMENT OF INDIA



Annual Report

2020-21

Department of Fisheries
Ministry of Fisheries, Animal Husbandry & Dairying
Government of India



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Chapter 1

Department of Fisheries- An Overview

1.1 Vision

To achieve "ecologically healthy, economically viable and socially inclusive fisheries that contributes towards doubling fishers and fish farmers' incomes and economic prosperity in a sustainable, responsible and equitable manner". Fulfilling this vision encompasses building local and national capacities to enhance sustainable fish production, productivity and value addition of fish products through integrated policies, schemes and programs.

1.2 Organisational Structure

Ministry of Fisheries, Animal Husbandry & Dairying comprises of two Departments viz. Department of Fisheries and Department of Animal Husbandry & Dairying. Department of Fisheries was carved out of Fishery Division from the erstwhile Department of Animal Husbandry, Dairying & Fisheries vide Cabinet Secretariat's Notification No.1/21/21/ 2018-Cab dated 5th February, 2019.

The Department is under the charge of Shri Parshottam Rupala, Hon'ble Union Minister of Fisheries, Animal Husbandry & Dairying. He is assisted by two Ministers of State for Fisheries, Animal Husbandry & Dairying namely, Shri Dr. L. Murugan and Dr. Sanjeev Kumar Balyan. The administrative head of the Department is the Secretary, Fisheries.

Secretary Fisheries is assisted by two Joint Secretaries with divisions namely Inland and Marine Fisheries. The organizational structure of the Department is given in **Annexure I**.

1.2.1 Functions

The Department is responsible for matters relating to formulation of policies and schemes

pertaining to Development of Inland, Marine and Coastal Fisheries and Fishery Institutes including its four subordinate institutions and two autonomous bodies.

The Department advises the State Governments/ Union Territories (UTs) in formulation of policies and programmes in the field of fisheries. The main focus of the activities is on:

- a. Expansion of Aquaculture in fresh and brackish water
- b. Conservation and sustainability of marine fisheries resources
- c. Promotion of mariculture, seaweed cultivation, cage culture, RAS, ornamental fisheries, cold water fisheries and fisheries trade
- d. Social security and welfare of fishermen including fisherwomen
- e. Exploitation of deep sea fishery resources
- f. Inland fisheries development
- g. Establishment of the network of aquatic quarantine
- h. Mapping of water bodies through GIS etc.

The Department also undertakes the formulation of policies, strategies, programs and plans on fisheries, to draft related laws, regulations and provisions, and organize their supervision and implementation across the States/UTs.

1.2.2 List of Subjects allocated is as follows:

- a. Industries, the control of which by the Union is declared by Parliament by law to be expedient in Public interest as far as these relate to Development of fish feed and fish products with the limitation that in regard to the development of

industries, the functions of the Department of Fisheries do not go further than the formulation of the demand and fixation of targets

- b. Promotion and development of Fishing and Fisheries (inland, marine and beyond territorial waters) and its associated activities, including infrastructure development, marketing, exports and institutional arrangements etc
- c. Welfare of fishermen and other fisher-folk and strengthening of their livelihoods
- d. Liaison and cooperation with international organizations in matters relating to Fisheries development
- e. Fisheries statistics
- f. Matters relating to loss of fish stock due to natural calamities
- g. Regulation of fish stock importation, Quarantine and Certification
- h. Fishery Survey of India, Mumbai
- i. Legislation with regards to the Prevention of the extension of infectious or contagious diseases or pests affecting fish from one State to another
- j. Legislation with regards to the Pattern of financial assistance to various State Undertakings, Fisheries Development Scheme through State agencies/Co-operative Unions
- k. Preservation, protection and improvement of fish stocks and prevention of diseases thereof, Veterinary training and practice
- l. Insurance of fish stock

1.3 Subordinate Institutions

The details of the four institutes under the Administrative Control of the Department of

Fisheries are given below:

1.3.1 Fishery Survey of India, Mumbai

Fishery Survey of India (FSI) was established in the year 1946 by Government of India, as a pilot project known as Deep Sea Fishing Station (DSFS) with the objective of augmenting food supply through development of deep-sea fishing. As a humble beginning, the Institute started its activities with one vessel named as 'S.T. Meena' -a mine sweeper converted into a trawler. The main objectives of DSFS were charting of fishing grounds and training of deep sea fishing personnel. Realizing the gigantic task of DSFS, Government of India established a number of such stations on both east and west coasts of India. FSI has thus emerged as the nodal fishery institute in India with the primary responsibility of survey and assessment of fishery resources in the Indian Exclusive Economic Zone (EEZ) and adjoining areas for promoting sustainable exploitation and management of the Marine Fishery resources.

FSI currently undertakes survey of deep sea demersal resources, coastal pelagic resources, oceanic tuna resources, habitat management and assessment of risk to habitats, investigations and research on coral reef ecosystems among other activities.

1.3.2 Central Institute of Fisheries Nautical and Engineering Training, Kochi

Central Institute of Fisheries Nautical and Engineering Training (CIFNET) is the only national institute of its kind in the country to impart the training requirements of technical and certified personnel such as Skippers, Mates, Engineers, Engine Drivers of power fishing vessels as stipulated in the M.S. (Amendment) Act 1987. CIFNET is also responsible for developing the required technical manpower for supporting the shore establishments and for effective operation of fishing vessels. The various short-term courses conducted by the Institute covering an integrated multidisciplinary area of Fishing Technology,

Nautical Science and Marine Engineering has benefited personnel working in international institutions and various organizations under the Central/State Government departments, colleges and other Public/Private sector establishments. The Institute is currently focusing on skill development trainings of fishermen in deep sea fishing for oceanic tuna, a responsible fishing practices and teaches about the devastating effects of marine pollution through their course curriculum.

1.3.3 National Institute of Fisheries Post-Harvest Technology & Training, Kochi

The National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT), erstwhile Integrated Fisheries Project, was established to oversee all-round development of Post-Harvest Technologies. NIFPHATT envisages delivery of the best quality fish and fish products through minimal post harvest losses and maximised post harvest fish utilization. Post harvest technology upgradation is achieved through adaptive research to suit the ever increasing and fast changing consumer needs by developing new processes, products and packaging. Dissemination of the upgraded technology is achieved through consultancy, training, popularization of products and consumer response surveys.

1.3.4 Central Institute of Coastal Engineering for Fisheries, Bengaluru

Central Institute of Coastal Engineering for Fisheries (CICEF), Bengaluru was established in January, 1968 as Pre-investment Survey of Fishing Harbours (PISFH) by the Ministry of Agriculture, Government of India in collaboration with Food and Agriculture Organisation of the United Nations (FAO/UN). The primary objective of establishing the Institute was to carry out engineering and economic investigations and prepare techno-economic feasibility reports for the development of fishery harbours at suitable

sites along the Indian coast and to provide fishery harbour facilities to Mechanized Fishing Vessels (MFVs). After the cessation of the FAO/UN assistance, the Institute received technical assistance in the form of equipment and expert consultancy services from Swedish International Development Agency (SIDA) for a period of 2 years starting January 1974. In August 1983, it was renamed as Central Institute of Coastal Engineering for Fishery (CICEF). Technical expertise was further developed in the subsequent years (since August 1983). The Institute is also catering to the requirements of Aquaculture Engineering for development of Coastal Aquaculture Farms along the Indian coast. The Institute received UNDP/FAO assistance in the form of equipment and consultants, from 1986 to 1991, for the development of coastal aquaculture farms. The Institute has thus been playing a pivotal role in assisting the maritime States/UTs in extending the necessary technical support in conducting engineering and economic investigations.

1.4 Autonomous Bodies

The details of the Autonomous Bodies of the Department are given below:

1.4.1 National Fisheries Development Board, Hyderabad

National Fisheries Development Board (NFDB) was set up in September 2006, with its head quarter at Hyderabad to realize the untapped potential of Fisheries sector in Inland and Marine fish capture, culture, processing & marketing of fish, and overall growth of Fisheries sector with the application of modern tools of research & development. It has been instrumental in planning and imparting capacity building trainings amongst beneficiaries, establishing e-trading platforms for market price regularisation, organising outreach activities such as fish festivals to boost consumption and also providing financial assistance.

1.4.2 Coastal Aquaculture Authority, Chennai

The Coastal Aquaculture Authority (CAA) was established under the Coastal Aquaculture Authority Act, 2005 vide Gazette Notification dated 22nd December, 2005. The aims and objectives of the Authority are to regulate 'Coastal Aquaculture' activities in the areas notified by the Central Government as 'coastal areas' and for matters connected therewith or incidental thereto. The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, to register aquaculture farms and hatcheries, inspect them to ascertain their environmental impact, remove or demolish coastal aquaculture farms which cause pollution and fixing standards for coastal aquaculture inputs. Through these controls and measures, CAA aims to facilitate environmentally responsible and socially acceptable coastal aquaculture.

In addition to the above, there is a National Level registered society, namely, National Federation of Fishers' Cooperatives Ltd. (FISHCOPFED), New Delhi.

1.4.3 National Federation of Fishers Cooperatives Ltd.

National Federation of Fishers Cooperatives Ltd. (FISHCOPFED) is a national level federation of fisheries cooperatives and the apex institution of Indian Fisheries Cooperative Movement. It was established in 1980 as All India Federation of Fishermen Cooperatives and was rechristened as National Federation of Fishers Cooperatives Ltd. in 1982.

FISHCOPFED is governed by its own approved bye-laws and through the provisions of Multi-States Cooperative Society (MSCS) Act 2002.

FISHCOPFED aims to serve, develop and uplift the socio economic condition of fishers in the country. It facilitates, coordinates and promotes

fishing industry in India through cooperative efforts.

1.5 Major Initiatives taken towards Enhanced & Sustainable Fish production

Recognizing the potential of the sector, to consolidate the achievements of Blue Revolution and provide focused attention to the sector, the Department of Fisheries is implementing Pradhan Mantri Matsya Sampada Yojana (PMMSY).

The Government of India in May 2020 approved PMMSY with an estimated investment of Rs. 20,050 Crores comprising of Central share of Rs. 9,407 Crores, State share of Rs. 4,880 Crores and beneficiaries contribution of Rs. 5,763 Crores for a period of five years from FY 2020-21 to FY 2024-25. During the current financial year, proposals with a total cost of Rs. 2,881.41 Crores with Central Share of Rs. 1,089.86 Crores were approved of which Rs. 585.68 Crores have already been released to the States/UTs. In the Budget Estimates FY 2020-21, the Department has been allocated total budgetary support of Rs. 825 Crores including allocations for scheme and non-scheme components. The component wise Budget Estimates (BE), Revised Estimates (RE) and Expenditure for FY 2020-21 are indicated in **Annexure-II**.

The scheme intends to address critical gaps in fish production and productivity, infusion of innovation and modern technology, post-harvest infrastructure & management, modernisation and strengthening of value chain, traceability, establishing a robust fisheries management framework and fishers' welfare. Due focus is also being given to creating awareness for harnessing of fisheries potential in a sustainable, responsible, inclusive and equitable manner. Also in order to enhance competitiveness of the Fisheries sector, facilitate economies of scale, generate higher incomes, accelerate growth and expansion of the sector in an organized manner, "Cluster or Area based approach" wherever possible will be

adopted while approving and implementing the beneficiary-oriented components/activities.

The PMMSY scheme intends to double the income of fishers, fish farmers and fish workers by FY 2024-25, enhance fish production to 22 Million Metric Tonnes (MMT) by 2024-25 (up from 13.75 MMT in FY 2018-19) at an average annual growth of about 9 percent (up from 7 percent during FY 2018-19). PMMSY further intends to increase Aquaculture productivity to 5 tonnes per ha (up from national average of 3 tonnes per ha), create critical fisheries infrastructure, reduce post-harvest losses, modernize and strengthen value chain, double export earnings to Rs. 1,00,000 Crores, enhance domestic fish consumption with corresponding health benefits, attract investments in Fisheries sector from other sources (State, private etc.) and generate direct and indirect employment opportunities of about 55 Lakhs in the Fisheries sector from other sources. Some of the 'thrust' areas addressed under the PMMSY scheme are as below:

- a. Mariculture including seaweed cultivation
- b. Ornamental and recreational fisheries
- c. Quality seed
- d. Optimal harvesting of deep sea and oceanic resources
- e. Cold water fisheries
- f. Development of aquaculture by productive utilization of saline/alkaline areas
- g. Integrated development of reservoirs
- h. Species diversification through new candidate etc

With the aim to increase productivity and reduce post-harvest losses, number of sub-activities/components are envisaged under the PMMSY scheme. To this effect, adoption of modern technologies in production and post-harvest management including high-density aquaculture in ponds, Recirculatory Aquaculture System (RAS), biofloc, cage culture, nano-feed,

live feed technology, block chain, value addition, quality preservations and marketing etc. will aim for "more crop per drop".

Provisions are made under the PMMSY scheme for giving assistance for expansion of culture area, focus on diversification of species, catering demand and supply of quality brood and seed of cultivable species and specie - specific feeds. These provisions are directed towards establishment of adequate number of brood banks, hatcheries, seed rearing units, specific pathogen free or resistant seed, genetically improved brood stock, and feed mills.

During FY 2020-21, PMMSY has resulted in the physical achievements in Inland and Marine fisheries, fisheries infrastructure, fisherman welfare, aquatic health management etc. The details of the achievements of the PMMSY till date are indicated in **Annexure –III**.

In order to address the infrastructural requirements for the Fisheries sector, a dedicated fund namely, Fisheries and Aquaculture Infrastructure Development Fund (FIDF) was created in FY 2018-19 with a fund size of Rs 7,522.48 Crores. Under FIDF, concessional finance is provided for development of fisheries infrastructure in the country through interest subvention up to 3 percent per annum. Funding under FIDF is expected to fill large infrastructural gaps in the Fisheries sector. FIDF provides concessional finance/loan to the Eligible Entities (EEs), including State Governments/UTs and State entities for development of identified fisheries infrastructure facilities. Concessional finance under FIDF is provided by the Nodal Lending Entities (NLEs) namely, (i) National Bank for Agriculture and Rural Development (NABARD) (ii) National Cooperatives Development Corporation (NCDC) and (iii) All Scheduled Banks.

In FY 2018-19, the Government of India extended the facility of Kisan Credit Card (KCC) to Fisheries and Animal Husbandry farmers to help them meet their working capital needs. The KCC facility

will help Fisheries and Animal Husbandry farmers to meet their short-term credit requirements of rearing of animals, poultry birds, fish, shrimp, other aquatic organisms and capture of fish. Reserve Bank of India (RBI) vide circular dated 4th February, 2019 issued detailed guidelines for extension of KCC facility to Fisheries and Animal Husbandry farmers. Fishers, Fish Farmers (individual & groups/partners/share croppers/tenant farmers), Self Help Groups (SHG), Joint Liability Groups and women groups are eligible for availing the KCC facilities. The fisheries related working capital components covered under KCC include recurring costs towards seed, feed, organic and inorganic fertilizers, lime/other soil conditioners, harvesting and marketing charges, fuel/electricity charges, labour, lease rent (if leased water area) etc. For capture fisheries, the working capital may include cost of fuel, ice, labour charges, mooring/landing charges, etc. For the farmers already possessing KCC & involved in activities related to Fisheries Credit limit of Rs.3 Lakhs has been fixed. For the new KCC, a credit limit of Rs. 2 Lakhs per annum has been fixed for the fish farmers. To popularize KCC, the Department had sent advisories/requests to all the State Governments/UT administrations requesting them to propagate the KCC facilities and also sensitise the fishers & fish farmers to avail the benefits of the same.

The Department has formulated the draft National Mariculture Policy (NMP) to ensure sustainable farmed seafood production. The overall strategy of NMP is to increase seafood production in sustainable and responsible manner so as to measure socio-economic development with focus on health and nutritional security and environment.

The Department has also drafted the National Fisheries Policy, 2020 by integrating the policies, namely, (i) National Policy on Marine Fisheries, 2017 (ii) Draft National Inland Fisheries and Aquaculture Policy (NIFAP), (iii) Draft National Mariculture Policy along with elements of post

harvest. The National Fisheries Policy, 2020-Sixth draft for consideration has been uploaded on the Department website on 31st December, 2020 and has also been translated in 11 different languages (Hindi, Gujarati, Marathi, Kannada, Malayalam, Tamil, Telugu, Odia, Bengali, Assamese & Urdu) and circulated to States/UTs. The objective of the National Fisheries Policy is to secure the overall development of capture fisheries and aquaculture in the country. While the fishers and fish farmers are at the core of the policy, the intent is to ensure sound management and sustainable development of the resources and associated habitats, alongwith maintaining the ecosystem integrity, meeting the food and nutritional security of the growing population, protecting the rights of the fishing and farming communities, building farmers' resilience, making Indian fish and fish products globally competitive. All the above initiatives thus support India's commitment towards fulfillment of the global agenda on sustainable and wise-use of the fisheries resources in '*Atam Nirbhar Bharat*' spirit.

1.6 Grievances Cell

A Grievances Cell has been set up in the Department to look into grievances of the public. The cell is headed by Joint Secretary (Administration).

1.7 Liaison Officer for Other Backward Castes (OBC), Scheduled Castes (SCs)/ Scheduled Tribes (STs)/ Persons with Disabilities (PWD)

Liaison Officer has been appointed in respect of OBC and SC/ST/PWD category under the Liaison Officer at Headquarters of Department of Fisheries for OBC, SC/ST employees and PWD of this Department including sub-ordinate/field offices. Besides, Liaison Officers have also been appointed for sub-ordinate offices to ensure proper implementation of government policy on reservations in service.

1.8 Vigilance Unit

Vigilance Unit processes vigilance cases pertaining to the Department and its subordinate offices. The Chief Vigilance Officer monitors the vigilance cases on a regular basis. 'Vigilance Awareness Week' was celebrated in the Department from 27th October to 2nd November 2020.

1.9 Progressive use of Hindi

1.9.1 The Department has made concerted efforts during the year for promotion of Hindi in official work. The Hindi section was actively involved in translating various important documents like the briefs for Parliamentary Standing Committee, Annual Report, Output Outcome Framework, Parliament Questions, documents related to Parliamentary Standing Committee, Cabinet notes, as well as in implementing the Official Language Policy of the Government.

1.9.2 An Official Language Implementation Committee is functioning in the Department under the Chairmanship of Joint Secretary (Administration). The progress in use of Hindi in the Department are reviewed in the meetings. Suggestions were given to promote the use of Hindi in official work. As a result of these suggestions, the percentage of correspondence in Hindi has increased considerably.

1.9.3 Circular letters were also issued from time to time to all Officers/Sections emphasizing need for proper implementation of the Official Language Policy of the Government.

1.9.4 All letters received in Hindi were replied in Hindi. Similarly, letters originated from the Department to States located in region "A" and "B" were also sent in Hindi. Provisions of Section

3(3) of the Official Language Act, 1963 were also fully complied with.

1.9.5 Use of official language - Hindi Section has been established in the Department of Fisheries for implementation of the Official Language Policy of the Union Government. Presently, it is under the administrative control of Joint Secretary (Administration). Department of Fisheries continued its efforts to do maximum official work in Hindi for implementation of the Official Language Policy of the Union Government. 'Hindi Pakhwada' was organized in the Department from 14th to 28th September 2020.

1.10 Implementation of Right to Information (RTI) Act, 2005

For the purpose of providing information of public interest, the Department has designated Central Public Information Officers (CPIOs) and Appellate Authorities under the relevant provision of the Right To Information (RTI) Act. Similarly, separate CPIOs and Appellate Authorities under RTI Act have been designated for various subordinate offices and autonomous organizations under the Department. RTI applications received through online RTI Portal and otherwise are forwarded online to the concerned CPIO for speedy disposal.

1.11 Reservation for Scheduled Castes (SCs), Scheduled Tribes (STs), Other Backward Castes (OBCs) and others

Department of Fisheries endeavors for strict implementation of the orders issued by the Government of India from time to time regarding reservation in services for SCs, STs, OBCs, minorities, ex-servicemen and differently abled persons. Presently, there is no dedicated cell in

the Department for implementation of government policy on reservation. However, Liaison Officer has been appointed in the Department to look after the reservation matters related to recruitment as per reservation policy.

1.12 Prevention of Harassment of Women Employees

A committee for prevention of sexual harassment of women at workplace exists in the Department to look into the complaints of sexual harassment of women. No complaint has been received during the year FY 2020-21.

1.13 Minimum Government, Maximum Governance

1.13.1 Initiatives taken by the Department for speedy disposal of grievances have been reflected in the CPGRAM Portal.

1.13.2 Monthly Report on significant development and monitoring of various issues namely, presentation made before Prime Minister, Central State Cooperation, decisions of cabinet and cabinet Committee through e-Samiksha portal is being done regularly.

DOF Gallery 2020-21



Constitution Day Celebration



Hindi Pakhwada



Winners of Hindi Pakhwada

DOF Gallery 2020-21



Vigilance Awareness Week 2020



Swachhta Pakhwada

Chapter 2

Status of Fisheries Sector in India

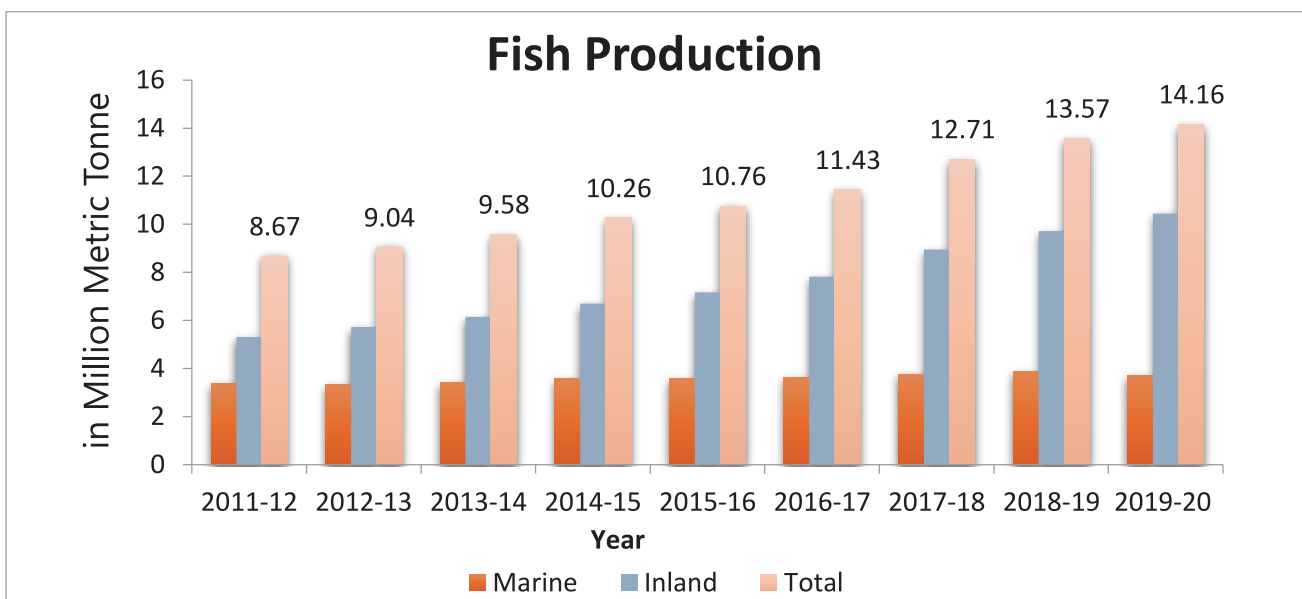
2.1 Indian Fisheries Sector - Current Scenario

Currently, India is the second largest fish producing country in the world and accounts for 7.58 percent of the global production. The total fish production during FY 2019-20 is estimated at 14.16 MMT with a contribution of 10.44 MMT from Inland sector and 3.78 MMT from Marine sector. The Fisheries sector plays an important role in the national economy and also the sector has been one of the major contributors of foreign exchange earning, with India being one of the leading seafood exporting nations in the world. During FY 2019-20, export of marine products stood at 1.29 MMT and valued at Rs. 46,662.85 Crores despite the market uncertainties raised by the Covid-19 pandemic outbreak. As for overseas markets, USA continued to be the major importer of Indian seafood with an import worth USD 2,562.54 Million, accounting for a share of 38.37 percent in terms of dollar value. Frozen shrimp, which earned Rs. 34,152.03 Crores (USD 4,889.12

Million), retained its position as the most significant item in the basket of seafood exports, accounting to 50.58 percent in quantity and 73.21 percent of the total dollar earnings.

In 2018, total fisheries potential of India was estimated at 22.31 MMT consisting of the Marine Fisheries potential at 5.31 MMT and the Inland Fisheries potential at 17 MMT. India is also a major producer of fish through Aquaculture and ranks second in the world after China. Inland fish production constitutes about 74 percent of the total fish production of the country and annual growth rate of production has also been high. The fish production in the country has shown continuous and sustained increment since independence. During 2019-20, 70 percent of Marine Fisheries potential and 61 percent of the Inland Fisheries potential have been harnessed.

The fish production has increased from 5.66 MMT in 2000-01 to 8.67 MMT in 2011-12 and further to 14.16 MMT in 2019-20. The growth in fish production shows an increasing long-term trend as indicated in the graph below.



Within Inland Fisheries, there is a shift from capture fisheries to aquaculture during the last two and a half decades. Freshwater aquaculture with a share of 34 percent in Inland Fisheries in mid 1980 has increased to about 80 percent in recent years.

2.2 Fisheries Sector in India

The history of fisheries in India dates back to the days of the Harappan civilisation. Reference to fish, its trade and fisher community are found in the Songs of the Sangam Age (1st to 4th Century A.D.) The importance and the role of the Fisheries sector was officially recognized in India, through the enactment of the "Indian Fisheries Act" in 1897. This Act laid the foundation of the development of the Fisheries sector in India and delineated the responsibility of the provinces, towards the development and conservation of fisheries in the country. Through this Act, the provinces were empowered to formulate Rules/Laws for the conservation of the fish and fisheries resources.

The First Five Year Plan (1951–1956) of Government of India, with its telescopic outlook drew the canvas of the Fisheries Plan earmarking the priorities for the development of both Marine Fisheries and Inland Fisheries sectors through:

- a. Mechanisation of country craft or introduction of new mechanised boats
- b. Development of fishing harbour facilities
- c. Supply of requisites to fishermen
- d. Development of marketing activities
- e. Provision of ice and cold storage and transport facilities
- f. Introduction of mother ship operations
- g. Provision for off-shore fishing with larger powered vessels such as purse-seiners and trawlers

h. Survey and stocking of new culturable waters

i. Collection of fry

Recognizing the importance of the sector, Department of Fisheries was created in February, 2019 to provide sustained and focused attention towards the development of the sector. This was followed by the creation of an independent Ministry of Fisheries, Animal Husbandry & Dairying in June, 2019.

The main objectives of the Department are to enhance fish production and productivity on an environmentally sustainable and socially equitable basis, tap the hitherto untapped potential of Indian fisheries, conservation of aquatic resources and genetic diversity, preservation of health of ecosystems, strengthening of infrastructure in harvest, post-harvest, value-addition & marketing and upliftment of fishers and aqua-farmers communities with gainful employment opportunities and capacity strengthening.

Fisheries has emerged as a sunrise sector and has been an important sector that provides food, nutrition, employment, income and livelihood in India. Transformation of the Fisheries sector from traditional to commercial scale has led to an increase in fish production from 0.75 MMT in 1950-51 to 14.16 MMT during 2019-20. The sector also provides livelihood to about 16 million fishers and fish farmers at the primary level and several lakhs along the value chain.

As Fisheries is a State Subject, so historically investments in the Fisheries sector, particularly in the fishing villages/coastal fishing villages, fishing harbours and ports for the welfare and support of the fishermen community have been made by the States. However, with the growing requirements for resources, technological transfer/ advice and policy orientation the efforts of State Governments/UT Administrations are supplemented by the Government of India towards the development of the Fisheries sector.

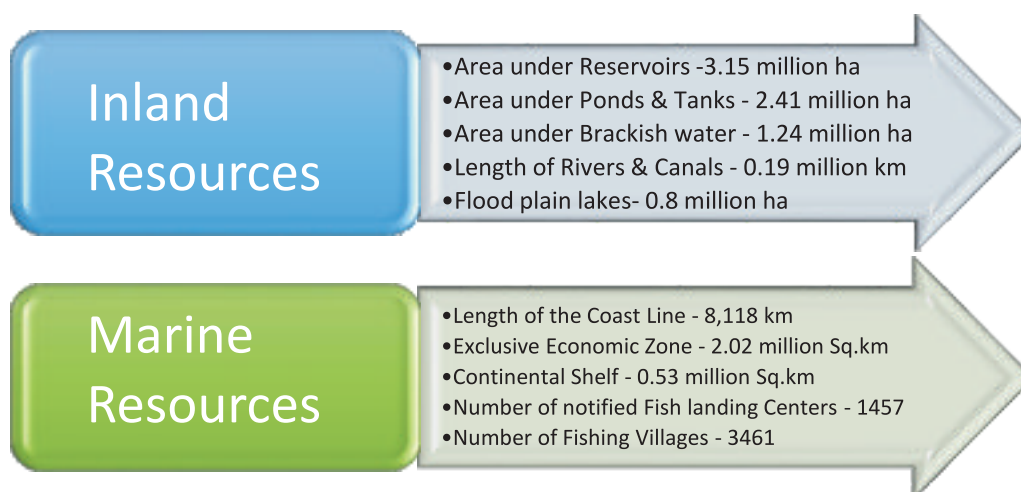
2.3 Fisheries Resources

India has rich and diverse fisheries resources ranging from deep seas to lakes, ponds, rivers and more than 10 percent of the global biodiversity in terms of fish and shellfish species. The Marine Fisheries resources are spread along the country's vast coastline and Exclusive Economic Zone (EEZ) and large continental shelf area. The Inland Fisheries resources are in the form of rivers and canals, floodplain lakes, ponds and tanks, reservoirs, brackish water, saline/alkaline affected areas etc.

The Marine resources of the country comprise an EEZ of 2.02 million sq. km, a continental shelf area of 0.53 million sq. km and a coastline of 8,118 km. The Marine Fisheries potential in the Indian

waters has been estimated at 5.31 MMT constituting about 43.3 percent demersal, 49.5 percent pelagic and 4.3 percent oceanic groups, 1.1 percent island resources and 1.8 percent others.

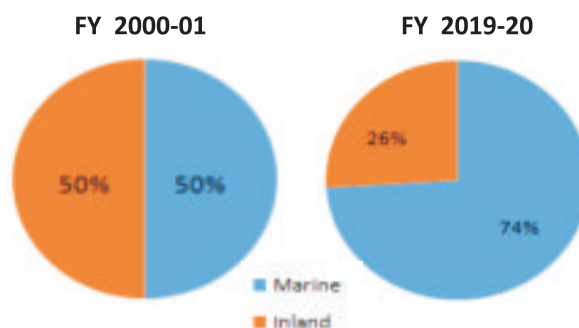
Over the years, mariculture in the country has been confined largely to bivalve mollusks namely, mussels, edible oysters and pearl oysters, and to some extent to seaweeds. With a thrust on development of technologies pertaining to sea cage farming during the last decade, developmental plans with both forward and backward linkages have been envisaged to allow these activities to become significant contributors to production of seafood in the country.



Although, Inland Fisheries have grown in absolute terms, however the rate of growth in terms of its potential has not yet been realised. The vast inland resources comprise of 0.19 million km of rivers and canals, 1.2 million ha floodplain lakes, 2.41 million ha of ponds and tanks and 3.15 million ha of reservoirs.

The trend analysis of Indian Fisheries sector reveals a paradigm shift from Marine dominated fisheries to a scenario where Inland Fisheries have emerged as a major contributor to the overall fish production in the country. As seen in the below chart, Inland Fisheries presently have a share of 74 percent in total fish production of the country.

Inland Fisheries Production



Fisheries and Aquaculture are included in the State List however the Union Government supplements the efforts of the States/UTs for development of the sector. Inland sector is by and

large, fully in the domain of State Governments while Marine sector is a shared responsibility between the Central and Coastal State Governments. Coastal States/UTs are responsible for development, management and regulation of fisheries in the sea waters within the 12 nautical miles (22 km) from the base line. Government of India is responsible for the development and regulation of fisheries in the EEZ waters between 12 and 200 nautical miles (370 km).

Fish Farming requires inputs such as quality seeds, feed, health management and marketing support. Programmes are being undertaken for production and distribution of quality seed and feed for aquaculture, culture-based-capture fisheries, husbandry of farmed species and availability of quality water in order to optimize production and productivity in Inland Fisheries and Aquaculture across the country.

The cold water resources are distributed mainly in the form of upland streams, rivers, lakes and reservoirs that are located at medium to high altitudes of Himalayan corridor such as Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, West Bengal and all North-Eastern States. At present, the total fish production from upland areas constitute about 3 percent of Inland fish production of India which is a very small share to the overall production. Commercial farming of high value cold water species like exotic rainbow trout has been taken up successfully and estimable progress has been made.

Brackish water estuaries or river mouth is another set of water body of fluctuating salinity because of tidal effects. Brackish water bodies have huge potential for both fin fish and shell fish culture. Valuable fish like sea bass, pearl spot and shrimp could be cultured in large quantities. India has 1.24 million ha of brackish water area spread over all maritime States / UTs, but hardly 15 percent of brackish water areas have been developed for commercial farming. Shrimps, oysters, mussels, crabs, lobsters, sea bass, groupers, mullets, milk fish, cobia, silver pompano, pearl spot,

ornamental fishes and sea weeds are being farmed to some extent. The Coastal Aquaculture Authority (CAA) is regulating these activities in brackish water systems within 2 kms of the High Tide Line for sustainable development of coastal aquaculture sector.

Soil salinization is an ecological threat adversely affecting agricultural output and farming community. Inland salinity is increasing at an alarming rate in North India and has abundant unutilized inland saline soil. About 40 percent of inland saline areas (92.33 lakh ha) lies within the states of Haryana, Punjab, Rajasthan and Uttar Pradesh and is not utilized for any agriculture activities. Thus, productive utilization of these soils through aquaculture has been initiated to convert 'waste land into wealth land'. Fish and shrimp farming have already been introduced in saline-affected areas of the four states under Rashtriya Krishi Vikas Yojana (RKVY) and Blue Revolution Scheme. Potential utilization of these vast saline-affected resources through aquaculture is a new sphere for employment generation; it also increases fish production, provides protein rich nutrition, increases export earnings and conversion of waste land to wealth. Shrimp farmers of the four states have accepted and propagated shrimp culture showcasing good productivity. Efforts are also being made for diversification of traditional carp culture to high valued shrimp culture and by value addition to carp culture by introducing new species like *L. vannamei*, sea bass and other candidate fish species for saline Soil/water etc. Hatchery and seed production techniques have so far been standardized for commercial culture of shrimps, crabs and fin fishes.

India is blessed with a rich biodiversity of ornamental fishes; a handful number of biodiversity hotspots are also available. Ornamental fish farming is another important sub-sector of Indian fisheries, which has tremendous scope for development. The demand for ornamental fishes is increasing in a steady phase in India as well as in

the export market. To harness its full potential, development plans will be undertaken to promote ornamental Fisheries in tier II cities of the country, the new production value chains and linkages with emerging markets under PMMSY. Ornamental fisheries is also one of the most promising livelihood improvement enterprise where participation by women plays a huge role. The production enterprises are thus being promoted as a hub & spoke cluster-based model to ensure the sustainable development of the sector.

Seaweed cultivation is one of the potential areas to be explored which is expected to open new avenues especially for women in coastal areas, provide source of income for economically weaker sections of society among rural areas and promote entrepreneurship. With the long coastline and the Exclusive economic zone (EEZ), India has enormous scope for seaweed cultivation and promotion of seaweed-based industries. There are about 844 species of seaweeds reported out of which about 60 species are commercially important ones. Seaweed is rich in minerals, vitamins, trace elements and bioactive substances. It is also being used in

variety of forms such as fresh, dried, powdered, flakes, fertilizer etc. for direct human consumption, medicines, pharmaceuticals, animal feed, biofertilizer, food additives, bio-fuels, bioplastics, cosmetics and textiles. However, efforts need to be put for diversification of seaweed species and promotion of value added products. Additionally, seaweed cultivation has huge socio-economic potential in India, as it can provide promising livelihood opportunity to coastal communities especially womenfolk without displacing them from their habitat, allows flexible working hours and provides great supplementary income.

2.4 Thrust areas and way forward

In order to enhance fish production, there is a need for diversification into other fish production areas like integrated fish farming, cold water fisheries, riverine fisheries, capture fisheries, brackish water fisheries etc. The recent measures therefore have targeted Intensive Aquaculture in ponds and tanks through Integrated Fish Farming, Carp Polyculture, Freshwater Prawn Culture, Running Water Fish Culture and development of riverine fisheries.

- Exclusive Economic Zone (EEZ) of India spreads over 2.02 million sq.km, comprising 0.86 million sq.km on the West coast, 0.56 million sq.km on the East coast and 0.60 million sq.km around the Andaman & Nicobar Islands
- Off late, culture of *Pangassius* and mono-sex Tilapia, native catfishes and freshwater prawns is picking up due to culture based production being adopted at a faster pace
- Three Indian Major Carp (IMC) species – Catla, Rohu and Mrigal together contribute a lion's share in production
- Exotic carps form the next important group in the IMC segment
- In the shrimp segment, most of the production comes from *L. vannamei*
- Rainbow trout culture and rehabilitation of native Mahaseer in cold waters of the Himalayan corridor are promising ventures

Expansion of area under aquaculture has to become an important option to boost fish production. In this context, derelict water bodies could be immensely useful and could be an important resource to boost fish production for meeting the future fish demands of the country. There are about 1.2 million ha of beels and other derelict water bodies in the country. Bringing these water bodies into the ambit of fisheries will tremendously boost fish production and expand fisheries in these water bodies, this is one of the focus areas of the Department for increasing fish production.

The Department recognizes the need for availability of quality seed and feed for sustained growth in inland fish production in the long run. As per an estimate, the total fish seed required for optimal stocking in the existing ponds, new ponds and reservoirs is about 60,000 million fry. As against this, the seed production in 2019-20 is about 52,171 million fry. Thus keeping in view the gap resulting from Inland fish production and other sources of production such as technology infusion through RAS, biofloc, cage culture, pen culture etc., the total estimated gap is about 15,365.38 million fry. Setting up of brood banks and hatcheries across the country is, therefore, a priority area for the Department.

Responsible Aquaculture, prevention and management of aquatic diseases, organic farming, and induced breeding are some of the other challenges to be addressed in this sector for improving productivity.

Modernization of fishing harbour is another thrust area mainly to improve hygienic conditions of the harbour facilities with the objective of enhancing export earnings and also ease congestion. The modernization project envisages improvement of auction halls, construction of a fish packing hall-cum-truck parking area, improvement of the sanitation and water supply facilities, improvement of electrifications and drainage, resurfacing of wharf backup areas, modernization of the existing buildings, construction of a finger jetty, renovation of existing RCC jetties, re-flooring of wharf frontage area, renovation of tower lightening structures, construction of rainwater harvesting system, construction of chilled fish storage facilities and construction of ice plants & cold storage, processing plants, floating dock/sleep way /sleep lift /dry dock, agri- export management etc.

Chapter-3

Major Schemes and Subordinate Institutions of Department of Fisheries

3.1 Pradhan Mantri Matsya Sampada Yojana

To consolidate the achievements of Blue Revolution and provide focused attention to the sector, the Government of India in its Union Budget FY 2019-20 announced a new scheme, the Pradhan Mantri Matsya Sampada Yojana (PMMSY). As the flagship scheme, PMMSY aims to address critical gaps in fish production and productivity, infuse innovation and modern technology, improve post-harvest infrastructure and management, modernise and strengthen value chain and traceability, establish framework for a robust fisheries management and fishers' welfare. Emphasis has been laid towards creating awareness for harnessing of fisheries potential in a sustainable, responsible, inclusive and equitable manner.

PMMSY is being implemented with active cooperation of State Governments/UT Administrations. To make it an implementable plan and a measure of building confidence among the implementing agencies, State Governments/UT Administrations have been involved from the initial stage. The plan has been formulated with the assessment of current status of fisheries activities in all States/UTs. In-depth discussions have been held to arrive at workable mechanisms and streamline the quantum of targets to ensure smooth operations at the time of execution.

3.1.1 Objectives of PMMSY

- a. Harnessing of fisheries potential in a sustainable, responsible, inclusive and equitable manner
- b. Enhancing of fish production and productivity through expansion, intensification, diversification and productive utilization of land and water
- c. Modernizing and strengthening of value chain, post - harvest management and quality improvement

Vision

"Ecologically healthy, economically viable and socially inclusive fisheries sector that contributes towards economic prosperity and well-being of fishers, and fish farmers and other stakeholders, food and nutritional security of the country in a sustainable and responsible manner".

Mission

To induct and promote adoption of technologies in production and post-harvest management including High-density aquaculture in ponds, Re-circulatory Aquaculture System (RAS), Bio-floc, cage culture, live feed technology, Block chain, value addition, quality preservations and marketing etc.

- d. Doubling fishers and fish farmers incomes and generation of employment
- e. Enhancing contribution to Agriculture Gross Value Added (GVA) and exports
- f. Social, physical and economic security for fishers and fish farmers
- g. Robust fisheries management and regulatory framework

3.1.2 Component of PMMSY

PMMSY is an umbrella scheme with two separate Components namely (a) Central Sector Scheme (CS) and (b) Centrally Sponsored Scheme (CSS). The CSS component is further segregated into Non-beneficiary oriented and beneficiary orientated sub-components/ activities under the following three broad heads:

- a. Enhancement of production and productivity
- b. Infrastructure and post-harvest management
- c. Fisheries management and Regulatory framework

PMMSY has been approved at a total estimated investment of Rs. 20,050 Crores comprising of Central share of Rs. 9,407 Crores, State share of Rs 4,880 Crores and Beneficiaries contribution of Rs. 5,763 Crores.

3.1.2.1 Central Sector Scheme

The entire project/unit cost under Central Sector Scheme of PMMSY will be borne by the Central government (i.e. 100 percent central funding) and wherever direct beneficiary oriented i.e. individual/group activities are undertaken by the entities of Central Government including National Fisheries Development Board (NFDB), the Central assistance will be up to 40 percent of the unit/project cost for General category and 60 percent for SC/ST/ Women category. It envisages investment of Rs. 1,720 Crores for a period of 5(five) years from FY 2020-21 to FY 2024-25.

The different components/activities included under Central Sector Scheme are:

- a. Genetic improvement programmes and Nucleus Breeding Centers (NBCs)
- b. Innovations and innovative projects/ activities, technology demonstration including startups, incubators and pilot projects
- c. Training, awareness, exposure and capacity building
- d. Aquatic quarantine facilities
- e. Modernization of fishing harbours of central government and its entities
- f. Support to NFDB, Fisheries Institutions and Regulatory Authorities of Department of Fisheries, Government of India and need based assistance to State Fisheries Development Boards
- g. Support for survey and training vessels for Fisheries institutes including dredger TSD Sindhuraj owned by the Government
- h. Disease monitoring and surveillance network
- i. Fish data collection, fishers' survey and strengthening of fisheries database
- j. Support to security agencies to ensure safety and security of marine fishermen at sea
- k. Fish Farmers Producer Organizations/ Companies (FFPOs/Cs)
- l. Certification, accreditation, traceability and labeling
- m. Administrative expenses for implementation of PMMSY (to meet expenses of both CSS and components)

3.1.2.2 Centrally Sponsored Scheme

The Centrally Sponsored Scheme (CSS) Component of PMMSY is further segregated into non-beneficiary oriented and beneficiary orientated sub-components. It envisages

investment of Rs. 18,330 Crores for a period of 5(five) years from FY 2020-21 to FY 2024-25. The different broad components/ activities included under Centrally Sponsored Scheme are as below:



3.1.3 Funding Patterns of Centrally Sponsored Component

For the beneficiary orientated i.e. individual/group activities sub-components/activities under CSS component to be implemented by the States/UTs, the Government financial assistance for both Centre and States/UTs together will be limited to 40 percent of the project/unit cost for General category and 60 percent of the project/unit cost for SC/ST/Women. The Government financial assistance will in turn be shared between Centre and States/UTs in the following ratio:

- North Eastern & the Himalayan States: 90 percent Central share and 10 percent State share
- Other States: 60 percent Central share and 40 percent State share
- Union Territories (with legislature and without legislature): 100 percent Central share (No UT Share)

For the Non-beneficiary orientated sub-components/activities under CSS component to be implemented by the States/UTs, the entire project/unit cost will be shared between Centre and State/UTs as detailed below:

- North Eastern & Himalayan States: 90 percent Central share and 10 percent State share
- Other States: 60 percent Central share and 40 percent State share
- Union Territories (with legislature and without legislature): 100 percent Central share

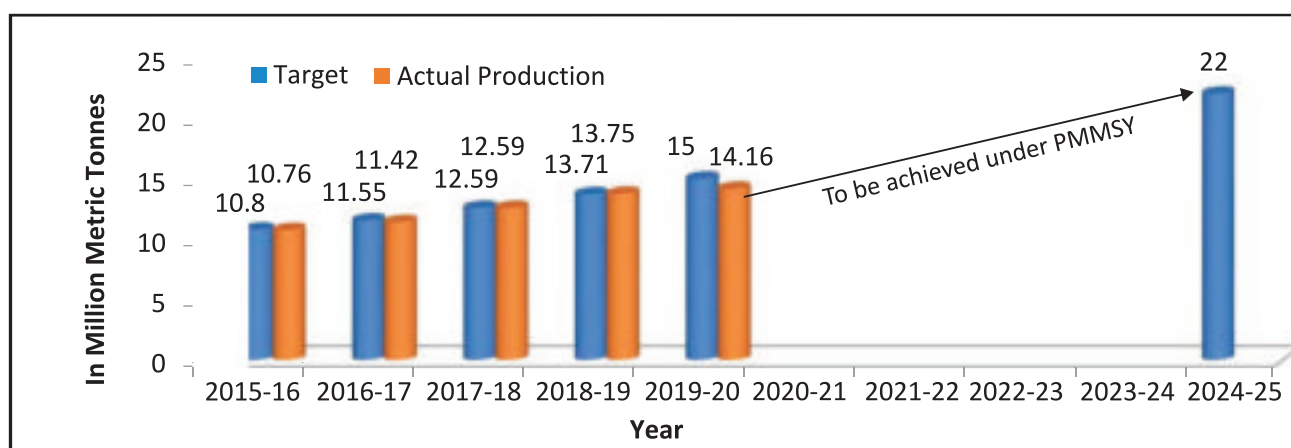
The sharing funding pattern regarding "Livelihood and nutritional support for socio economically backward, active traditional fishers families for conservation of fisheries resources during fish ban/lean period" under PMMSY is summarized as below:

States/UTs	Funding pattern	Contribution
(i)	(ii)	(iii)
General States	50:50 Centre and General States	Centre share Rs. 1500 + State share Rs. 1500 + Beneficiary share Rs. 1500 = Rs. 4500/-year
North East and Himalayan States	80:20 Centre and NE & Himalayan States	Centre share Rs. 2400 + State share Rs. 600 + Beneficiary share Rs. 1500 = Rs. 4500/- year
Union Territories	100% as Centre share for UTs (with legislature and without legislature)	Centre share Rs. 3000 + Beneficiary share Rs.1500 = Rs. 4500/- year

3.1.4 Outcomes of PMMSY

PMMSY targeted a growth rate of about 9 percent annually on a sustainable basis over a period of five years (2020-25). It is possible to be achieve the target if production is targeted at 22 MMT by end of 2024-25. The ambitious scheme will result in doubling export earnings to Rs. 1,00,000 Crores

and generate direct and indirect employment opportunities of about 55 Lakhs in the Fisheries sector over a period of five years. PMMSY further intends to increase aquaculture productivity to 5 tonnes per ha, enhance domestic fish consumption and attract investments in fisheries sector from other sources. Insurance coverage for fishing vessels is being introduced for the first



time under PMMSY. The fish production (actual and target) from 2015-2019 and as per PMMSY target are given in the graph above.

3.1.5 Strategies to unlock prospects

The programs and strategies for fisheries and aquaculture development in the country under PMMSY have been developed keeping in view the objectives identified for the sector. Greater emphasis is on 'Cluster Based Approach' wherever feasible, with suitable backward and forward linkages with an equally strong focus on management and conservation of the resources as envisaged under the scheme.

3.1.6 Integrated approach for fisheries development

Integration of various production-oriented activities such as: (i) Production of quality fish seeds (ii) Cost effective feed (iii) Availability of feasible technology (iv) Post harvest facilities and processing (v) Marketing facilities in close vicinity where commercial aquaculture is undertaken would enhance fish production. 'Cluster Based Approach' will be undertaking wherever feasible by forming groups among entrepreneurs and progressive fish farmers will be encouraged to adopt Good Aquaculture Practice (GAP) in hatcheries and farming.

- Pond Aquaculture:** The smaller water bodies in the form of ponds and tanks with a water spread area of up to 5 ha are aimed for semi-intensive to intensive freshwater aquaculture.
- Culture based fisheries in wetlands and reservoirs:** This incorporates supplementary stocking of fingerlings of carps and other relevant species, scientific fisheries management practices, developing adequate rearing space for ex-situ fingerling production and in-situ seed production in floating cages and pens.
- Fish seed production:** Quality fish seed is a prime requirement for developing aquaculture and culture-based fisheries. A national freshwater fish brood bank is established by NFDB for production of good quality brooders of known varieties with the assistance of Central Institute for Freshwater Aquaculture (CIFA) & National Bureau of Fish Genetic Resources (NBFGR). Other issues to be considered for strengthening seed production sector are establishment of brood banks in each state and up-gradation of hatcheries for maintaining and holding the brood stock as well as seed. In-situ/ex-situ production of seed for stocking in reservoirs and

other open waters. Technology transfer for breeding of commercially important fishes, especially those species holding market value including Mariculture is also to be addressed.

d. **Promotion of feed based aquaculture:**

Development of fish feed mills and scaling up of production from the existing feed mills is envisaged besides popularization of extruded feed based aquaculture to achieve better productivity.

e. **Diversification of culture species:**

Freshwater aquaculture in India is carp-centric hence introduction of exotic and other diversified species that can contribute to increase in fish production, without any adverse impact on the native species and the ecosystem shall be promoted.

f. **Additional infrastructure for SPF shrimp seed:**

Indian shrimp sector is dependent on culture of one shrimp species namely *L. Vannamei*. Being an exotic species and the absence of any Nucleus Breeding Center (NBC) in India has made the shrimp hatcheries completely dependent upon the overseas suppliers that are approved by CAA. The hatchery operators frequently import the broodstock to cater to the needs of the sector. To fill this gap, in 2015, the Government of India decided to allow establishment and operation of SPF Shrimp Broodstock Multiplication Centers (BMC) and brought in guidelines for the same. So far, four Specific Pathogen Free (SPF) shrimp BMCs have been approved, of which two are operational and remaining two will be operational soon. Although establishment of BMCs will

reduce the frequency of importing the broodstock, it may not completely address the quantum requirement of shrimp seed in the country. Therefore, there is a need to establish SPF shrimp NBCs within the country either by private players or may be by the support of the Government. Recently, Government of India has considered to allow establishment of NBCs in private sector and has also envisaged to bring more private parties (including the overseas suppliers) to establish more BMCs in the country.

g. **Livelihood and nutritional support:**

The Department every year imposes a uniform ban on fishing by all fishing vessels in the Indian Exclusive Economic Zone (EEZ) beyond territorial waters on the East and West Coasts for sea safety reasons and also for conservation and effective management of fishery resources. The fishing ban period is implemented on the West Coast from 1st June to 31st July and on the East Coast from 15th April to 14th June. Besides, three months ban is also imposed on fishing in rivers, reservoirs from June to August. Through this sub-component, socio economically backward, active traditional fishers' families are supported during fish ban/lean period. Further, an amount of Rs.1500/- each is contributed by the Government of India and concerned State Government and fishermen. The total accumulated amount of Rs.4500/- is provided to the enrolled fishers during the three-month fishing ban period at a rate of Rs.1500/- per month. In case of North Eastern states, Government of India contributes 80% of

the Government's contribution ie. Rs.2400/- and in case of UTs the Government of India's contributes 100% i.e. Rs.3000/.

- h. Areas which require policy level interventions for enhancing fish production and productivity for convergence with related schemes such as Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA), Rashtriya Krishi Vikas Yojana (RKVY), Sagarmala etc.

3.1.7 Major Achievements in FY 2020-21 (as on 31st March 2021)

- a. Central assistance of Rs. 1,089.80 Crores released for Fisheries sector
- b. Assistance provided for bringing 6,462.55 ha area under Inland Aquaculture
- c. 1,533 Nos of Recirculatory Aquaculture Systems (RAS) and 1,033 Nos of Biofloc approved
- d. Approved installation of 4,292 Nos cages and 72.7 ha pens in reservoirs and other open water bodies
- e. Approved establishment of 166 Nos of fish/prawn hatcheries
- f. Approved 122 Deep Sea Fishing Vessels and 267 up gradation of existing fishing vessels
- g. Constructed 2,755 Bio-toilets in mechanized fishing vessels
- h. 1,956 Nos replacement boats and nets for fishermen
- i. Livelihood and nutritional support for 1,34,733, fishers' families for conservation of fisheries resources during fishing ban/lean period
- j. 31 nos Matsya Seva Kendra for extension and support services

- k. Approved 393 ha of pond area approved under Saline-alkaline culture

- l. Approved 9 Nos Brood-bank facilities

3.1.8 Visit by Hon'ble Minister

a. Visit to Tamil Nadu

The Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying visited Tamil Nadu from 20th to 23rd January 2021. He was accompanied by Secretary, Department of Fisheries, Joint Secretary (MF) and other officials. Hon'ble Minister laid the foundation stone for establishment of Aquatic Animal Quarantine unit and Disease Diagnostic Laboratory at Padappai Village of Kancheepuram District in the presence of Shri D. Jayakumar, Hon'ble Minister of Fisheries & Personnel and Administrative Reforms, Government of Tamil Nadu. The laboratory units are envisaged with quarantine facility, disease diagnostic laboratory, disinfection unit, RAS unit, temperature controlling system, water disposal system etc. It is also expected to augment ornamental fisheries culture and trade in India in the future.

The delegation visited the Aquatic Quarantine Facility at Neelankarai and a shrimp hatchery were also visited. Discussions were held with key stakeholders on tourism development, training of youth from coastal villages, sourcing of fish by local fishermen by resorts and hotels, formation of FFPOs etc. The delegation visited Central Institute of Brackish water Aquaculture (CIBA) at Muttu Kadu, Chennai fishing harbour, seaweed processing plant in Madhurai, Kunthu fish landing center and launched the seed development project (seaweed) at CSIR – Central Salt & Marine Chemical Research Institute – Marine Algal Research Institute (CSMCRI) Mandapam. Towards the end of the visit, the delegation visited the sea cages farming sites in Gulf of Mannar,

interacted with the farmers and marine ornamental fish seed rearing SHGs and distributed cobia fingerlings to the beneficiaries of NFDB funded projects.

Visit to Hon'ble Union Minister to Tamil Nadu



b. Visit to Goa

Hon'ble Union Minister, Ministry of Fisheries, Animal Husbandry and Dairying visited Goa from 5th to 7th February, 2021. A series of meetings were held with Directors of Central Government Institutions (CSIR-NIO, ICAR-CCARI, MoES-NCPOR, DoF-GoI-FSI), senior officers of the State Government Departments of Fisheries and other stakeholders. It was announced that an investment of about Rs.400 Crore may be made under PMMSY and other schemes to support holistic development of Fisheries sector in Goa and making 'Aatmanirbhar Goa'. It was also announced that Goa may be developed as a leading 'Fisheries Hub' with collaborative efforts of the Union and State Governments and active participation of research Institutes, other stakeholders, especially fishers and fish farmers.

Visit to Hon'ble Union Minister to Goa





3.2 Fisheries and Aquaculture Infrastructure Development Fund

To address the gaps in fisheries infrastructure, the government has created the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) during FY 2018-19 with a total fund size of Rs. 7,522.48 Crores. FIDF provides concessional finance / loan to the Eligible Entities (EEs), including State Governments/UT Administrations and State entities for development of identified fisheries infrastructure facilities. The concessional finance under FIDF is provided by the Nodal Loaning Entities (NLEs) namely.

- a. National Bank for Agriculture and Rural Development (NABARD)
- b. National Cooperatives Development Corporation (NCDC)
- c. All scheduled Banks

Till date a total outlay of Rs. 3,645 Crores has been approved for 13 State/UTs under FIDF Project proposals.

3.3 Kisan Credit Card (KCC) to Animal Husbandry farmers and Fisheries

In the Budget Announcement FY 2018-19, Government announced extension of facilities of Kisan Credit Card (KCC) to the Animal Husbandry and Fisheries farmers with a purpose to help them for meeting their working capital requirements.

The guidelines for extension of KCC facility to the Animal Husbandry farmers and Fisheries has been issued by the Reserve Bank of India (RBI) vide their letter dated 4th February, 2019. Fishers, Fish Farmers (Individual & groups/ partners / share croppers / tenant farmers), Self Help Groups, Joint Liability Groups and Woman groups are eligible for availing the KCC facilities.

The Fisheries related working capital components covered under KCC include recurring costs towards seed, feed, organic and inorganic fertilizers, lime/other soil conditioners, harvesting and marketing charges, fuel / electricity charges, labour, lease rent (if leased water area) etc. For capture fisheries, the working capital may include cost of fuel, ice, labouring charges, mooring/landing charges etc.

Credit limit of Rs. 3 Lakhs for the farmers already possessing KCC and involved in activities related to Animal Husbandry and Fisheries has been fixed. For the new KCC holders (farmers) of Animal Husbandry and Fisheries credit limit of Rs. 2 Lakhs per annum has been fixed.

All the State Governments/UT Administrations have been requested to take necessary action to propagate the KCC facilities and also sensitize the fishers & fish farmers to avail the benefits of the same. As of 31st March 2021, a total of 59,538 KCCs have been issued and additional 4.04 Lakh applications from fishers and fish farmers are with banks at various stages of issuance.

3.4 Important Programmes Organised at Department of Fisheries

3.4.1 Swachhta Hi Sewa

The Department conducted Swachhta Hi Sewa, campaign from the period 16th December, 2020 to 30th December, 2020 to carry out recording and weeding out of office file, cleaning of office premises, cleaning of guest house and residential complex, pada yatra and creation of awareness on Swachhta in the neighbourhood of the offices, celebration of Swachh Bharat Diwas etc.

3.4.2 Rashtriya Ekta Diwas/National Unity Day

The Department organised Rashtriya Ekta Diwas on 31st October with a view to observe Rashtriya Ekta and all officers and staff participated and pledged for re-affirming the inherent strength and resilience of the people to withstand threats to the security, unity and integrity of the country.

3.4.3 Constitution Day

The Department organised Constitution Day on 26th November 2020 and all officers and staff read the preamble to commemorate the adoption of the Constitution on 26th November, 1949 and resolved to uphold the ideals enshrined in Preamble of the Constitution of India.

3.4.4 Vigilance Awareness Week - 27th October to 2nd November, 2020

Vigilance awareness week was organised in the Department from 27th October to 2nd November, 2020 with the theme "Satark Bharat, Samriddh Bharat: Quiz competition was organised in the Department and winners were given cash prizes.

3.5 National Fisheries Development Board

3.5.1 History of NFDB

National Fisheries Development Board (NFDB) was established in 2006 as an autonomous organization under the administrative control of Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India to realize the untapped potential of fisheries sector in inland and marine, fish culture, capture, processing & marketing of fish, and accelerate the overall growth of fisheries sector with the application of modern tools of research & development. Since inception, NFDB has taken up numerous developmental activities which have improved the fish production, productivity and post-harvest & marketing facilities in the sector.

In the changed scenario, NFDB has been entrusted the work of appraisal of proposals received from the States/UTs the component of Centrally Sponsored Schemes (CSS) of PMMSY. NFDB has been designated as nodal agency for implementation of Insurance schemes, Entrepreneur development Models for Central Sector activities, River Ranching, Certification & Traceability, awareness & publicity campaign on PMMSY, empanelment of equipment manufactures & suppliers, Empanelment of Consultancy services, setting up of PMC and any other activities entrusted from time to time by the Department. It is also selected as one of the nodal agencies for implementation of Entrepreneur Development Models, FFPOs and any other activities entrusted from time to time. As per the provisions of PMMSY, a Project Appraisal Committee (PAC) and Project Monitoring Unit (PMU) headed by Chief Executive have been

constituted in NFDB for appraisal of the project proposals received under the CSS component and monitoring of the projects/activities of PMMSY respectively.

3.5.2 Mandate of NFDB

- a. To bring major activities relating to Fisheries and Aquaculture under focused attention and professional management
- b. To coordinate activities pertaining to fisheries undertaken by different Ministries/ Departments in the Central Government and also coordinate with the State/Union Territory Governments
- c. To improve production, processing, storage, transport and marketing of the products of capture and culture fisheries
- d. To achieve sustainable management and conservation of natural aquatic resources including the fish stocks
- e. To apply modern tools of research and development including biotechnology for optimizing production and productivity from fisheries
- f. To provide modern infrastructure mechanisms for fisheries and ensure their effective management and optimum utilization

- g. To generate substantial employment
- h. To train and empower women in the fisheries sector
- i. To enhance contribution of fish towards food and nutritional security.

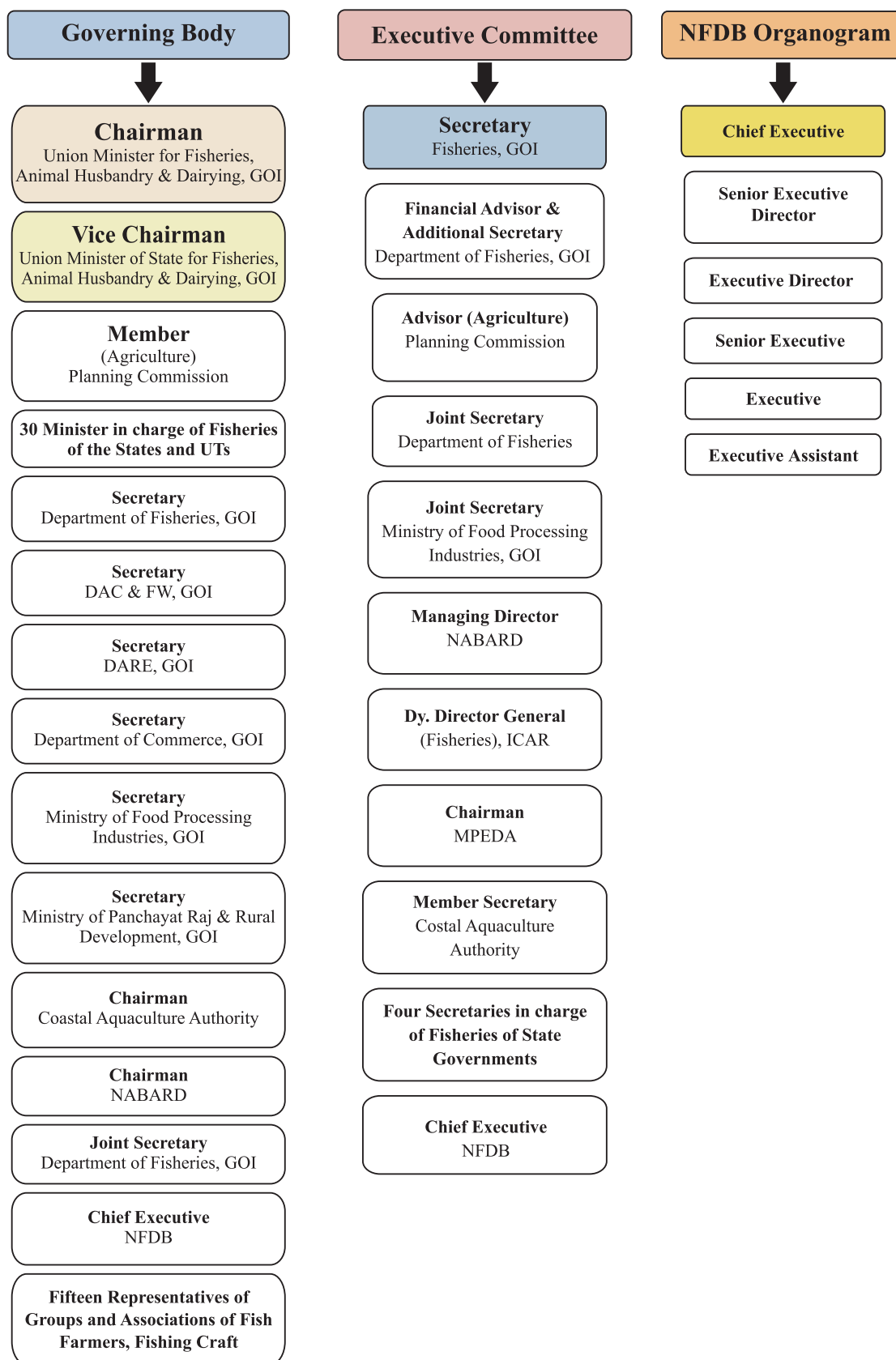
3.5.3 Mission

NFDB operates with the mission of holistic development of the fisheries sector through enhancement of fish production and productivity; to supplement nutritious protein for the growing population; to accelerate the overall economy of the country, besides improving health, economy, exports, employment and tourism in the country.

3.5.4 Organisational Structure

NFDB is headed by the Chief Executive of the organisation. The activities of NFDB are overseen by a Governing Body under the Chairmanship of the Cabinet Minister. The Governing Body and the Executive Committee consider and decide the activities of the Board and provide periodic guidance. The Executive Committee, with the Secretary in charge of Department of Fisheries as its Chairman, provides the general superintendence, direction and the control of the affairs and functions of the Board.

ORGANISATIONAL STRUCTURE OF NFDB



3.5.5 Major Initiatives & Achievements of NFDB (FY 2020-21)

NFDB has received proposals from various States and UTs under the component of the Centrally Sponsored Scheme of PMMSY. NFDB has provided necessary handholding and advisory to States/UTs wherever required in preparation and submission of proposals. NFDB as per Annual Action Plan 2020-21 is undertaking various need based activities under Central Sector component of PMMSY and also activities entrusted by the Department from time to time. The details of projects/activities undertaken by NFDB during 2020-21 are given below:

A. Evaluation of PMMSY proposals:

NFDB has received PMMSY proposals from 34 States/UTs. A total of 893 Self Contained Proposals (SCPs)/ Detailed Project Reports (DPR) were received and scrutinised by NFDB. A total of 11 meetings of Project Appraisal Committee (PAC) under the Chairmanship of Chief Executive, NFDB have been organised until 31st March, 2021 and recommended 791 projects under Centrally Sponsored Scheme component to the Department for a total outlay of Rs.4108.69 Crores with Central share of Rs.1626.27 Crores.

B. New Projects/Activities Sanctioned:

During 2020-21 NFDB has taken up various initiatives to popularize new and innovative technologies emerging in the field so as to improve fish production & productivity in the country. The details of the projects /activities sanctioned are given below:

I. Recirculatory Aquaculture System for nursery rearing of marine finfish: Development and Demonstration by CMFRI

NFDB has accorded sanction to the CMFRI project titled "Recirculatory Aquaculture System for nursery rearing of marine finfish: Development and Demonstration" at a total cost of Rs. 49.94 Lakhs for a period of 2 years (2020-21 to 2021-22) with 100 percent Central financial assistance. An

amount of Rs. 25.12 Lakhs has been released as first instalment. The project aims to assess technical performance of Marine Fin Fish through the nursery phases by optimizing the stocking size and density, feeding protocols and ambient water parameters for culture and determining the best duration of culture and the size of harvest. It also aims to evaluate the economic performance of nursery rearing with detailed financial indicators and develop the best possible production strategy. The developed technology on nursery rearing of Indian pompano and Orange spotted grouper in RAS will be transferred to entrepreneurs.

II. Establishment of Medium size Recirculatory Aquaculture System at College of Fisheries, CAU, Lembucherra

NFDB has accorded sanction to the College of Fisheries, CAU, Lembucherra project titled "Establishment of Medium size Recirculatory Aquaculture System (RAS)" at a total project cost of Rs. 50 Lakhs for one year (2020-21) with 100 percent central assistance. An amount of Rs.25 Lakhs has been released as first instalment. The project aims to establish RAS and start Commercial scale fish production through Experimental Learning Programme (ELP) to sustain the system. In addition, it aims to develop/refine technology for high value indigenous species such as Pabda and Pengba for diversification of cultured species for RAS.

III. Cage Culture Demonstration of Indian pompano (*Trachinotus mookalee*) in Chandipur coast, Bahabalpur, Odisha by CMFRI

NFDB has accorded sanction to the CMFRI project titled "Cage Culture Demonstration of Indian pompano (*Trachinotus mookalee*) in Chandipur coast" at a cost of Rs. 257.327 Lakhs for a period of 3 years (2020-21 to 2022-23) with 100 percent Central financial assistance. An amount of Rs.9.27 Lakhs has been released as first instalment. The project aims to install 30 units of Sea Cages for establishing a model Indian Pompano marine

Cage Farming unit along the Chandipur coast of north Odisha. It would act as a nuclear centre for large scale dissemination of the technology within the State.

The project was launched on 10th January, 2021 by Shri Pratap Chandra Sarangi, Hon'ble Minister of State for Fisheries, Animal Husbandry & Dairying at Bahabalpur, Balsaore District.



IV. Capacity Building & Outreach activities:

To create awareness on Cold Water Fisheries, Pearl Culture, PMMSY and FIDF Schemes, NFDB has organized 15 Physical programmes/ Webinars/ Online Sessions in collaboration with the various Institutes/ Organizations.

In total about 1016 programmes/events have been organized such as awareness programmes and trainings for farmers, entrepreneurs, fishers,

fisheries extension functionaries and other stakeholders on PMMSY in addition to the support provided for fish food festivals and expos. During FY-2020-21, the outreach activities covered 7,40,035 stakeholders in collaboration with Central Institutes, ICAR institutes, fisheries organizations, State Fisheries Departments, KVKs and other relevant organizations.

NFDB released a sum of Rs. 34.0 lakhs to 8 states/institutes for conducting 32 stakeholder consultations for creating awareness and publicising PMMSY scheme amongst 6,800 farmers from 4 states namely Tamil Nadu, Gujarat, Assam and West Bengal along with 1 UT Puducherry.

Post World Fisheries Day, the outreach programme has been successful in covering 60,061 farmers by conducting 322 awareness programmes, 43,185 farmers through 35 webinars, and 1,48,355 farmers through Mass and Print Media. Additionally, about 66,500 pamphlets were distributed as part of the awareness campaign.

186 enumerators were given virtual training on the procedural aspects of the FMPIS app for entering the fish price data. Participants were from the states of Assam, Manipur, Mizoram, Meghalaya, Nagaland, Tripura, Karnataka, Tamil Nadu, Puducherry and Andhra Pradesh.

Outdoor media campaigns on PMMSY were done through installation of 423 hoardings in 2 phases in Bihar, Gujarat, Karnataka, Orissa, Telangana, Goa, Andhra Pradesh, Chhattisgarh, Jharkhand, Madhya Pradesh, Rajasthan and Uttar Pradesh toward which NFDB released a total sum of Rs. 38.76 lakhs to Bureau of Outreach & Communication, Campaign Division, New Delhi. Further, to promote PMMSY scheme through digital platforms, NFDB has released Rs. 1.07 lakh to Way2News Pvt. Ltd. to post the advertisement on PMMSY in their app platform in the states of Andhra Pradesh and Telangana for a wider outreach coverage.

Fish Festivals:

NFDB has sanctioned an amount of Rs. 5 Lakhs each for Tamil Nadu and Sikkim for conducting fish festivals or creating awareness and enhancing domestic fish consumption.

V. Setting Up of Aquatic Animal Health Laboratory at College of Fisheries, Dholi

NFDB has accorded sanction to the proposal of RPCAU for setting up of Aquatic Animal Health Laboratory at College of Fisheries, Dholi at total cost of Rs.120 Lakh and released first instalment of Rs.60 Lakh. The project aims to focus on service to the fishers/ aquapreneurs/hatchery owners/fish farmers/other stakeholders with water quality test, seed quality test, definitive diagnosis in case of any disease outbreak, training of manpower, advance research etc. Also to use the developed facilities for generating skilled human resources in the field of Aquatic Animal Health. The project is at its initial stage

VI. River Ranching

In order to address the depleted fish stock in rivers and improve the livelihood of fishers, River Ranching scheme has been incorporated under PMMSY on a pilot basis. The scheme shall be implemented in three river basins namely (i) Ganges and its tributaries of Ganges river system, (ii) Brahmaputra and Barak river distributaries and other rivers and (iii) Mahanadi and tributaries of Mahanadi river system, covering 8 states. Under this scheme, NFDB has sanctioned projects to a tune of Rs.281.50 Lakh and released a sum of Rs.140.75 Lakh, targeted to ranch 82.13 Lakh fingerlings in 6 states namely Bihar, Uttar Pradesh, Odisha, Chattisgarh, Tripura and Uttarakhand.

VII. Establishment of Breeding Units (Large/Small) of locally important indigenous fish species in North Eastern States

The North East Region (NER) is considered as one of the major hot spot in terms of indigenous fish biodiversity which are distributed in almost all the natural resources. Due to habitat degradation, fishing pressure, pollution and other man made activities, the stock of these precious resources is

declining very fast. Species like Magur, Singhi, Pabda and Koi have got special consumer preference and fetch high market price in the region due to its medicinal properties and special taste. However, the commercial breeding and propagation, culture expansion of these species still remains low due to lack of adequate nos. of hatchery infrastructure for local fish seed production, lack of dissemination of breeding technique among the farmers and other necessary support. In recent years, these species are emerging as prime species in biofloc and RAS based aquaculture system in the region. In view of the above, NFDB has formulated the scheme on "Establishment of the breeding units of locally important indigenous fish species (Large Unit for Magur, Singhi and Small Unit for Pabda, Koi) under PMMSY and invited proposals from NER States. Four States namely Nagaland, Tripura, Manipur and Assam have submitted proposals. Based on the eligibility, NFDB has sanctioned and released a sum of Rs. 49.80 Lakh for establishment of 12 large units and 6 small breeding units in these states.

C. Ongoing Projects

During FY 2020-21, NFDB released funds to various agencies with respect to ongoing committed projects. The details of the funds released for various projects/ activities are given below:

I. Seaweed Cultivation

Seaweed cultivation is one of the priority areas under PMMSY. NFDB has released a sum of Rs. 9.27 Lakhs to Central Salt and Marine Chemicals Institute (CSMCRI) for implementation of the project entitled 'Mass production of spores: An approach to vigorous seed development for commercial farming of *Gracilaria* species' of CSMCRI, Mandapam. The project was completed in September, 2020. NFDB has also released a sum of Rs. 52.08 Lakhs as 2nd & 3rd instalments to CSMCRI for implementation of the project entitled "Mass seedling production of *Kappaphycus alvarezii* through tissue culture technique and supply of tissue cultured seedling

to the farmers of Tamil Nadu coast". The Institute has produced and supplied 1800 seedlings through tissue culture for the first time in India and supplied it to the fish farmers.

Farmers seeding *Gracilaria edulis* on rafts



II. Inland Cage Culture Projects

NFDB has released a sum of Rs. 92.70 Lakhs to Madhya Pradesh Fisheries Federation for implementation of cage culture projects in Halali and Bargi reservoirs. A total of 200 cages were installed in these reservoirs. Besides, NFDB has also released Rs. 29.60 Lakhs to Dr. Rajendra Prasad Central Agricultural University (RPCAU) for demonstration and validation of cage aquaculture in Budhi Gandak River and Birauli Maun of Samastipur District in Bihar.

Cage culture in Halali Reservoir, Madhya Pradesh



Cage Culture in Bargi Reservoir, Chattisgarh



III. Domestic Marketing

NFDB has released Rs. 270 Lakhs to the Department of Fisheries, Government of Telangana for purchase and operation of 150 mobile fish retail outlets by unemployed women through GHMC. NFDB has also released Rs. 7.50 Lakhs to Tamil Nadu Fisheries Development Corporation (TNFDC) for the implementation of the project on Value Chain Development-Innovative Retail Outlet. NFDB has released a sum of Rs. 6.98 Lakhs for upgradation of Matsyadarshini Retail outlet at Hyderabad. A sum of Rs. 10.44 Lakhs was released for renovation of fish retail outlets at Bharatnagar Metro Station, Hyderabad, Besides, a sum of Rs. 67.26 Lakhs was released for construction of fish markets at Erode, Villupuram, Rameswaram and Kadayannallur in Tamil Nadu.

Value Chain Development in Innovative Retail Outlet of TNFDC



IV. Fisheries Development in Aspirational Districts

NFDB has released a sum of Rs. 24.82 Lakhs to the States of Manipur, Nagaland and Himachal Pradesh for fisheries development in community ponds and tanks in Aspirational districts by providing input assistance/construction of raceways.

V. Innovative Activity- Biofloc Aquaculture System

NFDB has released a sum of Rs.3.60 Lakhs for "Biofloc system for Inland culture" by KGRM Biofloc fish farming at Begusarai, Bihar.



Biofloc fish farming unit at Begusarai, Bihar

VI. Dissemination of Improved and New Fish Varieties

For demonstration of improved fish varieties through KVKs, NFDB has released a sum of Rs. 16.66 Lakhs to 12 KVKs at Washim & Baramati (Maharashtra), Sitamarhi & Rohtas (Bihar), Myrada (Tamil Nadu), Thoubal (Manipur), Kampasagar & Gaddipally (Telangana), Nellore & Venkataramannagudem (Andhra Pradesh), South 24 Paraganas (West Bengal) and Puri (Odisha). NFDB has also released a sum of Rs. 3.56 Lakhs to Government of Mizoram for setting up of fish seed rearing units. National Freshwater Fish Brood Bank (NFFBB), Bhubaneswar has distributed total spawn of Rs. 175 Crores (Rs. 109 Crores of Jayanti Rohu, Rs. 46 Crores of improved Catla and Rs. 19 Crores of Amur Carp) thorough out the country during FY 2020-21).

Demonstration of genetically improved fish varieties through

KVK, Sitamarhi, Bihar



KVK, Baramati, Maharashtra



VII. Fish Market and Price Information System

Fish Market Price Information System (FMPIS) has been initiated by NFDB to collect the prices of commercially important fish species across the country. FMPIS facilitates better marketability (fisher/seller) and accessibility (consumer/buyer) of fish. During FY 2020-21, about 200 number of markets have been covered from 12 States/UTs of South and North East India for collection of fish prices under FMPIS project.

VIII. Establishment of Marine Finfish Seed Rearing Units: M/s. MSR Aqua Hatchery Pvt. Ltd, Kakinada, Andhra Pradesh by CMFRI

This project is supported by NFDB to CMFRI for the establishment of Marine Finfish Seed Rearing Units by M/s MSR hatchery, Kakinada at a total cost of Rs. 258.45 Lakhs with NFDB assistance of Rs. 103.45 Lakhs. Hands-on training to the technicians of the hatchery and technical support on different aspects namely, broodstock maintenance, live feed culture, larviculture and nursery rearing was provided by ICAR-CMFRI. Yolk Sac larvae of Cobia and Silver Pompano were supplied from the Mandapam Regional Centre of ICAR-CMFRI for larviculture and seed production. A total of 7,67,700 nos. of Silver Pompano Yolk Sac were supplied to MSR Hatchery, out of which 2,61,600 nos. survived and being reared successfully. A total of 10,20,000 nos. of Cobia seeds were supplied out of which 1,60,000 nos. survived and being reared successfully. The hatchery has produced about 1,45,100 nos. of Silver Pompano fingerlings and 13,79,500 nos. of Asian Seabass fingerlings and were supplied for farming to 18 Farmers from Andhra Pradesh. During FY 2020-21, NFDB has released the balance amount of Rs. 58.97 Lakhs to CMFRI for the above project.



Silver Pompano Brooders



Tagging and Cannulation

D. Events/Campaigns organised by NFDB

I. National Fish Farmers Day

NFDB has virtually organized the National Fish Farmers Day on 10th July 2020. Shri. Giriraj Singh, Hon'ble Union Minister for Fisheries; Shri. Pratap Chandra Sarangi, Hon'ble Minister of State for Fisheries, Animal Husbandry and Dairying graced the occasion as Chief guests and more than 100 members participated in the event.

II. World Fisheries Day 2020

The Department celebrated World Fisheries Day (WFD) at NASC Complex in New Delhi on 21st November, 2020 in coordination with NFDB.

The Hon'ble Minister of State for Fisheries, Animal Husbandry & Dairying Shri Pratap Chandra Sarangi, Chief Guest inaugurated the World Fisheries Day celebration 2020. The Hon'ble Minister of Fisheries, Govt. of Uttar Pradesh, Shri Laxmi Narayan Chaudhary was present as the Guest of Honour.

The Hon'ble Minister of State for Fisheries, Animal Husbandry & Dairying released six booklets on "Recent Trends on Aquaculture" published by NFDB namely Marine Fish Culture, Bio-floc Fish Culture, Recirculatory Aquaculture System, Murrel Culture in Ponds, Trout Culture in Raceways and Trout Culture in Recirculatory Aquaculture System.

During the World Fisheries Day 2020 celebrations, awards were presented under categories such as Best State, Best District, Best Quasi Government Organization/ Federation/ Corporation/Board, Cooperative Societies/FFPO/ SHGs, VVI Best Enterprise / Entrepreneurs, Best Fishers and Fish Farmers and Best Hatchery, in recognition of their accomplishments in fish production and productivity, development and adoption of improved technologies and practices in fish farming.

NFDB released a sum of Rs. 113.40 Lakhs to 28 States/UTs for conducting the World Fisheries Day 2020 celebrations and training/outreach activities were to be taken up in the next 100 days from the starting of WFD 2020. As per available reports, about 2,41,425 members attended various related events.

World Fisheries Day 2020 Celebration



World Fisheries Day 2020 Celebration



3.5.6 Aquatic Animal Health & Quality Testing Laboratory

The Aquatic Animal Health & Quality Testing Laboratory (AAH&QTL) was established in 2019 by NFDB under Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India to develop and maintain up-to-date aquatic animal health management strategy to support the sustainable development and management of the aquaculture sector. AAH&QTL is soundly equipped with contemporary, advanced and comprehensive facilities to offer services including disease diagnostic and residues testing in crustaceans, fin-fishes and other aquatic animals meant for

national and international trade. AAH&QTL is recognized by the Coastal Aquaculture Authority as "National Referral Laboratory of CAA for Aquaculture" to test the samples referred under the Coastal Aquaculture Authority Act. Further, it hosts facilities for Molecular Diagnostics Laboratory (MDL), Microbiology Laboratory, Residual Testing Laboratory, feed, water & soil quality testing laboratory.



3.5.7 Aquatic Animal Health Laboratories

NFDB has set up 11 Aquatic Animal Health Laboratories (AAHL) in strategic locations both under public and private sectors to provide the aquatic animal health services and strengthen aquatic animal disease surveillance. The main objective is to enhance the technical support to aqua-farming community for effective disease diagnosis and timely identification of pathogens. These AAHL will be supporting as focal centres for providing information of disease outbreaks to the National Surveillance Programme for Aquatic Animal Disease (NSPAAD) programme.

3.6 Central Institute of Fisheries, Nautical & Engineering Training

3.6.1 History of CIFNET

Indian fishery after independence has witnessed remarkable technological developments with due thrust and support from Central and State Governments. One of the revolutionary changes in this direction was the introduction of sophisticated deep sea fishing vessels, which necessitated a great demand for qualified and certificated personnel for manning them. Realizing the urgent need and importance of organizing suitable fisheries training system at the national level to meet the demands of fishing industry, Government of India established the Central Institute of Fisheries Nautical and Engineering Training (CIFNET) in 1963 at Kochi to meet the statutory manning requirements of deep sea fishing vessels as laid down in the Merchant Shipping Act (1958) and skilled personnel required by the supporting shore installations. The Merchant Shipping (Amendment) Act 1987 stipulated that all fishing vessels with mechanical propulsion are required to be manned by duly certificated personnel, so that the diversification of fishing and development of deep sea fisheries could be effectively implemented with adequately trained manpower capable of effectively handling the type and class of vessels. Subsequently, two units of the Institute were set up at Chennai in 1968 and at Visakhapatnam in 1981 to cater to the increased demands of trained manpower in the country.



CIFNET is the only national institute of its kind in the country to meet the training requirements of technical and certificated personnel such as Skippers, Mates, Engineers, Engine Drivers of power fishing vessels as stipulated in the M.S. (Amendment) Act. 1987. CIFNET is also responsible for developing the required technical manpower for supporting shore establishments and effective operation of fishing vessels. The various short-term courses conducted by the Institute cover an integrated multidisciplinary area including Fishing Technology, Nautical Science and Marine Engineering benefiting personnel working in international institutions and various organizations under the Central/State Government departments, colleges and other Public/Private sector establishments. The Institute also focuses on skill development training of fishermen in deep sea fishing for oceanic tuna and in responsible fishing practices.

3.6.2 Mandate of CIFNET

The objectives of the Institute encompass fisheries development, particularly on the training of manpower for fisheries and are elaborated below:

- a. To create technical manpower for the operation of ocean going/deep sea fishing vessels and to run infrastructure establishments
- b. To create trained manpower to manage fishery establishment
- c. To train the fishermen of the coastal states under capacity building training programme by Blue Revolution / PMMSY.
- d. To provide training for technical teachers for manning the fishermen training centers attached to Maritime States and UTs
- e. To conduct studies on fishing craft, fishing gears and equipments and provide extensive training to accelerate advancement in fishing technology for

enhancing productivity of fishermen and increasing marine fish production

- f. To develop nations in the South-East Asia, Middle East and African regions to create technical manpower for development of Marine Fisheries
- g. To provide technical consultancy service in all matters with special reference to technical manpower requirements

3.6.3 Regular Training Programmes

3.6.3.1 Courses offered by CIFNET

The Institute conducts various courses such as:

- a. Bachelor of Fisheries Science (Nautical Science) approved and affiliated by Cochin University of Science & Technology, Kochi recognized by UGC. Each course is offered for 2 years
- b. Two trade courses, Vessel Navigator Course (VNC) & Marine Fitter Course (MFC) have been approved by Ministry of Labour, affiliated to National Council for Vocational Training (NCVT)
- c. Short term training programmes for fishermen of coastal states under PMMSY through outreach and in-house programmes
- d. Short term training programmes for Training of Trainers (TOT) of officials from sister organizations, fisheries departments of the State Government and short term course for coast guard officials and students from VHSS and professional colleges
- e. Ancillary Course "Shore Mechanic Course" (SMC) of one-year duration for the sponsored candidates
- f. The statutory courses namely Elementary Fishing Technology Course (EFTC) and Advanced Fishing Technology Course (AFTC) are conducted as per demand

EFTC is mandatory for appearing for the Mate Fishing Vessel Examination for Non-CIFNET (Private) candidates. The Advanced Fishing Technology Course (AFTC) is mandatory for appearing for the Skipper Grade II Fishing Vessel Examination conducted by MMD

During the FY 2020-21 (up to 31st March 2021), 125 students of BFSc (NS) and 217 trainees of VNC/MFC attended the regular courses. The details of student strength as of 31st March 2021 is furnished below.

Student's strength of CIFNET (as on 31st March, 2021)

Training Centre	Vessel Navigator Course*		Marine Fitter Course*		BFSc (NS)*				TOTAL*
	1 st year	2 nd year	1 st year	2 nd year	1 st year	2 nd year	3 rd year	4 th year	
Kochi	18	19 (2)	20 (1)	20 (1)	-				77 (4)
					35 (18)	33 (17)	30 (16)	27 (10)	125 (61)
Chennai	17	20	17	19	-				73
Vizag	16	17	15	19	-				67
TOTAL	51	56 (2)	52 (1)	58 (1)	35 (18)	33 (17)	30 (16)	27 (10)	
Course wise total strength	107 (2)		110 (2)		125 (61)				342 (65)

*No of Girls given in bracket

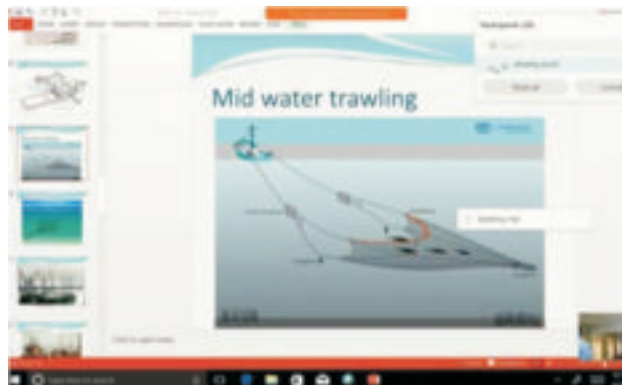
3.6.3.2 Training and Vessel Target and Achievements

During FY 2020-21, the Institute conducted all its regular training programmes namely, BFSc (NS) degree course, NCVT trade courses viz., the Vessel Navigator Course (VNC) and Marine Fitter course (MFC) through online and regular class room classes as per the planned time tables. Online mode of training programmes were conducted virtually due to the Covid-19 pandemic spread in the country and the subsequent lockdown from April 2020 onwards. The online classes were conducted at CIFNET headquarters Kochi and its two Units at Chennai and Visakhapatnam. The

regular classroom classes for VNC/MFC commenced at CIFNET HQ, Kochi, and Units at Chennai and Visakhapatnam during October 2020, as per the directives of DGET to facilitate classes for trade exams. After the completion of trade course exams, regular classes were continued online at CIFNET Kochi and Chennai and class room classes continued at CIFNET Visakhapatnam. From January 2021 onwards the Institute started conducting regular classes for the BFSc (NS) as well as VNC/MFC students.

Under the regular course, BFSc (NS), 125 students are undergoing training and in MFC/VNC a total of 217 students are undergoing training.

Online classes for regular courses during Covid-19 National Lockdown



The Ancillary Course, namely Shore Mechanic Course (SMC) was conducted for eight candidates from Lakshadweep. Fishermen training programmes and other extension programmes were not conducted till October 2020 due to the pandemic situation in the country. From November 2020 onwards 636 fishermen were given training under PMMSY scheme strictly following Covid-19 protocols.

During FY 2020-21, the training vessel, M.V. Prashikshani attached to CIFNET Headquarters Kochi has been undergoing repairs at CSL Kochi from March 2020 onwards. The vessel completed dry docking and was made ready for sailing by November 2020. Regular operation of vessel commenced from 12th December 2020. The vessel carried out sailing for a total of 80 days out at sea with fishing days of 68 days, expending total fishing effort for 232 hrs and 3210 hooks and obtained a total fish catch of 0.908 Tonnes. The

vessel achieved 515 institutional trainee days and 900 post institutional trainee days.

The vessel M.V Skipper II attached to CIFNET Chennai underwent a short dry docking for the period from April 2020 to July 2020 at Kochi for the renewal of the stern tube seal which was awaited from OEM supplied spare parts from abroad through CSL, Kochi. After the dry docking the vessel carried out sailing for a total of 144 days out at sea with fishing days of 114 days, expending total fishing effort for 361 hrs and 530 hooks and obtained a total fish catch of 3.069 Tonnes. The vessel achieved 675 Institutional trainee days and 1125 Post Institutional trainee days.

The vessel M.V. Tharangini attached to CIFNET Unit Visakhapatnam started operation from June 2020 onwards. During the year, the vessel was out at sea for 186 days with 163 fishing days,

expending total fishing effort for 566 hrs, 1395 hooks and a total fish catch of 15.328 Tonnes. The vessel achieved 428 Institutional trainee days and post institutional days of 1505 days.

In this regard, the performance of CIFNET from April 2020 to March 2021 including training and operational parameters is as shown below:

Performance of CIFNET 2020-2021

Sl.No	Parameters	Annual Target 2020 - 2021	Total Achievement (up to March 2021)
I. Target for Institution Training Programmes			
1	No. of students under Degree course – BFSc (NS)	142	125
2	No. of students under Trade Courses (NCVT) Vessel Navigator Course/ Marine Fitter Course	240	217
3	No. of students under Ancillary Course (Shore Mechanics Course)	10 (as per demand from sponsors)	7
4	Statutory & Refresher Course	10 (as per demand)	1
II. Target for Other Training Programmes			
5	Short Term training courses (STC)	1000	
(a)	Fishermen training		213
(b)	Extension training for fishermen (Outreach)		423
(c)	STC for officials (Coast Guard, Fisheries officials)		-
(d)	Professional students/VHSS		25
III. Target for fishery training vessels			
6	Days out at sea	400	410
7	Fishing Days	300	345
8	Fishing Effort (hrs)	1100	1148
9	Fishing Effort (Hooks)	5000	5135
10	Catch (T)	15	19.305
11	Institutional trainee Days	1500	1618
12	Post Institutional trainee days	2750	3530

During the financial year 2020-2021, CIFNET enhanced the targets for the parameters for fishery training vessels and achieved the target

with more than 100 percent performance in all the parameters for fishery training vessels, despite the limitations

The details of the short term training programmes conducted by CIFNET during FY 2020-21 are furnished below:

Details of Short term and Extension courses conducted for fishermen under PMMSY

S.No.	Short term course / Extension course / Training	No. of participants	Sponsor	Period		Centre
				From	To	
Short term courses						
1	Safety at Sea, Electronic Equipments, Hygienic Handling of Fish Catch	20	NETFISH-MPEDA	21st November, 2020	-	Kochi
2	Responsible Fishing, Hygienic Handling of Fish and Sea Safety Measures for the Deckhands	14	Kerala State Fisheries Department	2nd December, 2020	4th December, 2020	Kochi
		15		21st December, 2020	23rd December, 2020	
3	Safety at Sea , Responsible Fishing and Marine electronics for fishermen (Serang)	18	Kerala State Fisheries Department	22nd February, 2021	12th March, 2021	CIFNET Kochi
		11	Kerala State Fisheries Department	1st February, 2021	19th February, 2021	Kochi
4	Operations and Maintenance of Marine Engines & Sea Safety Measures (for Engine driver)	12	Kerala State Fisheries Department	28th December, 2020	8th January, 2021	Kochi
		12		28th December, 2020	8th January, 2021	
		10		11th January, 2021	22nd January, 2021	
5	Maintenance of Boat Engines and Fishing Practices	30	Fishermen of Andhra Pradesh	28th December, 2020	30th December, 2020	Vizag
6	Sea Safety and Fish Quality Management in Fishing Vessels	16	NETFISH-MPEDA	21st January, 2021	-	Vypin, Kerala
Awareness training programme						
1	Basic Seamanship, Navigation and Marine Electronic Equipments	39	Fishermen of Andhra Pradesh	4th January, 2021	6th January, 2021	Vizag
2	Maintenance of Boat Engine and Fishing Practice	22	-	18th January, 2021	20th January, 2021	Vizag
		22	-	27th January, 2021	29th January, 2021	Vizag
Extension/outreach training programme						
1	Defects and Trouble Shooting of Boat Engine	30	Fishermen of Puducherry	30th December, 2020	-	Chennai
		20	Andhra Pradesh Fishermen	19th March, 2021	-	Visakhapatnam
		22	NETFISH-MPEDA	4th February, 2021	-	Chennai
		10	-	16th February, 2021	-	Chennai
2	Sea Safety and Fish Quality Management in Fishing Vessels and Harbour	30	NETFISH- MPEDA	28th January, 2021	-	Azheekal Fishing harbour, Kayamkulam
		29		5th February, 2021	-	Chettuva, Thrissur, Kerala
3	Sea Safety and Fish Quality Management in Fishing Vessels and Harbour and KMFRA	35	NETFISH-MPEDA	22nd February, 2021	-	Cherthala, Alappuzha
		32	NETFISH-MPEDA	4th March, 2021	-	Thottappalli, Alappuzha
		41	NETFISH-MPEDA	9th March, 2021	-	Ponnani, Malappuram dt, Kerala

S.No.	Short term course / Extension course / Training	No. of participants	Sponsor	Period		Centre
				From	To	
4	'Responsible fishing' and 'Square Mesh End Code End Fabrication'	80	Fisheries department Odisha	23rd February, 2021	24th February, 2021	Paradweep, Odisha
5	Fabrication of Square mesh code ends under PMMSY scheme	38	--	11th February, 2021	-	Chennai
6	Communication & Navigational Equipments Onboard Fishing Vessel	29	NETFISH-MPEDA	5th February, 2021	-	Chennai
7	Communication and Navigational Equipments under PMMSY scheme	11	--	12th February, 2021	-	Chennai

3.6.4 Capacity Building Training Programme

CIFNET also conducts Capacity Development Training Programme under NFDB assistance for which the training programme on 'Long Line Fishing' and 'Tuna Handling Onboard the Vessel'

for the fishermen were given special attention. 335 training have been imparted to fishermen since January 2017. However, capacity building training programmes was impacted by COVID-19 pandemic restrictions and 42 sessions were conducted as given below:

Details of Capacity building training for fishermen in Long lining and Tuna handling

Fishermen Batch	Training Period FY 2020-21		Training Centre			Total
	From	To	Kochi	Chennai	Vizag	
I	4th February 2020	12th February 2020	-	20	-	20
II	11th February 2020	20th February 2020	-	12	-	12
III	18th February 2020	28th February 2020	-	10	-	10
		Total	-	42	-	42

I. Training programmes under PMMSY conducted by CIFNET

Training of Fisherman from Kerala at
Kochi 2nd December to 4th December, 2020



Training of Fisherman from Kerala at
Kochi 21st December to 23rd December 2020



Practical Sessions in progress - Fishing gear hall



Practical Sessions in progress - Safety at Sea and Navigation



**Training course under PMMSY for fishermen of Kerala at CIFNET Kochi
(28th December, 2020 to 8th January, 2021)**



Fishermen of Kerala in the engine room onboard Fishing vessel M.V.Prashikshani during their training

**Training course under PMMSY for fishermen of Kerala at CIFNET Kochi
(11th to 22nd January 2021)**



Fishermen of Kerala in navigation simulator



Fishermen in the engine room during sailing onboard M.V .Prashikshani

**Fishermen training under PMMSY on "Safety at sea, responsible fishing, and marine electronics for the Serang"
11 fishermen from Kerala at CIFNET Kochi (1st to 19th February, 2021)**



Fishermen during the practical session on chart work



Fishermen attending training onboard M.V Prashikshani



II. Training programmes for Andra Pradesh fishermen under PMMSY (In-House)

**Training of Fisherman from Andhra Pradesh at Vishakaptanam
28th December to 30th December, 2020**





Training under PMMSY for Fishermen of Andra Pradesh by CIFNET unit Vizag (4th to 6th January, 2021)



Training under PMMSY for Fishermen of Andra Pradesh by CIFNET unit Vizag (27th to 29th January, 2021)

III. Outreach/Extension Fishermen Training Programmes for Kerala fishermen

Training of Fisherman from Andhra Pradesh at Vishakaptnam 28th December to 30th December, 2020



Programme for fishermen under PMMSY scheme, on "Sea Safety and fish quality management in fishing vessels" (21st January, 2021)

Programme for fishermen under PMMSY scheme, on “Sea Safety and Fish Quality management in Fishing vessels and Harbour” (28th January, 2021)



Fishermen attended the training programme



Fishermen attending the class

Training “Sea Safety and Fish Quality management in Fishing vessels and Harbour” (5th February, 2021)



Outreach training programme on "Sea safety and fish quality management in fishing vessels and harbour and KMFRA (22nd February, 2021)



Fishermen outreach programme at Cherthala, Alappuzha. Kerala

Outreach training programme "Sea safety and fish quality management in fishing vessels and harbour and KMFRA" (9th March, 2021)



IV. Outreach/Extension Fishermen Training Programmes for Tamil Nadu fishermen

**Extension training for fishermen under PMMSY on
“Defects and troubleshooting of boat engine” by CIFNET Chennai (4th February, 2021)**



**Extension training for fishermen under PMMSY on “Communication & Navigational
equipments onboard fishing vessel” at CIFNET Chennai. (5th February, 2021)**



**Extension training programme for fishermen under PMMSY scheme on
“Fabrication of Square mesh code ends” (11th February, 2021) by CIFNET Unit Chennai**



**Extension training programme for the fishermen of Tamil Nadu on “ Communication and
Navigational equipments” by CIFNET Unit Chennai (12th February, 2021)**



**Extension training programme for fishermen under PMMSY scheme on “Defects and Trouble
shooting of boat engine” for fishermen of Tamil Nadu by CIFNET Unit Chennai (16th February, 2021)**



3.6.5 Other Events/ Meetings Organised**I. Review meetings**

- a. Review meeting with the Ministry officials was conducted through video conferencing on 22nd July, 2020 as per the agenda points listed by the Ministry on the functioning of CIFNET. The meeting was chaired by Joint Secretary (Inland Fisheries & Administration)
- b. The half yearly review meeting of CIFNET on training activities, vessel operation, administrative and financial matters for the period from April 2020 to September 2020 was convened on 17th November, 2020 through video conferencing. The meeting was chaired by Director, CIFNET and was attended by DD i/c, CIFNET Unit Chennai and Vizag and all the concerned officers from CIFNET HQ Kochi
- c. Another meeting was held through video conferencing by the Ministry to review the performance of the Fisheries institutes namely, CIFNET, FSI, NIFPHATT and CICEF on 17th December, 2020. The meeting was chaired by Secretary, Department of Fisheries

II. Hindi Pakhwada celebrations

Hindi Pakhwada was organized at CIFNET headquarters Kochi and also at its two units namely. Chennai and Vishakhapatnam from 14th September, 2020 by conducting various competitions for the staff such as noting and drafting, translation, copywriting, dictation, quiz, news reading etc following Covid-19 safety protocols.

III. World Fisheries day 2020

As part of World Fisheries Day celebrations, CIFNET organized a function at CIFNET Auditorium, Kochi on 21st November, 2020. Sh. K. S. Srinivas, IAS, Chairman, MPEDA, Kochi was the Chief Guest on the occasion. Prof. (Dr) M. Harikrishnan, Director, School of Industrial Fisheries, CUSAT, Kochi was the Guest of Honour. The function was presided over by Director, CIFNET. The fishermen, fisheries professionals, officials and scientists from sister organizations and faculty members, staff and students of CIFNET also participated in the event, following the social distancing norms. An awareness and interactive session was also conducted and expert were invited from sister organizations. Faculty members of CIFNET made presentation on various aspects related to Marine fisheries. 20 fishermen from Kerala also attended the programme.

During the event, a series of CIFNET publications as mentioned below were released:

- a. CIFNET Souvenir
- b. CIFNET Roadmap 2020-21 to 2024-25
- c. CIFNET syllabus for training programmes under PMMSY
- d. Study material on Fisheries technology course for coastguard
- e. CIFNET training manual for Serang
- f. CIFNET training manual for Engine Driver
- g. CIFNET training manual for Deckhand

Inauguration of World Fisheries Day 2020 at CIFNET Kochi



Address by Director CIFNET



Release of Syllabus Book of PMMSY courses and other books published by CIFNET



Fishermen participants along with the Director



IV. National Fish Farmer's Day

CIFNET celebrated the National Fish Farmer's Day on 10th July, 2020 by organizing a workshop at CIFNET Head Quarters, Kochi. Director, CIFNET inaugurated the function. On this occasion, Director and Faculty members delivered lectures/presentation/awareness classes on various topics related to fisheries and fishermen.

Address by Director, CIFNET on Fish Farmer's Day at CIFNET Kochi



V. International Yoga Day 2020

As per the theme of International Yoga Day 2020, "Yoga for Health - Yoga at Home" and directive from the Ministry, the officers and staff of CIFNET practiced Yoga at their home along with their family members on 21st June, 2020.

Yoga being practiced by Director and staff members



VI. Digital launch of PMMSY scheme

The digital launch of PMMSY scheme by Hon'ble Prime Minister Shri Narendra Modi on 10th September, 2020 was attended by the Director and Staff of CIFNET Headquarters and its units.

CIFNET Director, Faculty members and staff attending the digital launch of PMMSY



VII. Fabrication of High-Speed Demersal Trawl net

A 38m High Speed Demersal Trawl net (HSDT) was fabricated at Fishing Gear Hall, CIFNET HQ Kochi and handed over to Dr. Hashim Manjebrayakath, Scientist-D, CMLRE on 17th September, 2020 for experimental fishing cruise of FORV Sagar Sampada.

Fabrication of High Speed Demersal Trawl net for CMLRE, Kochi



VIII. CIFNET attended the meeting organized by NETFISH- MPEDA

CIFNET attended the executive meeting of NETFISH through video conference on 21st August, 2020 in order to discuss the proposal to conduct various training programmes including fishermen/boat operators onboard.



IX. Vigilance Awareness Week

The observance of Vigilance Awareness Week commenced from 27th October, 2020 at CIFNET Head Quarters and its Units. Vigilance pledge was administered to officers and staff members. CIFNET unit Vizag conducted debate and panel discussion among the staff members on the theme "Satarak Bharath, Samriddh Bharath". In the concluding ceremony of the vigilance week on 2nd November, 2020, Dr. Alok Kumar Gupta, Regional Director, National Institute of Open Schooling, Ministry of Education, Government of India delivered a speech about the importance and need of Vigilance at CIFNET Headquarters, Kochi.

Vigilance Awareness Week conducted at CIFNET



X. Constitution day celebrated at CIFNET

CIFNET HQ, Kochi and its Units at Chennai and Visakhapatnam organised the 'Reading of Preamble' on Constitution Day of India 26th November, 2020. At CIFNET HQ, Kochi, the preamble of the constitution was read by Shri M G Makwana, Chief Instructor (ME)/Director i/c and followed by the officers, faculty members and staff. The Constitution Day of India was also conducted at CIFNET Units Chennai and Visakhapatnam by the officers & staff. The preamble was also read.

Constitution day celebrated at CIFNET



XI. Public Toilet Block constructed under Swacch Bharath Mission

Under the Swacch Bharath Mission, a public toilet was constructed by CIFNET at Edavanakad fishing village, Kerala and was inaugurated on 12th February, 2021.

Inauguration of public toilet at Edavanakad fishing village, Kerala



XII. Webinars conducted by CIFNET

For the benefit of students of CIFNET and other related institutes, CIFNET has been organizing webinars on currently relevant topics by inviting experts.

Dr Nithin CT, Processing cum Quality Assurance supervisor, NIFPHATT Kochi during the webinar at CIFNET, Kochi



Dr. A A Mohammed Hatha, Professor, CUSAT in the Webinar on "Emerging infectious disease - Role of ecology and technology" at CIFNET, Kochi for students and staff members (5th March, 2021)

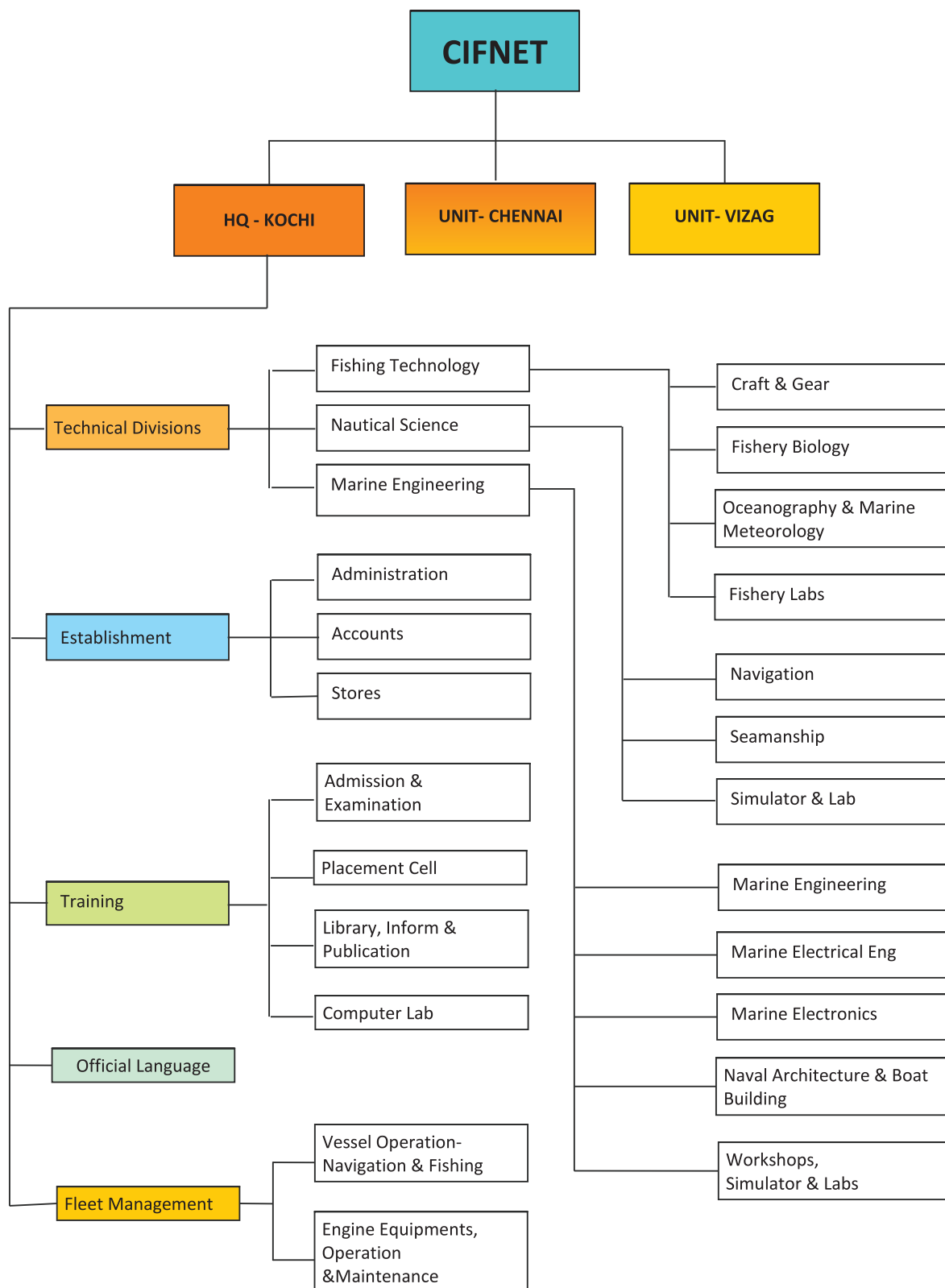


XIII. Republic day celebration at CIFNET

Director CIFNET Kochi hoisted the national flag on 26th January, 2021 and addressed the staff and students



ORGANIZATIONAL STRUCTURE OF CIFNET



The details of the CIFNET staff position functioning in all three centre/ratio are given in the table below.

CIFNET Staff Sanctioned strength, filled and vacant posts (as on 31st March, 2021)

Category of post	Sanctioned Strength	Posts filled	Total vacant
Group "A"	40	22	18
Gr."B"(G)	06	02	04
Gr."B"(N.Gaz)	66	29	37
Group "C"	167	92	75
Total	279	145	134

3.7. National Institute of Fisheries Post Harvest Technology and Training

3.7.1 Mission and Mandates of NIFPHATT

- Post-harvest technology up-gradation and its transfer to beneficiaries such as rural fishermen community, small scale industries, export processing houses and students through consultancy, job work and training
- Value added product development by way of process and product diversification from all varieties of fish including low value, unconventional and seasonally abundant fishes
- Imparting training in the field of post harvest technology, refrigeration technology, Quality control and value added products
- Providing consultancy services and training for rural development programmes/women empowerment programmes in fish processing, supporting local fish farmers, self-help groups of fishermen community, fishermen's cooperative societies functioning under Panchayathi Raj institutions
- Popularization and test marketing of value added products from fish varieties including low value, unconventional species and seasonally abundant fishes

- Extension of the activities through popularization and test marketing of value added products to new areas and develop markets in all states in a phased manner with added attention to rural areas and enthused entrepreneurs to enter into sea food processing industry

3.7.2 Milestones Achieved

NIFPHATT has taken up many measures as below for fishermen community and area development:

- Introduced mechanization and motorization in marine fishing sector in India
- Survey and mapping of resources along South- East and South-West coasts
- Introduced deep sea fishing techniques such as long lining, purse seining, deep sea trawling, gillnetting etc. as a part of exploratory and experimental fishing
- Established refrigeration plant and cold storage facilities
- Developed diversified value added marine products and processes
- Popularized the diversified fishery products in rural and urban markets in different parts of the country and created awareness among processors and consumers
- Established Marine workshops and slipway/dry docking facilities for fishing trawlers

- i. Established fully equipped electronic and electrical sections
- j. Established life raft-servicing stations duly recognized by the Mercantile Marine Department
- k. Led the Antarctic expedition in the polar vessel Sagar Sampada for the exploration of Krill resources
- l. Popularized and promoted fish as healthy food
- m. Created a cadre of fish processing experts through imparting hands-on training and exposure to the students of food technology particularly fisheries
- n. Conducted training programmes on post harvest technology, repairs and maintenance of fishing gears
- o. Implemented coastal community empowerment programmes with special reference to gender

3.7.3 Major Activities and Performance for the Year 2020-2021

A) Research and Development Programme

1. IQF Butterfly shrimp coated in garlic flavoured coconut crumbs

As a part of Research & Development programme and in line with the Institute's mandate for developing value added product, processing section of NIFPHATT, Vizag unit has developed an innovative product "IQF Butterfly shrimp coated in garlic flavoured coconut crumbs". This ready-to-cook product is a perfect blend of simplicity and good taste. The recipe is formulated with locally available ingredients without addition of complicated processes/ machineries. Convenience and delectability of the product makes it an excellent starter/snacks even in premium restaurants. Mild spicy nature of the product makes it suitable for consumers from all the age groups.

The product is developed from Whiteleg shrimp (*Penaeus vannamei*), one of the most sought-after shrimp species in global trade. Along with essential macronutrients, shrimp is rich in Vitamin B6, B12 and Niacin, which contribute to improved performance of nervous system, digestive system and a glowing skin. However, increased competition and stringent quality requirements in global seafood trade has necessitated development of high-end products with strict adherence to good manufacturing practices and quality standards. The present product has been formulated with this objective and to help processors and exporters in gaining better penetration in global markets, thereby fetching higher foreign returns for the country. The technology is cost effective and can also be adopted by small scale units, women Self Help Groups (SHGs), caterers and super markets.

Whiteleg shrimp (*Penaeus vannamei*)



IQF Butterfly shrimp coated in garlic flavoured coconut crumbs



2. Products made from Pangasius Fish and moringa leaves

Fish and fishery resources have a commendable role in addressing the global apprehension of food security. Fish is a low-fat high quality protein with all essential amino acids, rich in omega-3 fatty acids and vitamins. It is one of the best sources for calcium, phosphorus and other minerals such as iron, zinc, iodine, magnesium, selenium and potassium. Fish protein is the most easily digestible meat protein. It promotes growth, wellbeing, brain development, learning efficiency, eyesight, immunity etc. particularly in children and protects heart in general.

However, majority of the population in India, except along the coastal belt, are reluctant to include fish in their daily diet due to fear of consuming bones, characteristic smell, difficulty in cleaning/dressing, disposal of wastes etc. "Conversion to Convenience" based high-end ready to eat/ready to cook products by eliminating the negative issues is a major tool to make fish acceptable to such reluctant populace. Combining the fish with other vegetarian preparations makes it a typical balanced food. Fortification of fishery products by incorporation of nutrient rich ingredients is expected to help children and non-fish eaters to adopt fish in their diet.

Pangasius is an emerging aquaculture species in India, due to its intrinsic characteristics such as high growth rate, sturdiness, minimum management requirements, better feed conversion ratio etc. Hence it is readily available in all interior states, making it a potential resource for popularization of health benefits of fish.

Drumstick or moringa is a common and popular plant readily available in all household backyards in India. The tree is valued for its nutritious leaves and medicinal properties. Moringa leaves have higher amount of vitamin C than oranges and

more potassium than bananas. It also contains calcium, protein, iron and amino acids, which help the body in healing and building muscles. It is also packed with antioxidants that can protect cells from damaging and boost immune system. As vegetable sources when incorporated with meat proteins in the diet allow better absorption and assimilation of nutrients therefore fish and vegetables (with Moringa leaves) make a perfect match for a balanced diet to mitigate the malnutrition issues of the Indian rural populace. NIFPHATT has developed pangasius fish wafers, cutlets, samosa and fish mixture with moringa leaves which are ready-to-fry products. The product has a shelf life of six months at ambient temperature and can be a tasty nutritious evening snack or a perfect companion with all meals.

Pangasius Fish Wafers



Pangasius Fish Cutlets



Pangasius Fish Samosa**Pangasius Fish Mixture****B) Marketing Section**

The applied research activities on value added product development from under utilized fishes, product and process diversification, on the job training programmes for skill upgradation of university students and other activities are carried out by NIFPHATT. The raw materials for all the activities are sourced by the Marketing section through Department vessels and fishermen co-operative societies. The existing and novel products thus developed are test marketed and popularized by the Marketing section through various means. A total of 164.15 tons of fish was procured through the Department vessel and fishermen co-operative societies and 113.33 tons of fish and fishery products are test marketed that fetched a revenue of Rs. 147.63 Lakhs.

Procurement of raw materials from Department vessel

S. No.	Source		Quantity (Kg)
1	Department vessels	CIFNET Vessel	15.72
		FSI Vessel	35.54
2	Fishermen Co-operative Societies		112.88
Total			164.14

Dog tooth Tuna (*Gymnosarda species*) being unloaded



Emperor fish (*Lethrinus species*) being unloaded



Seerfish Big (*Acanthocybium species*)



Gilled and Gutted Tunas ready to enter freezer



Quality inspection and weighment



Yellow fin Tuna brought by insulated van embedded in crushed ice from Fishermen Co-operative Socceity at Chethy, Alappuzha,



Sword fish brought by insulated van in iced condition

Gutting, Gilling and Loading to Frezer



Frozen fishery products being loaded from cold storage, for transferring to NIFPHATT stall at Ernakulam



Test Marketing of fish and fishery products



Trainees from Jamu Kashmir- Ladak, CIFT visiting NIFPHATT



Customers waiting at Ernakulam stall

C) Training Programmes

1. Refresher training on HACCP concepts

NIFPHATT Kochi conducted a refresher training on HACCP concepts for the faculties on 11th November, 2020. Prof. (Dr.) M. K. Mukundan, Managing Faculty, Dr. Mukundan's Institute for Food Safety & Technology (MIFT) and Dr. S. Girija, Former Director, NIFPHATT conducted the online classes. Processing Technologists, Processing-cum-Quality Assurance Supervisors, Marketing Assistants along with apprentice trainees of the Institute attended the programme. The major topics covered were "Introduction to food safety ISO 22000- HACCP & PRPs, Food safety Hazards & Food Borne Diseases, overview on HACCP and CODEX 12 Steps of HACCP Implementation"



2. Apprenticeship training

This is a one year programme exclusively designed for the passed out candidates from Vocational Higher Secondary Schools. The training is conducted in association with Regional Directorate of Apprenticeship Training, Chennai, under Ministry of Skill Development and Entrepreneurship, Government of India. Major objective of the programme is to create a cadre of fisheries experts with sound practical and theoretical knowledge. During the programme, trainees are given hands-on experience in all the processing activities, quality assurance, microbial analysis, hygienic handling of seafood. Students are also paid monthly stipend to meet their expenses. During FY 2020-21, 6 students are pursuing the programme.



Practical training on quality evaluation of seafood



Practical training in freezing plant



Practical training on quality evaluation of seafood



3. Training Programme on “ISO 22000 FSMS- HACCP and PRPs”

NIFPHATT, Kochi conducted online training programme on “ISO 22000 FSMS- HACCP and PRPs” for 25 students from Asutosh College, Kolkata from 15th December to 19th December, 2020 online. Prof. (Dr.) M. K. Mukundan, Former Director, CIFT and Managing Faculty, Dr. Mukundan's Institute for Food Safety & Technology (MIFT), Dr. S. Girija, Former Director, NIFPHATT and Senior Faculty, MIFT, Shri. K. Kamalraj, Processing Technologist, NIFPHATT and Dr. Nithin. C. T, Processing-cum-Quality Assurance Supervisor, NIFPHATT took the training classes. Major topics covered were introduction to food safety ISO 22000- HACCP & PRPs, food safety hazards & food borne diseases, overview on HACCP and CODEX 12 steps of HACCP implementation, process flow chart & its preparation, preparation of HACCP work sheet, preparation of HACCP plan form etc.

4. Training on Value added product development for fisher folks

NIFPHATT, Kochi conducted three days training on value added product development from seafood from 18th to 20th January, 2021 and 27th to 29th January, 2021. The programme was organized by Department of Fisheries, Government of Kerala in association with NFDB, Hyderabad. 48 fisher folks from Ernakulam, Kottayam Ernakulam, Alleppey and Thrissur districts of Kerala and 3 industry candidates attended the programme. During the training, participants were informed about the importance of hygienic handling while handling perishable commodity like fish. Trainees were also equipped with the know how for producing various seafood value added products such as cutlets, pickles, wafers, mixture, fingers, rolls, samosa, dried prawns with spices, prawn chutney powder etc.

Training Programme



Training & theory classes in progress



Practical classes on value - added product



Trainees with the products



Valedictory function



Products Developed During the Training



Fish cutlets



Fish fingers



Fish Rolls



Fish Samosa



Fish Wafers



Fish pickle



Dried Prawn with spices



Prawn chutney powder



Fish mixture

5. Webinar on Non-thermal processing

Dr. Nithin C. T, Processing cum Quality Assurance Supervisor acted as the resource person for the webinar on Non-thermal processing methods conducted by CIFNET, Kochi. More than 80 participants including students and faculties attended the programme in direct and online modes.

Webinar in progress



Interaction with students



6. Online training on “Post-harvest management”

NIFPHATT, Kochi conducted online training on post-harvest management organized by Department of Fisheries, Government of Kerala and Institute of Management in Government (IMG). The programme was arranged for the departmental staff. On behalf of NIFPHATT, Dr. S. Girija, Former Director, Shri. Varghese John, Marketing Officer, Shri. K. Kamalraj, Processing Technologist, NIFPHATT and Shri. Shivakumar. K, Vice President, Innovative Foods Limited, Kochi acted as resource persons for the programme. The major topics covered by the faculties were Fish Freezing & Preservation, Fish Processing Methods-Smoking, Canning, Drying, Pickling, Packing & Marketing of Fish & Fishery Products etc.

Online class on Fish Freezing & Preservation by Shri. Varghese John, Marketing Officer, NIFPHATT



7. Online training on “Fisheries Post Harvest Technology”

NIFPHATT, Kochi conducted online training on “Fisheries Post Harvest Technology” for 71 students from Government College, Kottayam, St. Xavier's College, Vaikom and St. Aloysius College, Edathua from 15th to 20th February, 2021. Faculties from NIFPHATT conducted classes on various aspects of fisheries post harvest technology such as follows biochemical composition of fish, Spoilage in fish and fishery products and freezing technology

Training in progress



8. On the Job training

26 students from St. Albert's College, Ernakulam has attended on-the-job training programme. The course is primarily aimed at providing hands on exposure to the students specialized in fish or food processing and allied areas. Even though the students acquire requisite theoretical knowledge from classrooms, this programme extends insight to the practical aspects of fisheries post-harvest technology when applied to actual field level. NIFPHATT with its expertise and experience in the

field has formulated the curriculum to mould the trainees fit for fisheries industry. The curriculum includes theoretical, In-plant/practical and audio-visual session.

9. Training on Microbiological Analysis of Seafood

5 students attended training on Microbiological Analysis of Seafood that provided insight on the essential microbiological parameters to be analysed in water, ice, fish and fishery products and methods for determining the same.

Practical session in progress



10. On the Job training in Fisheries Post Harvest Technology

NIFPHATT, Kochi successfully completed on-job training programme for 31 students from various colleges. During the training, students were given practical exposure on various fields of fisheries post-harvest technology. 3 students from BCM College, Kottayam are undergoing the training at present.

Name of the college	Discipline	Training Dates	Total
St. Teresa's College, Ernakulam	M.Voc. Food Processing Technology	11th to 25th February ,2021	3
KUFOS, Ernakulam	M.Sc. Food Science & Technology	11th February to 5th March,2021	1
SNGIST, Manjali	M.Sc. Microbiology	11th February to 5th March. 2021	1
St. Albert's College, Ernakulam	B.Voc. Fish Post Harvest Technology and Management	25th February to 3rd March, 2021	26
Total			31

On the job training



St. Albert's College, Ernakulam



St. Teresa's College, Ernakulam

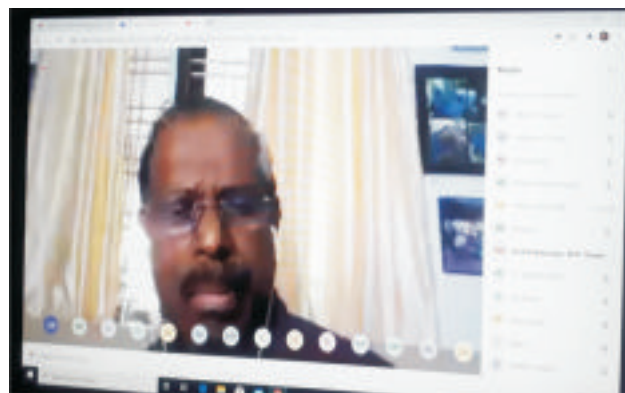


11. Online classes for Trainers Training Programme organized by NIFAM, Govt of Kerala in association with NIFPHATT, Kochi

Faculties from NIFPHATT acted as resource person for the Trainers Training Programme for Vocational Higher Secondary School Teachers & Instructors organized by National Institute of Fisheries Administration and Management (NIFAM), East Kadungallur, Aluva from 2nd to 6th March, 2021.

Date	Topic	Resource persons
2nd March, 2021	Fish Freezing & Preservation	Shri. Varghese John, Marketing Officer, NIFPHATT
3rd March, 2021	Fish Processing Methods- Smoking, Drying, Pickling,	Dr. S. Girija, Former Director, NIFPHATT
	Canning	Shri. K. Kamalraj, Processing Technologist, NIFPHATT
6th March, 2021	Current Good Manufacturing Practice (CGMP)	Dr. S. Girija, Former Director, NIFPHATT
	Personal Hygiene & SSOP	Dr. Nithin. C. T, Processing-cum-Quality Assurance Supervisor, NIFPHATT
	HACCP Concepts	Prof. (Dr.) M.K. Mukundan, Managing Faculty, MIFT. (Former Director, CFRD)

Online classes in progress



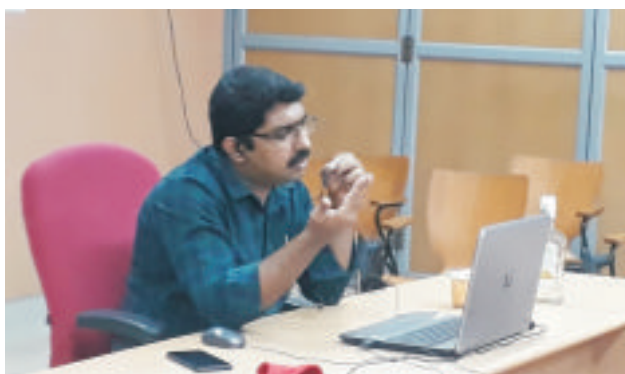
12. Online Training on Fisheries Post Harvest Technology for Asutosh College, Kolkata, West Bengal

NIFPHATT, Kochi conducted online training on "Fisheries Post Technology" for 29 BSc Industrial fisheries students from Ashutosh College, Kolkata during 4th to 6th March, 2021. Faculties from NIFPHATT conducted classes on various aspects of fisheries post harvest technology as follows:

Date	Topic	Resource Person
4th March, 2021	Introduction to the course, activities of NIFPHATT	Shri. K. Kamalraj, Processing Technologist
	Non-thermal processing of fish and fishery products	Dr. Nithin. C. T, PQAS

Date	Topic	Resource Person
5th March, 2021	Biochemical composition of fish	Shri. Varghese John, Marketing Officer
	Present status of seafood trade	Shri. Ragesh P, PQAS
6th March, 2021	Seafood by-products	Shri. Saburaj. P. R, PQAS
	Fish drying	Shri. Baiju. P, Marketing Assistant
	Smoked fishery products	Dr. Nithin. C. T, PQAS
	Value added fishery products	Shri. K. Kamalraj, Processing Technologist
	Concluding session- Terminal Evaluation and Feedback	Shri. K. Kamalraj, Processing Technologist & Dr. Nithin. C. T, PQAS

Online training in progress



13. On-job training in Fisheries Post Harvest Technology

NIFPHATT, Kochi successfully completed on-job training programme for 11 students from College of Indigenous Food Technology, Konni, Kerala from 15th to 20th March, 2021. During the training, students were given practical exposure on various aspects of fisheries post-harvest technology.

On - job training in progress



14. Online Training on Fisheries Post Harvest technology for VNS, College, Konni, Pathanamthitta, Kerala

NIFPHATT, Kochi conducted online training on "Fisheries Post Technology" for 11 BSc Food Technology & Quality Assurance students from VNS College, Konni, Kerala during 8th to 22nd March, 2021. Faculties from NIFPHATT conducted classes on various aspects of fisheries post harvest technology.

15. On-job training in Fisheries Post Harvest Technology

31 students from St. Teresa's College, Ernakulam, Kerala attended on-job training programme at NIFPHATT, Kochi in 22nd March, 2021. During the training students were given practical exposure on various fields of fisheries post-harvest technology.

On - job training in progress





16. Online classes on importance of value-addition and hygienic handling in fish processing

Dr. Nithin C. T, Processing cum Quality Assurance Supervisor conducted an online class on "Importance of value addition and hygienic handling in fish processing" organized by ICAR-KVK, Malappuram and ICAR CIFT, Cochin from 29th to 31st March, 2021. More than 40 participants including fish farmers and entrepreneurs attended the class.

Online classes in progress



D) Academic Visit

1. Visit of Fisher folks from Alleppey district, Kerala

40 fisher folks from Alleppey district, Kerala visited NIFPHATT, Kochi on 25th March, 2021, as a part of the training programme conducted by Agricultural technology Management Agency (ATMA), Alleppey. Trainees were acquainted with various activities and facilities of the Institute and interacted with the faculty members.

Interaction with trainees





2. Entrepreneurs from Ladakh, Jammu and Kashmir

3 entrepreneurs from Ladakh, Jammu and Kashmir and faculty from ICAR-CIFT visited NIFPHATT, Kochi on 6th February, 2021. Trainees were acquainted with various activities and facilities of the Institute and interacted with the faculty members.

Interaction with trainees



3. Students from College of Agriculture (KAU) Vallanikkara Thrissur, Kerala

Faculties, post-graduate and doctoral students from College of Agriculture (KAU) Vallanikkara, Thrissur visited NIFPHATT, Kochi on 9th March, 2021. Trainees were acquainted with various activities and facilities of the Institute and interacted with the institute faculty members.

Interaction with trainees



Interaction with trainees



Interaction with trainees



4. Visit of students from Devamatha College, Kuravilangad, Kerala

26 students and 3 faculties from Devamatha College, Kuravilangad, Kerala visited NIFPHATT, Kochi on 29th March, 2021. Trainees were acquainted with various activities and facilities of the Institute.

E) World Fisheries Day 2020

As a part of the World Fisheries Day 2020 celebrations, NIFPHATT Kochi conducted an awareness programme on 21st November, 2020 for the staff on the year's theme "Pradhan Mantri Matsya Sampada Yojana (PMMSY)". Shri. M. Shaji, Ex. Joint Director (Aquaculture) MPEDA served as the resource person for the programme. The class covered information on major schemes under PMMSY scheme and importance of hygienic handling in seafood processing. Shri. C. Sreekumar, Processing Technologist delivered the welcome address and Shri. K. Kamalraj, Processing Technologist offered vote of thanks.

Awareness programme on PMMSY



Observance of special days

Vigilance Awareness Week on 27th October, 2020



Rashtriya Ektha Diwas on 31st October, 2020



Constitution Day at NIFPHATT, Kochi on 26th November, 2020



Constitution Day at NIFPHATT, Vizag unit on 26th November, 2020



3.7.4 Performance for the year (FY 2020-2021) performance

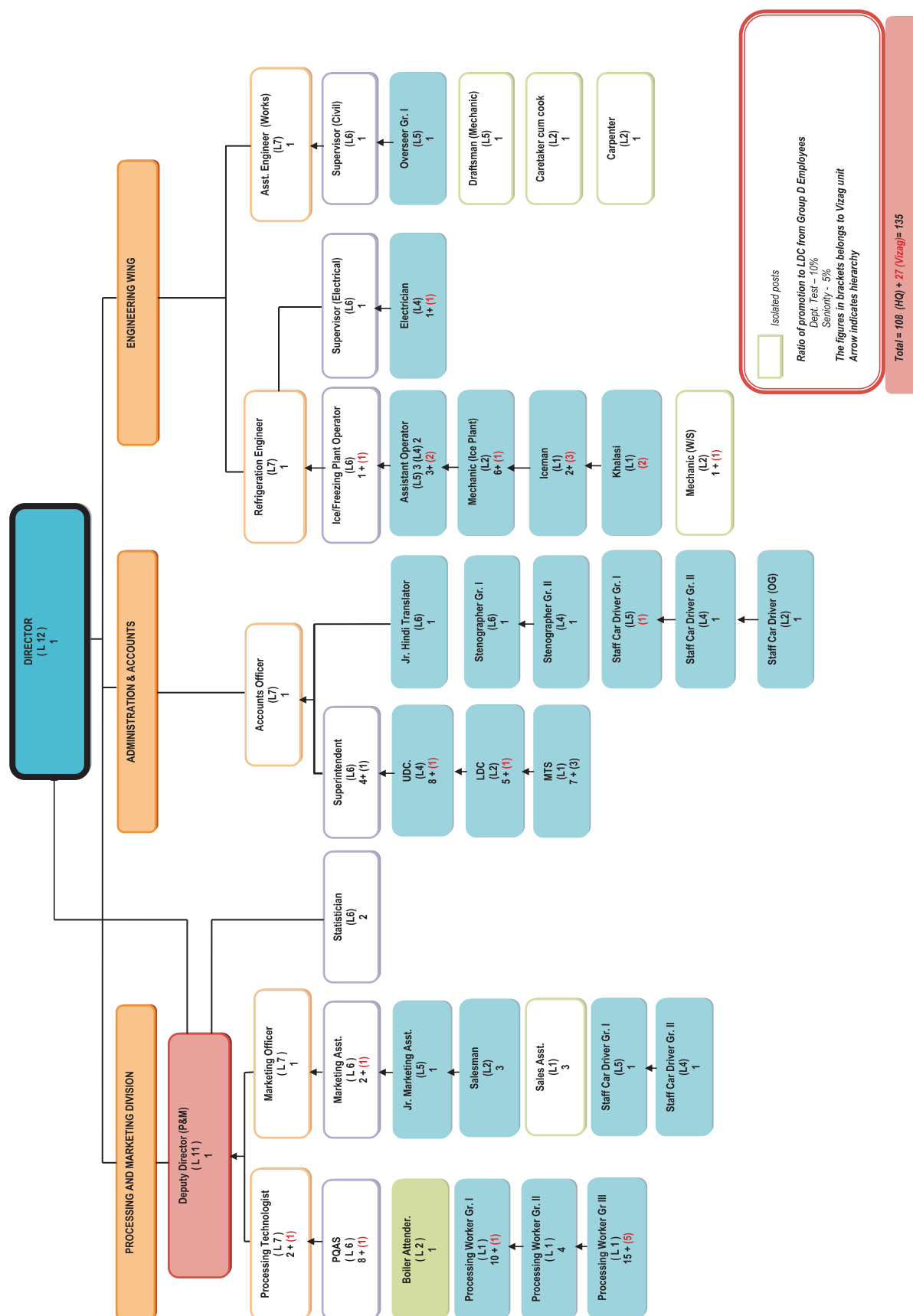
A) Revenue realized and trainings conducted

S.No	Particulars	Achievement (as on 31 st March, 2021)
1.	Raw material processed (Tons)	109.61
2.	Products taken for conversion (Tons)	66.39
3.	Fish products developed (Tons)	139.06
4.	No. of cans Developed	12371
1.	Fish landed/procured from fishermen co-operative societies (Tons)	164.15
2.	Fish products marketed (Tons)	113.31
3.	Revenue generated through test marketing (In Rs. Lakhs)	147.63
1.	No. of trainees trained	328
2.	No. of trainee days for SHGs and students	2721
3.	Revenue realized from training (In Rs. Lakhs)	2.41
Revenue realized from all sources (In Rs. Lakhs)		194.36

B) Training details (FY 2020-21)

S.NO	Particulars	No. of trainees trained		No. of Trainee Days	
		Target	Achievement	Target	Achievement
1	Fisherwomen training	500	51	8,000	153
2	On-the-job training (University/ College Students)		77		644
3	Online training on Fisheries Post Harvest Technology		122		755
4	Training on Microbiological Analysis of Seafood		6		40
5	Training Programme on ISO 22000 FSMS -HACCP and PRP's		25		100
6	Project Work		2		50
7	Refresher Training on HACCP Concept for in-house faculties and apprentice trainees - online mode		14		14
8	VHSE apprenticeship		6		815
9	In-plant training		25		150
Total		500	328	8,000	2,721

ORGANISATIONAL CHART – HQ, KOCHI AND VIZAG



Isolated posts

Ratio of promotion to LDC from Group D Employees

Dept. Test - 10%

Seniority - 5%

The figures in brackets belongs to Vizag unit

Arrow indicates hierarchy

Total = 108 (HQ) + 27 (Vizag) = 135

3.8 Fishery Survey of India

3.8.1 History of FSI

Fishery Survey of India (FSI) was established by the Government of India with the objective of augmenting food supply through development of deep-sea fishing. The main objectives of the Deep Sea Fishing Station (DSFS) were charting of fishing grounds and training of deep sea fishing personnel. Realizing the gigantic task of DSFS, the Government of India had established a number of such stations on both the East and West coasts of India. Accordingly, the Offshore Fishing Station (OFS) was established at Cochin in 1957 and two more stations at Tuticorin and Visakhapatnam in 1958. OFS operated wooden fishing vessels and few steel trawlers. OFS were initially under the direct administrative control of the then Ministry of Food and Agriculture, Government of India and they were brought under the control of DSFS in 1959 along with a station at Mangalore in 1962 but they issues were closed down in 1965 due to operational and other problems. These stations operated 20 fishing vessels including 15 wooden vessels. Due to aging of these vessels, they became unserviceable for survey. Therefore, efforts were made to acquire new vessels indigenously. Later, Matsya Vigyani a 32 m stern trawler was acquired in 1969 from German Democratic Republic under bilateral aid.

As part of an ambitious survey programme in offshore waters off the entire Indian coast, 20 numbers of indigenously built steel trawlers (Meena-series) of 17.5 m OAL were added in 1968. Later, 8 OFSs were established: at Calcutta, Port Blair and Kandla in 1971 and Goa, Mangalore, Madras and Paradeep in 1972 in addition to the already existing DSFS at Bombay and OFSs at Cochin, Tuticorin and Visakhapatnam. The field office of DSFS at Sassoon Dock, Bombay was made as an independent OFS in 1973. The Veraval OFS was established during FY 1976-77. Altogether, 12 bases established with operation of 23 survey vessels. Later, with the reorientation of DSFSs/

OFSs, DSFS was renamed as Exploratory Fisheries Project (EFP) and the OFSs were named as Bases of EFP in 1974. With the declaration of 200 nautical miles of Indian EEZ in 1976, the Government of India started acquiring large vessels to survey the demersal, pelagic and oceanic resources of the Indian EEZ. As a first step in this direction, a 69 m factory trawler, M. T. Murena, was chartered from Poland in 1977 for a period of one year in order to survey demersal and pelagic resources of North-West coast of India. This was followed by acquisition of 9 vessels constructed abroad and in India under various bilateral aid programmes. This fleet includes two combination trawlers (Matsya Nireekshani and Matsya Shikari) from Netherlands in 1979, 2 combination trawlers-cum-purse seiners (Matsya Varshini and Matsya Darshini) from Denmark in 1980, a tuna long-liner-cum-squid jigger (Matsya Sugundhi) from Japan in 1980 and 4 indigenously built vessels. The 4 indigenously built vessels, under Norwegian aid at Goa Shipyard Limited, included a purse-seiner-cum-tuna long liner (Matsya Harini) in 1980, a combination trawler-cum-tuna-long liner (Matsya Jeevan) in 1982 and 2 combination trawler-cum-tuna-long liners (Matsya Shakti and Matsya Vishwa) in 1983. Later a confiscated, Taiwanese vessel was added to the fleet by converting it to Stern trawler (Matsya Mohini) in 1982. With the arrival of this larger survey fleet, the Government of India decided to reorganize and upgrade the organization and add more survey fleet to strengthen infrastructure facilities and scientific manpower. As a result the Exploratory Fisheries Project (EFP) was renamed as the Fishery Survey of India under the administrative control of the Ministry of Agriculture, Department of Animal Husbandry and Dairying. Later, it was recognized as a Science and Technology Institute in the year 1988.

The Institute was earlier put under the administrative control of various Ministries such as Ministry of Food and Agriculture, Ministry of Agriculture-Department of Agriculture and Cooperation, Ministry of Food Processing

Industries and Ministry of Agriculture-Department of Animal Husbandry and Dairying, Ministry of Agriculture and Farmers' Welfare-Department of Animal Husbandry, Dairying and Fisheries and presently the organization is under the control of newly created Ministry of Fisheries, Department of Fisheries, Animal Husbandry and Dairying since 17th June, 2019. Currently, the Institute has a fleet of 11 deep sea survey vessels with state-of-art technology namely 2 multifilament tuna longliners, 2 monofilament tuna longliners and 7 Stern Trawlers. These are being deployed from 7 operational Bases; Mumbai, Mormugao, Cochin, Porbandar on the West coast and Chennai, Visakhapatnam and Port Blair on the East Coast.

The Institute has thus emerged as the nodal fishery Institute in India with the primary responsibility of survey and assessment of fishery resources in the Indian Exclusive Economic Zone (EEZ) and adjoining areas for promoting sustainable exploitation and management of the marine fishery resources. Since its inception, it has been generating vital geo-referred information for sustainably harnessing Marine Fishery resources. Besides implementing the regular survey projects, conducting experimental diversified fishing to identify the resources in different bathymetric zones. FSI has been bestowed with the responsibility of collecting tuna data and submit the same to the Indian Ocean Tuna Commission (IOTC) in the form of India's National Report.

The Institute also imparts training to the students sponsored by the CIFNET, Kochi who are onboard survey vessels on tenure basis. The organization has also been associated with various sister scientific organizations for implementing Inter-Institutional Projects which led to identification of the PFZ with the Satellite Remote Sensing Data and also Oceanographic data.

Marine Engineering Division (MED) is the latest addition to FSI which was transferred from

erstwhile IFP (currently NIFPHATT) in the year 2005 having prime land of 3.8 acres and a jetty. MED can undertake maintenance works including dry-docking / underwater repairs of the deep-sea fishing vessels. The following facilities are available at MED:

- a. Slipway Yard - It has a capacity to dock the vessels up to 150 GRT. The special feature of the slipway is that the vessel can be kept in horizontal position while in the dry-dock
- b. Engineering Workshop- It has the required machinery and equipments like lathe machines, radial drilling machines, plate and pipe bending machines, pneumatic power hammer etc
- c. ILR Servicing Centre- Certified with ISO 9001:2000 and approved by the DG Shipping
- d. Dredging- MED has a grab dredger with a capacity of 40 cubic meter per hour, and also Cutter Suction Dredger
- e. Marine Electronic Section- Marine Electronic Section of MED undertakes the repair and maintenance of electronic equipments like Echo sounders, Auto Pilot, RADAR, GPS, VHF & AIS etc

3.8.2 Mandate of FSI

FSI Mumbai, under the Ministry of Fisheries, Animal Husbandry and Dairying, Department of Fisheries is the nodal agency for carrying out the survey, assessment and monitoring of the marine fishery resources of the Indian EEZ within the framework of its well-defined mandate. The mandate of the Institute is tuned from time to time to match the developmental activities of the Fisheries sector as well as to meet the national and global requirements. The mandate of the institute is given below:

- a. Exploratory surveys, charting of fishing grounds, assessment of fish stocks in the

Indian EEZ and adjoining high seas and research thereof besides the specific surveys on request from the States and the UTs

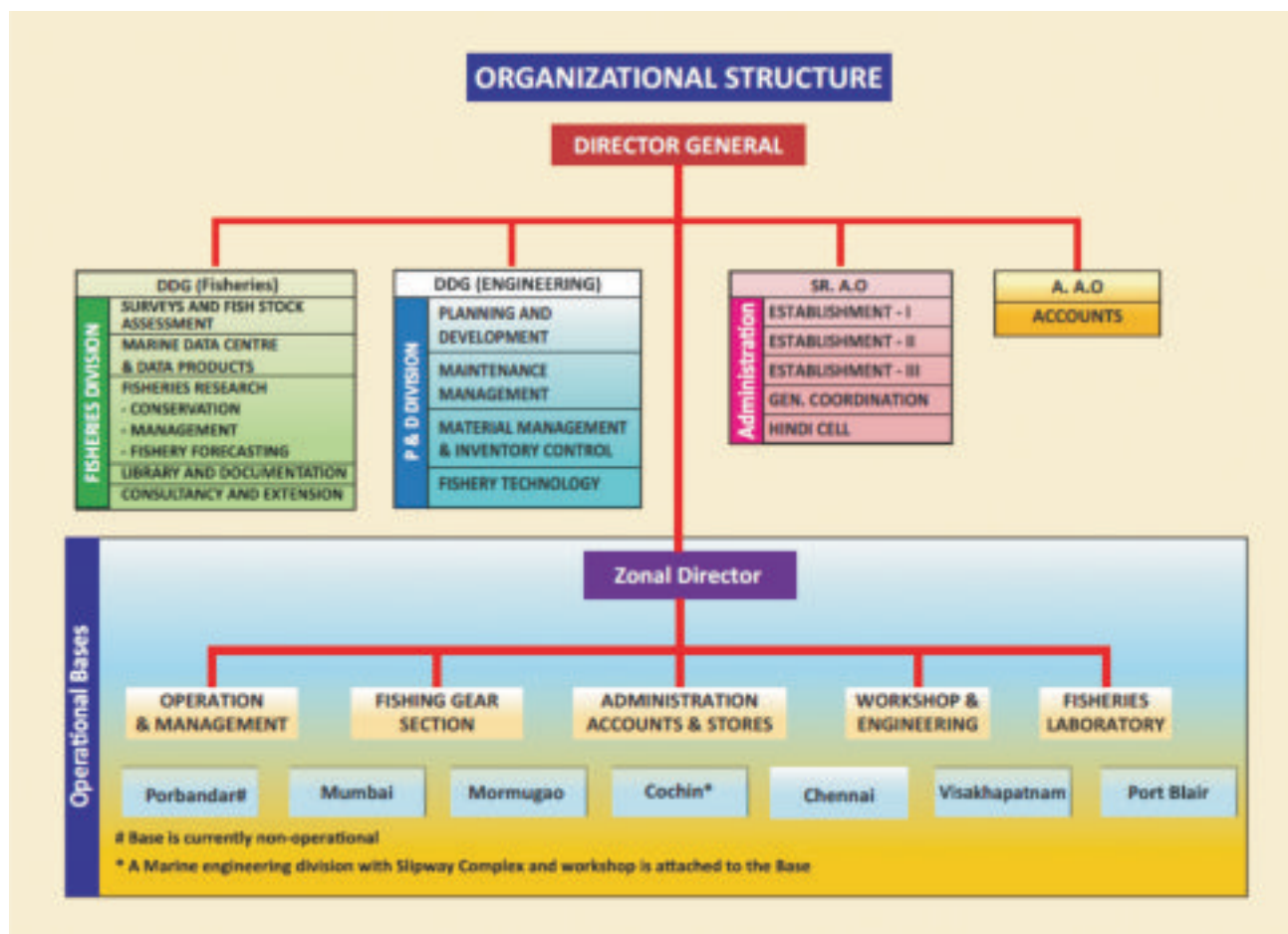
- b. Data collection and periodic re-validation of potential of Fishery resources to advice on fishery management issues enshrined in the national, regional and global conventions and agreements and other associated activities
- c. Monitoring survey of fishery resources in the exploited areas including coral reefs, application of Monitoring, Control and Surveillance (MCS) for regulating fishing activities and promoting Code of Conduct for Responsible Fisheries (CCRF) in the Indian EEZ
- d. Maintaining Data Bank and disseminating information on fishery resources to the end - users and act as an interface between the State/UTs and the Ministry of Agriculture and Farmers' Welfare, Government of India for Marine and Inland fish production and related aspects
- e. Assessment of suitability of fishing gear, accessories and equipment with special reference to the preservation of environment and ecology of marine habitat
- f. Fish stock identification and biodiversity studies including application of genetic tools and techniques
- g. Marine Fisheries forecasting including application of Remote Sensing for the benefit of Artisanal, Mechanized and Industrial sectors

- h. Human Resources Development through practical training of fishing operatives, fishermen, fisheries officials and students

3.8.3 Major Functions of FSI

- a. The major functions of the Institute are conducting exploratory surveys, charting of fishing grounds, assessment of fish stocks in the Indian EEZ and adjoining high seas and research thereof besides the specific surveys on request from the States and UTs, collection of time series geo-referred data through the exploratory surveys by the survey fleet of FSI and dissemination of survey findings/ data to the end users
- b. In order to disseminate the information various extension activities are being carried out by FSI in the form of Regional Workshops, Open houses, Marine Fisheries Exhibitions and direct interaction with the fishing industry, fishermen and other end users. Besides these, dissemination of information on Marine Fishery resources is also being done through various publications such as Resources Information Series, Meena News, Charts, Atlas, Special publications, Occasional papers and Bulletins
- c. Human resources development is done through practical training of fishing operatives, fishermen, fisheries officials and students. For capacity building, the Institute organizes skill development programmes to impart training on tuna long lining technology to the fishermen of respective maritime states.

3.8.4 Organizational Structure of FSI



Staff strength (as on 30th November, 2020)

Group	Category	Sanctioned posts	Filled Posts	Vacant Posts
A	Scientific	25	10	15
	Technical	19	12	07
	Administrative	01	01	-
B	Scientific	34	23	11
	Technical	41	21	20
	Administrative	50	15	35
	Floating	94	24	70
C	Scientific	01	-	01
	Technical	155	67	88
	Administrative	139	77	62
	Floating	184	39	145
Total		743	289 (38.90%)	454 (61.10%)

The sanctioned strength of 743 posts comprises of Scientific, Technical, Administrative and Floating staff. The Director General is the Head of the Department of the Institute as specified in Schedule I of Delegation of Financial Powers Rules, 1978 and is responsible for smooth functioning of all the Divisions of the Institute namely, Scientific, Technical, Administrative and Finance in general.

3.8.5 Major Initiatives and Achievements in FY 2020-21

3.8.5.1 Target and Achievements of Survey vessels

During the period FY 2019-20, the survey vessels collectively achieved 722 fishing days against the target of 1,629 by expending a total fishing effort of 1,755 hours against the target of 4,851 hours. In FY 2020-21, the survey vessels collectively achieved 423 fishing days against the target of 1,512 by expending total fishing effort of 1,527 hours against the target of 4,659. The tuna longliners combined together, operated a total of 1,17,759 hooks (against the target of 3,64,040) and 39,935 hooks (against target of 3,16,170) in FY 19-20 and FY 20-21 respectively.

Expenditure done during FY 2019-20 and FY 2020-21 is as follows:

(Rs. in Lakhs)

Particulars	FY 2019-20	FY 2020-21
Voted	8,216.77	7,243.73

3.8.6 Workshops/Open-house Programmes conducted

As part of the extension activities, each Base of FSI has the mandate to conduct 2 Regional Workshops, 1 Open House and 1 Marine fisheries exhibition. The details of these activities are furnished in the following sections:

I. Mumbai Base:

On the occasion of "World Fisheries Day" a workshop was organized by the Mumbai Base of FSI with the aim to create awareness among the fishers and workers related to fishing. The workshop was organised at peeling shed of M/S Arya Sea Food, Sassoon Dock, Colaba on 21st November, 2020 on "Sustainable Marine Fisheries Resource Management and Safety measures need to be taken while working on board the vessel and landing centres during the pandemic Covid-19 situation".

Shri. D. K. Gulati, Zonal Director presided over the function. Shri. Rajan S. Sawant, Proprietor of M/s Arya Sea Foods, Sassoon Dock, Colaba, Mumbai was the Chief Guest. Dr. Mahesh Kumar Farejiya, Deputy Director General (Engg.) and Shri. S. K. Jaiswal, Director (Engg.), Fishery Survey of India, Headquarters, were the Guests of honour. Around 50 fishermen and workers working on Sassoon Dock, attended the programme. Shri. D. K. Gulati, Zonal Director, Mumbai Base of FSI delivered the keynote address. In his keynote address, he highlighted the need to generate awareness regarding huge catches of juvenile in fisheries, chemical pollution etc. He explained about the eco-friendly fishing practices like long lining, squid jigging, trap fishing etc. A publication was also released on "The standardization of hooking rate for Yellowfin Tuna in the Indian Ocean".

The Chief Guest Shri. Rajan S. Sawant, in his address, appreciated the efforts taken by FSI, Mumbai base for organising the workshop. Dr. Mahesh Kumar Farejiya, Deputy Director General (Engg.), Shri S. K. Jaiswal, Director (Engg.) opined that along with taking personnel precautionary measures the participants also needed to take care of hygienic handling of fish while on board the vessel as well as landing centres. Considering the "World Fisheries Day" Celebration, sanitizers, mask and hand gloves were distributed to all participants

World Fisheries Day Celebration at FSI Mumbai Base



II. Mormugao Base:

On the occasion of World Fisheries Day, Mormugao Base of FSI conducted an awareness workshop at Baina Pamponker and Fishing Canoe Owner's Society, Katem Baina, Vasco-Da- Gama, Goa on 21 November, 2020.

Shri Raju S. Nagpure, Sr. Scientific Assistant welcomed the participants. Dr. H. D. Pradeep, Fisheries Scientist presided over the function. In his keynote address he explained about the importance of World Fisheries day and safety precautionary measures to be taken at sea while onboard on the vessels. Pamphlets in Hindi related to personal hygiene as well as hygienic handling of the fishes were distributed to the participants. The event concluded with the vote of thanks by Shri Puran Singh, Sr. Scientific Assistant. In the event, facemask were also distributed to all the participants.

In the event, "Fishermen Rally" was also organized to spread the message of "Safe and Sustainable Fishing Practices". The Skipper explained the crew members on Sea Safety measures.

The event was also celebrated on board the vessel MFV Sagarika. Around 47 fishermen/ fisherwomen from Co-op Society, Katem Baina, Municipals Fish Market, Baina, Vasco and Crew of the vessel Sagarika participated in the event.

An open house on activities of FSI was held in Mormugao Base of FSI on 4th March, 2021. 34 students and 4 faculty members of M. Sc. Zoology Department from Goa University participated in the event.



World Fisheries Day Celebration at FSI Mormugao Base



III. Cochin Base:

As a part of the World Fisheries Day celebration-2020, Cochin Base organized an awareness workshop for the fishermen, released and distributed newly published "Indian Samudrangalile manjachoora, billfishukal, sraavukal ennivayude matsya bandhana chart (in Malayalam) i.e., "Fishery Charts of tunas, billfishes and sharks of Indian seas" at the Cochin Fisheries Harbour, Thoppumpady on 21st November, 2020. Dr. Sijo P Varghese, Zonal Director briefed on the theme of the World Fisheries Day 2020 and on importance of healthy oceans ecosystems and ensuring sustainable stocks of fisheries in the world. At the Fisheries harbour, a fishermen rally was organized to mark the occasion. The participants, lead by Dr. Sijo P Varghese, Zonal Director and Boat owners and fishermen, wherein, the Scientists of the Base (Dr. S. Ramachandran, Sr. Fisheries Scientist, Shri A. E. Ayoob and Shri N. Unnikrishnan) and buying agents also participated in the rally, holding placards inscribing the slogans on impact of plastic pollution on the Marine environment and its adverse effect on the marine life. More than 100 participants, including actual fishermen of gill net boats, boat owners, representatives of various fishermen associations attended the programme.

In addition, an "Open House programme" was also organized at the Cochin Base in Kochangady, wherein the laboratory, workshop, museum, fishing gear section etc. were opened for the general public. A large gathering, including fishermen, senior citizens and children thronged the venue to get glimpses of rare fishes in the museum, fishing gears and equipments required for fishing and vessel maintenance. The Zonal Director, while addressing the gathering briefed about the significance and theme of the World Fisheries Day. Scientists of the Base explained the gathering about each exhibit.

All the above programmes were organized by strictly following the Covid 19 protocols of the Kerala State Government as well as the Government of India.

World Fisheries Day Celebration at FSI Cochin Base



IV. Chennai Base:

Chennai Base of FSI organized various events such as Workshop, Open house and Marine Fisheries Exhibition on 21st November 2020 as part of the World Fisheries Day. Besides this, an awareness rally was also organized with local fishermen and fisherwomen during the occasion. Zonal Director flagged off the awareness rally from the Base office premises which culminated at the fish market in the Kasimedu fishing harbor campus. Officers and staff of this Base also participated in the rally to spread awareness on marine fisheries and sea safety.

World Fisheries Day Celebration at FSI Chennai Base



V. Visakhapatnam Base:

The Visakhapatnam Base of FSI celebrated World Fisheries Day in association with the Department of Fisheries, Govt. of Andhra Pradesh at Mangamaripeta fishing village, Bheemuni-patnam, Visakhapatnam district, Andhra Pradesh on 21st November, 2020. The celebration started with a Fishermen Rally where the fishermen were holding placards depicting the code of Conduct for Responsible Fisheries (CCRF) slogans in Telugu. The rally was followed by an awareness programme which was organized in the Net Mending Hall of the village where about 50 fishers attended along with their representatives. Smt. N. Sudha, Village Fisheries Assistant, Dept. of Fisheries, Mangamaripeta, Andhra Pradesh and Shri Yellaiah, president, Fishermen Society, Shri Chinna Rao, Youth leader, and Shri Achuta Rao, Village head were present during the event. Dr. A. B. Kar, Fisheries Scientist, Visakhapatnam Base addressed the gathering where he explained about the purpose behind celebrating World Fisheries Day. During the Awareness programme the talks on the topic "Hygienic fish handling" and "Code of Conduct for Responsible Fisheries" were delivered by Shri R. Y. Naidu, Marine Electrician and Shri A. Udaya Kumar, Stenographer, Gr. I. respectively.

The programme came to an end with vote of thanks by Shri M.R.S. Babu, Machinist, FSI, Visakhapatnam Base. Mask and Sanitizers were distributed to the participants with an appeal to extend their support for maintaining the sea health for a better tomorrow.

World Fisheries Day Celebration at FSI Visakhapatnam Base



One day Regional Workshop on “Marine Fishery Resources of the Andhra Pradesh coast and Eco-friendly Fishing Methods” was organized by Visakhapatnam Base of FSI in association with the Department of Fisheries, Government of Andhra Pradesh at Bhavanapadu, Srikakulam District, Andhra Pradesh on 27th March, 2021. Prior to the workshop a fishermen rally was also conducted wherein fishermen displayed placards with slogans on code of conduct for responsible fisheries outside the workshop venue. Shri T. V. Srinivasa Rao, Joint Director of Fisheries, Govt. of Andhra Pradesh, Srikakulam was the Chief Guest on this occasion. The function was presided over by Shri B. Mohan Reddy, Sarpanch, Bhavanapadu while Shri S. Prakash Rao, President, Marine Fishermen Co-operative Society, Bhavanapadu was the Guest of Honour. Shri D. Bhami Reddy, Mechanical Marine Engineer delivered the keynote address. Shri G. V. A. Prasad, Jr. Fisheries Scientist welcomed the gatherings and Shri D. Gopi Krishna, Assistant Director of Fisheries, Palasa proposed the vote of thanks. The inaugural session was followed by a technical session where Shri G. V. A. Prasad, Jr. Fisheries Scientist presented a paper on “Marine Fishery Resources of Andhra Pradesh Coast” and “Code of Conduct for Responsible Fisheries”. Shri D. Bhami Reddy, Mechanical Marine Engineer presented a paper on “Safety at Sea” and Shri R. Y. Naidu, Marine Electrician presented paper on “Hygienic Handling of Fishes”. During the workshop an exhibition was also organized wherein, charts on fishery resources, blow-up photographs of fishes, etc. and eco-friendly fishing gears were displayed.



VI. Port Blair Base:

The Port Blair Base of FSI organized an Open House to on board the vessel MFV Blue Marlin at Junglighat jetty, Port Blair on 20th November, 2020 to celebrate World Fisheries Day 2020. The programme was inaugurated by Ms. Vedita Reddy, IAS, Secretary (Fisheries) in presence of Dr. Utpal Kumar Sar, Director of Fisheries, Andaman and Nicobar Administration and Shri Dharamvir Singh, Mechanical Marine Engineer, FSI, Port Blair Base. Around 50 progressive fishermen, stakeholders and entrepreneurs visited the vessels MFV Blue Marlin and were familiarised with the advanced mechanized fishing vessel.

Various fishing gears and accessories, navigational, engineering and oceanographic equipments were displayed and demonstrated during the occasion. Shri A. P. Udayappan, Skipper MFV Blue Marlin explained about the GPS, RADAR, SONAR, Communication systems used in navigation and management of fishing operation to the gathering. Shri Nsashad M. Sr. Scientific

Assistant briefed the gathering about the use of hydrographic winch and importance of thermocline depth in tuna fishing. Various aspects on safety at sea and Code of Conduct for Responsible Fisheries were explained to fishermen and other participants.

Ms. Vedita Reddy, IAS Secretary appreciated the efforts taken by the FSI staff Port Blair for organizing open house for the benefit of the fishermen community and also emphasized to impart training on long lining operation and Sashimi grade tuna preparation for the local fishermen. The Secretary (Fisheries), Andaman and Nicobar Administration lauded FSI Port Blair Base for their efforts.

About 100 fishermen, stakeholders, entrepreneurs and fishery officials attended the programme and came to an end by the concluding remarks on the PMMSY by Shri Abdul Salam, Assistant Director of Fisheries, Andaman and Nicobar Administration.

3.8.7 Review of Operational and Scientific Activities (ROSA) meeting

Review of Operational and Scientific Activities (ROSA) of FSI is carried out regularly in two phases, i.e. half-yearly and annually. The review committee functions under the chairmanship of the Director General with Deputy Director General (Fisheries) as the member convener. The Officers-in-Charge of the bases who are scientists along with the engineering officers participate in the review meeting. During the meeting, vessel wise qualitative and quantitative performances were reviewed and the shortcoming in the implementation of the survey programme was discussed.

The annual ROSA meeting was initially scheduled to be held during 16th to 17th April, 2020 at Cochin Base but it could not be conducted due to Covid-19 pandemic situation and lock down declared across the country. After Unlock 2.0 it was rescheduled for 24th July, 2020 and the meeting was conducted through webinar under

the Chairmanship of Dr. L. Ramalingam, Director General (i/c), Dr. M. K. Farejiya, Dy. Director General (Engg.) and all Base-in-Charges along with the scientists/ engineers .

The annual Review of Operational and Scientific Activities (ROSA) meeting 2020-21 of Fishery Survey of India was held at Visakhapatnam Base of FSI on 18th to 19th March, 2021. The meeting was held under the Chairmanship of Dr. L. Ramalingam, Deputy Director General (Fy)/ Director General (IC) with the participation of Scientists and Engineers from headquarter and all the Bases of FSI. Dr. Paul Pandian, FDC from the Ministry, New Delhi also took part in the meeting via video conferencing.



3.8.8 Consultative Committee meeting

FSI has a two- tier consultative mechanism for advising the Institute on programme formulation, implementation and review of the activities. The advisory body attached to the Headquarters has representation from the Administrative Ministry, National Research Institutes, DG Shipping, the Indian Fishery Industry and Mumbai University. The consultative groups attached to the FSI bases are chaired by the Commissioners/ Directors of fisheries of the respective State Governments and

have members from the local units of fisheries, R & D Institutes, Mercantile marine department, mechanized boat operator's association, fishermen cooperative societies, etc. The consultative mechanism provides an effective forum for direct dialogue and interaction with the user communities of fishery resources data which enables the Institute to formulate its survey activities orienting to the information demands at regional and national level. The groups also formulate the annual survey programme of the vessels for the respective years which will be placed before the consultative committee for final approval.

17th Consultative Group meeting of Mumbai Base of FSI was held at Office of Commissioner of Fisheries, Govt. of Maharashtra on 16th March, 2021. Dr. L. Ramalingam, Deputy Director General (Fy)/ Director General (IC) along with Shri Ashok S. Kadam, Fisheries Scientist and Shri Rahulkumar B. Tailor, Sr. Scientific Assistant attended the above meeting.



3.8.9 Survey Programme

The survey programme presents the different projects envisaged for the fishing fleet, base-wise

targets and achievements and fleet maintenance. This survey programme would fulfil the data needs of the fishermen, fishing industry, planners and also render the necessary support for fisheries development, management and conservation. The survey programme also has the provision for imparting training and demonstration of modern fishing equipments and fishing techniques for the benefit of the fishermen. The survey programme emphasized on the issues such as eco-friendly, resource specific fishing gears, mesh selectivity studies, etc. as per the Code of Conduct for Responsible Fisheries (CCRF). After the approval of the survey programme by the main consultative committee of the FSI (HQs), the survey programme is published for implementation.

3.8.10 Usage of Fishery Resources Survey Data and Publications

a. The time series geo-referred data of marine fisheries resources collected through the exploratory surveys by the survey vessels of FSI is being used to estimate the catch composition, abundance and biomass and the same will be published in the Annual Report of the institute

b. Since inception of the Institute FSI has published 33 bulletins, 2 atlases, 3 charts, 11 occasional papers, 8 special publications, 121 seminar/symposium proceedings/reports, a Souvenir, 3 Extension series, National report to IOTC, Meena news (quarterly) and Resource Information Series (quarterly) 34

3.8.11 Other Events organized

A) International Yoga Day

Mumbai and Mormugao Base celebrated "International Yoga Day" on 22nd June, 2020. All the staff members actively participated in the celebration. Social distancing and wearing of mask were also maintained as a precautionary measure.



B) Vigilance Awareness Week

FSI (HQs) observed Vigilance Awareness Week from 27th October to 2nd November, 2020. The other bases of FSI also observed the Vigilance Awareness Week during the same period in their respective places.

C) Swachhata Hi Seva Abhiyan

The officers and staff of Visakhapatnam Base of FSI observed "Swachhata Hi Seva Abhiyan" by undertaking the cleanliness drive at Visakhapatnam fishing harbour from entrance to



jetty no. 5 & 6 and its surrounding areas on 4th February, 2021.



3.8.12 Details of International Assignment/ Trainings/ JV-Co-operation

- a. Online (Virtual) IOTC meeting of the 10th Working Party meeting on Neritic Tunas (10th - WPNT) held on 6-8 July, 2020.
- b. 18th Meeting (online) of the Indian Ocean Tuna Commission (IOTC) Working Party on Billfishes held during 2nd-4th September, 2020.
- c. IOTC Working Party on Ecosystems and Bycatch (WPEB 16) through video conferencing during 07th -10th September, 2020 and presented a paper entitled "Trend in bycatch in the tuna longline fishery in India with reference to the biology of dominant species of pelagic sharks".
- d. Meeting convened by the Joint Secretary (Fy.), Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India for discussion on the Allocation criteria for the 6th session of the Technical Committee on Fixation Criteria of IOTC through video conferencing on 11th September, 2020.
- e. 14th meeting (online) of Working Group for monitoring and review of implementation of IOTC Resolutions held on 11th September, 2020.
- f. 6th session of the IOTC Technical Committee on Allocation Criteria (TCA06)

conducted on Video-conference mode during 15-16th September, 2020.

3.8.13 Visit of the Commissioner of Fisheries to FSI Visakhapatnam Base

A) Visit of the Commissioner of Fisheries to FSI Visakhapatnam Base

Shri K. Kanna Babu, IAS, Commissioner of Fisheries, Govt of Andhra Pradesh along with State Fisheries officials, visited Visakhapatnam Base of FSI on 6th June, 2020. The officials were briefed about the activities of FSI. The Commissioner of Fisheries interacted on various issues on Marine Fish & Fisheries of Andhra Pradesh.





B) Visit of Hon'ble Union Minister Shri Giriraj Singh to Goa and onboard MFV Sagarika

Shri Giriraj Singh, Hon'ble Minister of Fisheries, Animal Husbandry & Dairying, Govt. of India along with Joint Secretary (Fy.) and Assistant Commissioner of Fisheries (Fy.) conducted a meeting with Director General, Fishery Survey of India, Mumbai, Directors of ICAR-CCARI, CSIR-NIO, ESSO-NCPOR and State Fisheries Department on 5th February, 2021 at Rajbhawan, Panaji, Goa. The fisheries scientists were also present in the above meeting.

Hon'ble Union Minister Shri Giriraj Singh visited onboard MFV Sagarika attached to Mormugao Base of FSI berthed at MPT, Goa along with Dr. J. Balaji, Joint Secretary (Marine Fisheries) on 7th February, 2021. The Director General (IC), Dy. Director General (Engg.), Director (Engg.) from FSI Hqs., Mumbai, Fisheries Scientists from Mormugao Base of FSI, Dy. Chairman, MPT, PSD to Chief Minister, Govt. of Goa and other officials from FSI, MPT, CISF, PIB and state were also present during Minister's visit.

Visit to Goa



3.8.14 World Fisheries Day celebration and Release of FSI publications

Globally the World Fisheries Day (WFD), 2020 was celebrated on 21st November, 2020. The Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, New Delhi celebrated the WFD at NASC Complex, New Delhi. The programme was co-ordinated by the National Fisheries Development Board (NFDB), Hyderabad. Shri Pratap Chandra Sarangi, Hon'ble Minister of State, Fisheries, Govt. of India was the Chief Guest and Shri Laxmi Narayan Chaudhary, Hon'ble Minister of Fisheries, Uttar Pradesh was

also present for the event. Dr. Rajeev Ranjan, Secretary, Department of Fisheries, Dr. J. Balaji, Joint Secretary (Marine Fisheries), Shri Sagar Mehra, Joint Secretary (Inland Fisheries & Admin) and Dr. C. Suvarna, Chief Executive, NFDB were also present in the event. Dr. L. Ramalingam, Director General (I/C) and Dr. Vinodkumar Mudumala, Sr. Fisheries Scientist from Fishery Survey of India also participated in the celebration. Five FSI publications were released by the Hon'ble Minister along with the Mission Action Plan – Cold water fisheries and six booklets of NFDB on recent trends of aquaculture. While releasing the FSI publications, Shri Mukesh, Director (Statistics), Department of Fisheries, New Delhi highlighted the contents of each publications of FSI as detailed below:

1. Bulletin No. 33: "Decadal observations of exploratory surveys for ocean tuna and allied resources in the Indian EEZ", wherein FSI has analyzed the geo-referred data for 30 years for tuna and allied resources in the Indian EEZ are presented
2. Extension Series No. 03: The extension activities carried out by FSI for the past five years are presented in the series
3. Special publication No. 07 (Vol. I & II): "Scientific Contributions of Scientists of FSI" were presented in both the volumes
4. Special publication No. 08: "Record of Rare species, new species and first records of the Indian EEZ", wherein the rare specimen, new specimens collected during the exploratory surveys have been presented



Vote of thanks was given by Dr. J. Balaji, Joint Secretary (MF). While thanking all the dignitaries on the dais and off the dais he also congratulated all the awardees and thanked all the participants in the celebration.

3.8.15 Flagging off the Marine Mammal Stock Assessment Project onboard MFV Lavanika

Marine Mammal Stock Assessment programme was launched on 22nd February, 2021 onboard FSI survey/research vessel MFV Lavanika in a flagging off ceremony organized at the FSI-MED Jetty, Kochi. Shri K. S. Srinivas IAS, Chairman, MPEDA, Kochi flagged off the first voyage of FSI vessel identified for the survey and research on marine mammal stocks of the western Indian EEZ. The programme was attended by Dr. A. Gopalakrishnan, Director, CMFRI, Dr. L. Ramalingam, Director General, FSI, Dr. Sijo P. Varghese, Zonal Director, FSI Kochi, Shri A. K. Choudhury, Director, CIFNET, Dr. J. S. Meena, Director, NIFPHATT along with scientists and other technicians. A team of scientists has been regularly participating in marine mammal survey and research that will throw light on the distribution, abundance and migratory patterns of the marine mammals of the Indian EEZ.



Onboard MFV Lavanika



3.8.16 Official Language (Hindi) Implementation

I. Hindi Pakhwada

- a. FSI, HQs, Mumbai and its Base offices observed "Hindi Day" on 14th September, 2020 and "Hindi Fortnight" during 14th–28th September 2020. During the Hindi Fortnight, various competitions were conducted such as Hindi essay writing, Hindi noting & drafting, General Knowledge on Official Language, Antakshari, Hindi Poem recitation, etc. Prizes were distributed to the winners of the competitions during the event.

Hindi Pakhwara celebration



II. Hindi Workshops:

a. FSI HQs:

A one day online 'Hindi Workshop' was organized on 29th September, 2020 to encourage the staff members to work in Hindi. Shri Vinod Kumar Sharma, Asstt. Director, Hindi Teaching Scheme, CBD, Belapur was the subject expert for the event. He deliberated on "Karyalayeen Patrachar me Saralatham Prayog". About 15 staff members participated in the online workshop.

A Hindi workshop was organized on Target and Implementation of Annual Programme 2020-21 on 7th December, 2020. The resource person for the workshop was Dr. Sushil Kumar Sharma, Sadasya Sachiv from Nagar Rajbhasha Karyanwayan Samiti, Rajbhasha, Western Railways, Churchgate, Mumbai. A total of 10 officials participated in the workshop.

A Hindi workshop was organized on "Quarterly Report and Official Language Implementation" on 26th February, 2021. Dr. Sunita Yadav, Retired Dy. Director, Regional Implementation Office (Western Region), Navi Mumbai was the resource person. All the staff members actively participated in the above workshop.



b. Mumbai Base:

Mumbai Base conducted a Hindi workshop on the topic "General Correspondence" on 23rd December, 2020. The resource person for the workshop was Dr. Vinodkumar Sharma, Assistant Director, Hindi Shikshan Yojana, Belapur, Navi Mumbai. All the officers and staff members participated in the above workshop.



A Hindi workshop was organized on the topic "General Correspondence" on 26th February, 2021. Dr. Sunita Yadav, Retired Dy. Director, Regional Implementation Office (Western Region), Navi Mumbai was the resource person. All the officers and staff members actively participated in the above workshop.

c. Mormugao Base:

Mormugao Base conducted a Hindi workshop on "Constitutional Status of Hindi Official Language" on 14th January, 2020 for the benefit of officers and staff members of this base. Shri Rajendra

Singh, Ex. Senior Secretary of MPT and Hindi Officer (Retd.) was the resource person on this occasion. During the event social distancing and wearing of face mask were also maintained as a precautionary measure of Covid -19.



A Hindi workshop on “Means to make Hindi popular in day to day office work” was organized by the Base on 27th March, 2021. Dr. Shubhrata Mishra, Freelance writer (Hindi), Vasco, Goa was the resource person. All the officers and staff of the base actively participated in the workshop.

d. Cochin Base:

Cochin Base of FSI organized an online official language workshop on fish terminology on 29th March, 2021. Smt. Uma E. K., Chief Technical Officer (OL) from CMFRI was the faculty for the workshop. Official Language Implementation Committee (OLIC) meeting was also held on same day.

e. Visakhapatnam Base:

A Hindi Workshop was conducted at Visakhapatnam Base on 24th June, 2020. Shri. Shahnawaz. Jr. Translation Officer, was the resource person on the occasion. He deliberated on importance of Hindi as the official language as well as procedure of official language implementation in Government offices. The officers and staff members of the Base attended the workshop.

One day “Hindi Workshop” was conducted at Visakhapatnam Base on 23rd September, 2020. Shri. Shahnawaz, Jr. Translation Officer of the Base was the resource person on this occasion. He deliberated on Unicode, Google Translator, Unikruti and other day to day official works in Hindi.

Hindi workshops in progress



A Hindi Workshop was conducted by the Base on 29th December, 2020. Dr. Rita Trivedi, Officer-In-Charge, Hindi Teaching Scheme was the resource person on the occasion. She deliberated on "Use of words and other day to day work in Hindi" 15 Officials from different sections of the Base attended the workshop.



Another Hindi workshop was organized by Port Blair Base on 28th September, 2020 at the conference hall of the Base. Shri Subhrajit Das, Stenographer Grade- II delivered lecture on implementation of official language and use of Hindi in day to day activities in the office.



A Hindi workshop was conducted by the Base on 12th March, 2021. Shri Sankar Dora, Professor, Hindi Teaching Scheme, Visakhapatnam was the resource person on this occasion. He delivered a lecture on various aspects of Hindi as official language and also on day to day use of Hindi in Government offices.

f. Port Blair Base:

Hindi Workshop was organized by Port Blair Base on 16th June, 2020 at the conference hall of the Base. Shri K. V. Sathyanad, Sr. Translator, Secretariat Andaman and Nicobar Administration was the resource person and delivered lecture on installation and usage of Hindi fonts in computers.

g. Release of Hindi In-House Magazine

The 8th issue of departmental Hindi publication "Matsyakreethi" of Mormugao Base was released by the "Chief Guest" Shri Rajendra Singh, Ex. Senior Secretary of MPT and Hindi Officer (Retd.) on 14th September, 2020.



3.8.17 Participation in various Regional and National Programme attended

- Webinar on "Aquaculture in Action during Pandemic" organized by Tamil Nadu Dr. J. Jayalalitha Fisheries University, Dr. MGR Fisheries College and Research Institute, Ponneri 19th April, 2020
- Webinar on "Big Data in Marine Science" organized by European Marine Board on 29th April, 2020
- National webinar on "Aquaculture Today" organized by Centre of Excellence in Aquaculture, Kamdhenu University, Ukai, Gujarat held on 2nd May, 2020
- Webinar on "Waste Reduction and the Circular Economy in the Seafood Industry with As do Mar Tuna Case Study" organized by World Sustainability Organization (WSO) on 20th May, 2020
- Five days MOOC (Massive Open Online Course) course on "Entrepreneurship Development" from 14th to 18th May, 2020 organized by Centre of Excellence in Aquaculture, Kamdhenu University, Ukai, Gujarat
- National Webinar on "Paryavaranam 2020" organized by Department of Zoology and Biotechnology under the DBT – Star Status, B. K. Birla College of Arts, Science and Commerce, Kalyan held on 5th June, 2020
- International webinar on "Marine Policy- How to get Published" organized by National Oceanic and Atmospheric Administration (NOAA) Central Library on 6th June, 2020
- Webinar on "Launch of The State of the World Fisheries and Aquaculture" organized by Food and Agriculture Organization of the United Nations (FAO) on 8th June, 2020
- National webinar on "Voice of youth for Oceans" on 8th June, 2020 organized by Department of Aquatic Biology and Fisheries, University of Kerala
- Tender Committee meeting on 10th June, 2020 & 19th June, 2020 at National Institute of Fisheries Post Harvest Technology and Training, Visakhapatnam
- Expert Committee meeting held on 19th June, 2020 at the conference hall of ICAR-CIFT, Visakhapatnam
- National webinar on "Drug-Re-purposing against Covid-19" on 21st June, 2020 organized by Department of Zoology, Nehru Gram Bharti (Deemed to be University), Prayagraj, U.P.
- Tender Committee at National Institute of Fisheries Post Harvest Technology and Training, Visakhapatnam on 3rd July, 2020
- National webinar on "Strategies for enhancing fish production through sustainable aquaculture interventions" to celebrate National Fish Farmer Day organized by College of Fisheries (GADVASU), Ludhiana, Punjab on 10th July, 2020.
- National webinar on "Fisheries and Aquaculture Industry in COVID Times: Challenges and a Roadmap Ahead" organized by ASSOCHAM on 16th July, 2020
- National Webinar with Panel Discussion on "Post COVID Fishery Economics in Indian milieu" organized by D. B. J. College, Chiplun, Dist. Ratnagiri (MS) in Association with Mumbai University's Vishwabhashan Bharatrantra Dr. Babasaheb Ambedkar College, Ambadave, Mandangad, Dist. Ratanagiri (MS) and Vijayalakshmi Vishwanath Dalvie College, NH-66, Talere, Kankavali, Dist. Sindhudurg (MS) on 22nd July, 2020

- Webinar on "Human Centric Innovations" organized by ICAR-Central Institute of Fisheries Education, Mumbai on 24th July, 2020
- Review of Performance of Fisheries Institutions namely, FSI, CIFNET, CICEF and NIFPHATT during 22nd to 23rd July, 2020
- Annual ROSA meeting on 24th July, 2020
- Webinar on "Human Centric Innovations" organized by ICAR-Central Institute of Fisheries Education (CIFE), Mumbai on 24th July, 2020
- National Webinar on "Conservation of Biodiversity and Wildlife" organized by the PG and Research Department of Zoology, Arignar Anna Govt. Arts College – Cheyyar, Tamilnadu on 2nd August, 2020
- Seminar on "New Normal in fisheries sector Amidst and Post Covid-19 in India" organized by Dr. J. Jayalalithaa Fisheries University, Institute of Fisheries Post-Graduate studies, Chennai from 31st July to 2nd August, 2020
- National Conference on "Challenges and Opportunities in Applied Zoology" organized by Department of Zoology, School of applied science, Centurion University of Technology and Management, Odisha on 8th August, 2020
- Online Inception workshop on "Assessment of Marine Mammals stock and Bycatch of Marine Mammals and Sea Turtles" organized by CMFRI on 12th August, 2020
- National Webinar on "Landslide Disasters in Kerala" organized by the School of Earth System Sciences, University of Kerala, Thiruvananthapuram held on 13th August, 2020
- Workshop on "Aquaculture and Fisheries: Development and Sustainability" organized by Guru Nanak College (Autonomous), PG & Research Department of Advanced Zoology and Biotechnology from 13th to 19th August, 2020
- Webinar "Meet the Expert: Let us discuss Biodiversity understanding Insect Diversity- praying Mantids" organised by Zoological survey of India, Estuarine Biology Regional Centre, Odisha on 18th August, 2020
- Video Conference "Examination of veracity of various tracking/communication devices available and developed being used by different category of marine fishing vessels" on 18th August, 2020
- Webinar on "Socio-Economical Challenges of Costal people of Kerala during Covid-19" conducted by Dept. of Environmental Science, University of Kerala on 22nd August, 2020 Silver Jubilee Celebration (2020-21)
- National Webinar on "Advanced Molecular Diagnostic Techniques" organized by T. John College of Pharmacy, Bangalore on 24th August, 2020
- Webinar "Meet the Expert: Let us discuss Biodiversity using GIS and Remote sensing in Faunal Studies" organized by Zoological survey of India, Estuarine Biology Regional Centre, Odisha on 27th August, 2020
- International workshop on recent trends in "Advancement in Aquaculture and Fisheries" organized by Guru Nanak Centre for research, Chennai from 3rd to 10th September, 2020

- Webinar on "Amazing world of coastal marine fishes: Diversity and distribution in India" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 4th September, 2020
- Discussion on fish stock assessment methodologies organized by the Ministry of Fisheries, Animal Husbandry and Fisheries on 10th September, 2020
- National webinar on "Amazing World of coastal Marine Fishes: Diversity and Distribution in India" organized by Zoological Survey of India, Odisha on 4th September, 2020
- Webinar on "Mammalian Diversity & Their Conservation in India" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 11th September, 2020
- National Webinar on "Fishery Ressources and Future Fisheries" organized by the PG and Research Department of Zoology, Arignar Anna Govt. Arts College, Cheyyar, Tamilnadu on 13th September, 2020
- Virtual Workshop on Revision & Rationalization of QPS & Circular on Mari culture segment by ASCI on 18th September, 2020
- Webinar on "Parasitic Hymenoptera of India – An overview" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 18th September, 2020
- Webinar on "Perspective on fish taxonomy" organized by the Rajkul Milani Mahavidyalaya, West Bengal on 20th September, 2020
- Webinar on "A Journey to the top of the Globe: ARCTIC FAUNA" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 25th September, 2020
- Lecture on "Commercially Important Ornamental Fishes and their propagation" organized by Department of Zoology, School of Applied Sciences, Centurion University of Technology and Management, Odisha, from 25th to 26th September, 2020
- National webinar on "The Scope and development of research activity at college level" organized by the S.S.B. College, Egra, West Bengal from 28th to 29th September, 2020
- Series of webinars on teachings of "The Mahatma on agriculture, rural development, poverty alleviation and women empowerment" conducted by ICAR-NIASM, Baramati, Maharashtra dated from 25th to 29th September, 2020
- Webinar on "Scorpions, the incredible Arachnids" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 1st October, 2020
- Webinar on "Wildlife Conservation: Contributions from Odisha to National Projects" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 9th October, 2020
- Webinar on "Taxidermy as a Science towards Preservation of our Animal Wealth" organized by the Zoological Survey of India, EBRC, Gopalpur-on-Sea, Odisha on 16th October, 2020
- Webinar on "Nutrition and Health" organized by the Department of Physical Education, Mangalore University on 27th October, 2020
- Virtual meeting on "The National Plan of Action for Conservation and Management of Sharks (NPOA- Sharks)" on 3rd November, 2020

- Online ITCO ocean course on “Fishery Oceanography for future professionals (Level: Basic, Batch - 1) organised by INCOIS, Hyderabad from 16th to 20th November, 2020
- Dr. H. D. Pradeep, Fisheries Scientist from Mormugao Base of FSI attended the 1st inspection of the Expert committee for zonation and demarcation of marine waters for Mariculture (North Goa) on 23.11.2020 at Directorate of Fisheries, Dept. of Fisheries, Govt. of Goa
- Technical bid evaluation meeting of e-Tender service provider for Installation, Operation and Maintenance of Filtration unit of Taraporevala Aquarium on 24th November, 2020
- Virtual meeting on “Curb on Unsustainable marine fish capture practices and sustainable fisheries” in Maharashtra organized by ICAR – CIFE, Mumbai on 1st December, 2020
- Virtual 16th IOTC meeting of the working party on 'Data Collection and Statistics' from 30th November to 3rd December, 2020
- Online training programme on “Chief Information Security Officer's Deep Dive Training” organized by National E-Governance Division NEGD, Department Of Electronics And Information Technology under Cyber Surakshit Bharat initiative from 30th November to 5th December, 2020
- Virtual 23rd Scientific Committee meeting of the IOTC from 7th to 11th December, 2020
- Meeting of the Committee for re-drafting the Marine Fisheries (Regulation and Management) Bill, 2020 on 17th and 23rd December, 2020
- Stage inspection of fishing boats (7 nos.) for conversion of Trawlers in Resource specific deep-sea fishing vessels along with other committee members (CIFNET & NFDB) at Kakinada fishing harbor on 17th December, 2020
- Stakeholders' meeting on Matsya Dushkal (Fish Famine) held in Mantralaya, under the Chairmanship of Chief Secretary, Govt. of Maharashtra on 11th January, 2021
- Meeting with Station Director, All India Radio, Visakhapatnam regarding modalities to disseminate survey findings of marine fisheries to the end users on All India Radio on 18th January, 2021
- Meeting with the General Manager (SR) and Dy. General Manager (SCR), M/s Hindustan Shipyard Limited, Visakhapatnam on allotment of dock slot for the vessel Matsya Darshini during first week of March 2021 and procurement of underwater propeller spare parts and Gensets on 19th January, 2021
- Online training programme on “Preparation of Value-added Fish Products for Boosting Fishpreneurship” organized by CIFT, Mumbai from 20th to 21st January, 2021
- Virtual meeting on Marine Mammal Protection Act (MMPA) to discuss about the plan of action on MMPA study on 29th January, 2021
- ASEAN India Hackathon held from 1st to 3rd February, 2021
- Dr. Mahesh Kumar Farejiya, Dy. Director General (Engg.) and Shri S. K. Jaiswal, Director (Engg.) from FSI Hqs. proceeded on tour to Goa to attend a meeting with M/s Goa Shipyard officials with regard to dry docking repairs of MFV Sagarika and MFV Yellow Fin during 4th to 5th February, 2021.

- Webinar on "Online Training Programme on Fishing Crafts and Gears" in Hindi organized by CIFT, Mumbai on 5th February, 2021
- Online meeting on the organizational activities/ contribution of the Central Government Fisheries Institutes towards the fishing industry and discussion on renovation of fishing harbor, Visakhapatnam on 16th February, 2021
- Meeting on 'Decommissioning of Vessel MFV Saraswati', ICAR-CIFE, Mumbai on 17th February, 2021
- Meeting to discuss the plan of action of Collaborative project of MPEDA with ICAR-CMFRI & FSI on the Marine Mammal Stock Assessment Study at CMFRI, Kochi
- National Conference on "Deep Sea Bio-resources in Indian Ocean" organized by Zoological Survey of India, Port Blair from 25th to 26th February, 2021. Scientific paper presented on "Deep Sea Fishery Resources of EEZ"
- Online meeting on the 58th National Maritime Day celebration Committee convened by MMD on 25th March, 2021

3.9 Central Institute of Coastal Engineering for Fishery, Bengaluru

3.9.1 History of CICEF

Central Institute of Coastal Engineering for Fishery (CICEF) was established as Pre-investment Survey of Fishing Harbours (PISFH) by the Ministry of Agriculture, Government of India in collaboration with Food and Agriculture Organisation of the United Nations (FAO/UN). The primary objective of establishing the Institute was to carry out engineering and economic investigations and prepare techno-economic feasibility reports for

the development of fishery harbours at suitable sites along the Indian coast to provide fishery harbour facilities to Mechanized Fishing Vessels (MFVs).

3.9.2 Organization

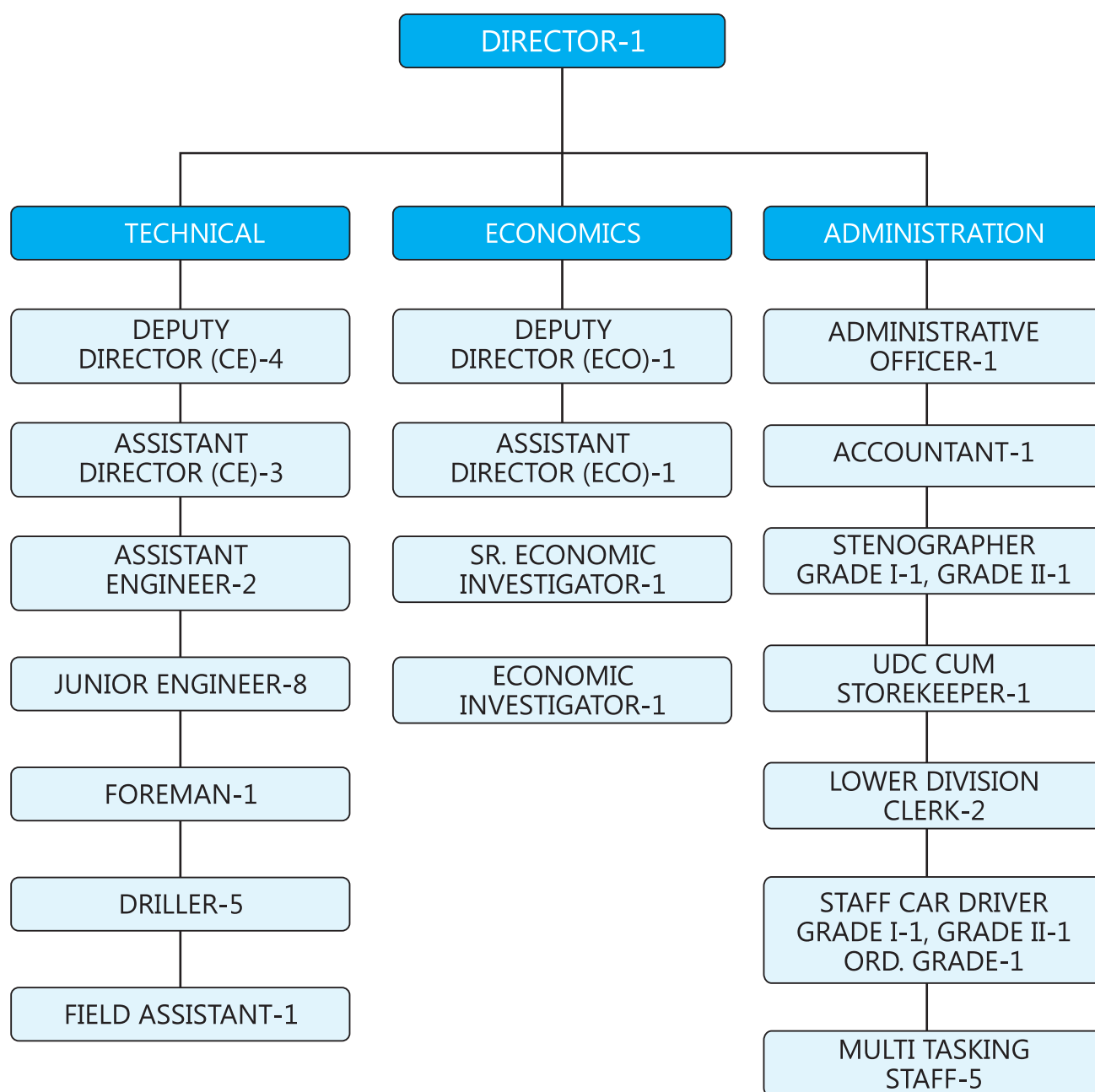
The Institute is headed by the Director and the total sanctioned strength of officers and staff is 47 comprising technical and administrative personnel. The break-up of the posts is as follows:

Group	Non-Plan	
	Technical	Non-Technical
A	10	-
B (Gazetted)	03	01
B (Non-Gazetted)	09	02
C	07	15
Total	29	18

An inter-disciplinary team comprising Engineers and Economists who have specialized knowledge and vast experience on field, in conducting necessary pre-investment studies to identify sites for development of fishery harbours, fish landing centres and brackish water shrimp farms, preparation of techno-economic feasibility reports, detailed construction plans for the projects and other supporting facilities are on roll of the Institute.



The Organization Chart of the Institute is as shown below.



3.9.3 Mandate of CICEF

The Objectives of the Institute with respect to development of fishery harbours/fish landing centres and coastal aquaculture farms are as below:

- To carry out reconnaissance surveys/pre-feasibility studies to identify priority sites, follow it up by detailed engineering and economic investigations and prepare techno-economic feasibility reports
- To prepare preliminary construction plans and supporting facilities etc
- To give technical advice on engineering and economic aspects wherever required
- To monitor the progress of construction sanctioned under the Centrally Sponsored Scheme in association with the Ministry of Fisheries, Animal Husbandry and Dairying

3.9.4 Achievements of CICEF

The Institute, till end of March, 2021 has carried out 104 site investigations and prepared project reports for 121 sites (including revised) for the development of Fishery Harbours/Fish Landing Centres.

During UNDP/FAO assistance, four pilot brackish water shrimp farms and one shrimp seed hatchery were developed. Under the World Bank assisted Shrimp Culture Project, the Institute carried out survey and sub-soil Investigations at 13 sites covering a total area of 9,640 ha. Techno-economic feasibility reports were prepared in respect of 10 sites covering a total productive pond area of 3,826 ha. Trial culture operations were carried out at Digba, Canning and Dighirpar in West Bengal and Bhairavapalem in Andhra Pradesh.

3.9.5 Achievements in FY 2020-21

3.9.5.1 Pre-feasibility studies

Issued Pre-feasibility Report for development of fish landing centres at the following fishery sites in the district of Raigad of Maharashtra.

Sl No.	Fish Landing Centre
1	Ekdara
2	Theronda
3	Varsoli
4	Navedar Navgaon
5	Vashini Dadar
6	Kelvane
7	Aware
8	Dighode
9	Surkichipada
10	Danda
11	Mora
12	Hanuman Koliwada
13	Gavan
14	Nhava
15	Kopar Shivaji Nagar
16	Morave
17	Ulwe-Moha

3.9.5.2 Techno Economic Feasibility Report

Issued Techno-Economic Feasibility Report (TEFR) for the development of Stage II fishery harbour at Nuagarh (Astaranga) in Odisha. The proposed integrated fishery harbour will provide landing, berthing and related shore-based facilities to 1,960 vessels comprising 1,628 nos. of 9 metre motorised craft/traditional craft, 64 nos. of 12 metre purse seiners and 268 nos. of 15 metre trawlers. The cost of the project has been estimated at Rs.8,286 Lakhs. The average annual landings of fish and prawns at Astarang fishery harbour would amount to 55,876 tonnes valued at Rs. 496.36 Crores at the level of boat side sales. The harbour provides employment opportunity to 14,668 persons including 7,668 sea-going fishermen in 1,960 fishing vessels and about 7,000 persons on shore-based and other fishery related activities and market establishments.



Nuagarh (Astaranga) fishery harbour layout plan

3.9.5.3 Project Appraisals

- a. Scrutiny of Techno Economic Feasibility Report for the development of fishery harbour at Navabandar in Junagadh district of Gujarat for consideration under FIDF funding. The proposed design fleet size of the fishery harbour is 1,000 nos. comprising of 200 nos. of 18 metre trawler, 580 nos. of 14.6 metre Gill netters and 220 nos. of 10 metre IBM/OBM boats. The project involves total estimated cost of Rs. 29,585 Lakhs yielding an Internal Rate of Return (IRR) of 11-12%
- b. Scrutiny of Techno Economic Feasibility Report for the development of fishery harbour at Madhwad in Junagadh district of Gujarat for consideration under FIDF funding. The proposed design fleet size of the fishery harbour is 569 nos. comprising of 136 nos. of 18metre trawler, 10 nos. of 15 metre Gill netters and 423 nos. of 10 metre FRP boats. The project involves total estimated cost of Rs. 17,507 Lakhs yielding an Internal Rate of Return (IRR) of 12–13%
- c. Scrutiny of Techno Economic Feasibility Report for the development of Stage II fishery harbour at Veraval in Junagadh district of Gujarat for consideration under FIDF funding. The proposed integrated design fleet size of the fishery harbour is 4,500 nos. comprising of 1,600 nos. of 16 metre trawler, 1,000 nos. of 15 metre trawler and 1,900 nos. of 10 metre FRP boats. The project involves total estimated cost of Rs.25929 Lakhs yielding an Internal Rate of Return (IRR) of 12–13%

- d. Scrutiny of Techno Economic Feasibility Report for the development of Stage II fishery harbour at Porbandar in Porbandar district of Gujarat for consideration under FIDF funding. The proposed integrated design fleet size of the fishery harbour is 4,500 nos. comprising of 1,750 nos. of 18 metre trawler, 850 nos. of 15 metre trawler and 1,900 nos. of 10 metre FRP boats. The project involves total estimated cost of Rs.39,264 Lakhs yielding an Internal Rate of Return (IRR) of 21 – 22%
- e. Scrutiny of Techno Economic Feasibility Report for the development of fishery harbour at Sutrapada in Gir Somnath district of Gujarat for consideration under FIDF funding. The proposed design fleet size of the fishery harbour is 1,200 nos. comprising of 400 nos. of 18 metre trawler, 300 nos. of 15 metre trawler and 500 nos. of 10 metre FRP boats. The project involves total estimated cost of Rs. 23,188 Lakhs yielding an Internal Rate of Return (IRR) of 11 – 12%
- f. Scrutiny of Techno Economic Feasibility Report for the development of fishery harbour at Arcottuthurai in Nagapattinam district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fishery harbour is 440 nos. comprising of 64 nos. of 17 metre trawler and 376 nos. of 10 metre FRP boats. The project involves total estimated cost of Rs. 150 Crores yielding an Internal Rate of Return (IRR) of 27%
- g. Scrutiny of Techno Economic Feasibility Report for the development of fishery harbour at Kazhuvveli Waters in Azharkuppam of Villupuram district and Alamparaikuppam in Kancheepuram district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fishery harbour is 820 nos. comprising of 60 nos. of 20 metre trawler, 80 nos. of 17 metre trawler, 80 nos. of 15 metre trawler and 600 nos. of 10 metre FRP boats. The project involves total estimated cost of Rs. 235 Crores yielding an Internal Rate of Return (IRR) of 27%
- h. Scrutiny of Techno Economic Feasibility Report for the development of fish landing centre at Mandapam (North) in Ramanathapuram district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 275 nos. comprising of 203 nos. of Mechanised Fishing Vessels and 72 nos. of country boats. The project involves total estimated cost of Rs. 1,000 Lakhs
- i. Scrutiny of Techno Economic Feasibility Report for the development of fish landing centre at Mandapam (South) in Ramanathapuram district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 175 nos. comprising of 125 nos. of Mechanised Fishing Vessels and 50 nos. of country boats. The project involves total estimated cost of Rs.10 Crores
- j. Scrutiny of Techno Economic Feasibility Report for the development of fish landing centre at Aruvikarai in Tirunelveli district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 338 nos. of OBM boats. The project involves total estimated cost of Rs. 10 Crores
- k. Scrutiny of proposal for the extension of T-jetty of fish landing centre at Tharuvaikulam in Thoothukudi district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 298 nos. comprising of 65 nos. of Mechanised Fishing Vessels and 233 nos. of country boats. The project involves total estimated cost of Rs. 10 Crores

- l. Scrutiny of Techno Economic Feasibility Report for the development of fish landing centre at Kottaipattinam in Pudukkottai district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 370 nos. comprising of 250 nos. of Mechanised Fishing Vessels and 120 nos. FRP boats. The project involves total estimated cost of Rs.305 Lakhs
- m. Scrutiny of Techno Economic Feasibility Report for the development of fish landing centre at Vadakkamapattinam in Pudukkottai district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 120 nos. of FRP boats. The project involves total estimated cost of Rs. 155 Lakhs
- n. Scrutiny of Techno Economic Feasibility Report for the development of fish landing centre at Pudukudi in Pudukkottai district of Tamil Nadu for consideration under FIDF funding. The proposed design fleet size of the fish landing centre is 90 nos. of FRP boats. The project involves total estimated cost of Rs. 140 Lakhs
- o. Scrutiny of proposal for creation of additional infrastructure facilities at the existing fishery harbour at Thengapattinam in Nagercoil district of Tamil Nadu for consideration under FIDF funding. The proposed facilities include extension of quays, fish auction hall, sewage treatment plant, RO plant, cold & chill room, bridge, dredging, reclamation, link road, processing plant etc. at a cost of Rs. 60 Crores
- p. Scrutiny of detailed cost estimates of the proposed development of Sorana fish landing centre in Khurda district of Odisha for consideration under FIDF funding
- q. Scrutiny of Techno Economic Feasibility Report for the development of fishery harbour at Nadabhanga Mousa at Namkhana in South 24 Paraganas district of West Bengal for consideration under FIDF funding. The proposed design fleet size of the fishery harbour is 300 nos. of 17 metre gill netter boats. The project involves total estimated cost of Rs. 5,686.50 Lakhs yielding an Internal Rate of Return (IRR) of 17%
- r. Scrutinized and submitted comments on Renovation and up-gradation proposal of Thoppumpady fishery harbour under Cochin Port Trust to be funded under PMMSY.

3.9.6 Budget Expenditure during FY 2020-21

Against Budget Estimate (BE) of Rs. 556.75 Lakhs and Revised Estimate (RE) of Rs. 396.00 Lakhs an expenditure of Rs. 380.36 Lakhs have been incurred during the FY 2020-21.

3.10 Coastal Aquaculture Authority

3.10.1 History of CAA

Coastal Aquaculture Authority (CAA) was established under the Coastal Aquaculture Authority Act, 2005 vide Gazette Notification dated 22nd December 2005. The aims and objective of the Authority are to regulate 'coastal aquaculture' activities in the areas notified by the Central Government as 'coastal areas' and for matters connected therewith or incidental thereto. The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, registration of aquaculture farms and hatcheries, to inspect them to ascertain their environmental impact, remove or demolish coastal aquaculture establishments which cause pollution, fixing standards for coastal aquaculture inputs in order to facilitate environmentally responsible and socially acceptable coastal aquaculture.

3.10.2 Mandate and function of CAA

CAA was established for regulating activities connected with coastal aquaculture in coastal areas. The main objective of the Authority is to promote sustainable development without causing damage to the coastal environment by following responsible coastal aquaculture practices and to protect the livelihood of various stakeholders living in the coastal area.

The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, inspection of farms and hatcheries for any candidate species to ascertain their environmental impact, registration of aquaculture farms and hatcheries, removal or demolition of coastal aquaculture farms which cause pollution, fixing standards for all coastal aquaculture inputs (namely, seed, feed, growth supplements, chemicals, etc.) used in coastal aquaculture and for the overall monitoring and regulation of coastal aquaculture activities in the country. The major responsibility of Coastal Aquaculture Authority towards achieving these goals is to ensure registration of all kinds of coastal, brackish and saline aquaculture farms and hatcheries engaged or to be engaged in seed production of cultivable species including shrimps, crabs, molluscs, fishes, etc., in the country within the notified area. It is mandatory for all persons carrying out coastal aquaculture to register their farms with CAA as per the procedures laid down in the Coastal Aquaculture Authority Act and Rules. Registration is valid for a period of five years, which can be renewed from time to time for a like period. A number of measures such as organizing awareness camps, publicity through newspapers etc. have been initiated by the Authority to ensure registration of all eligible coastal aquaculture farms.

3.10.3 Organisation

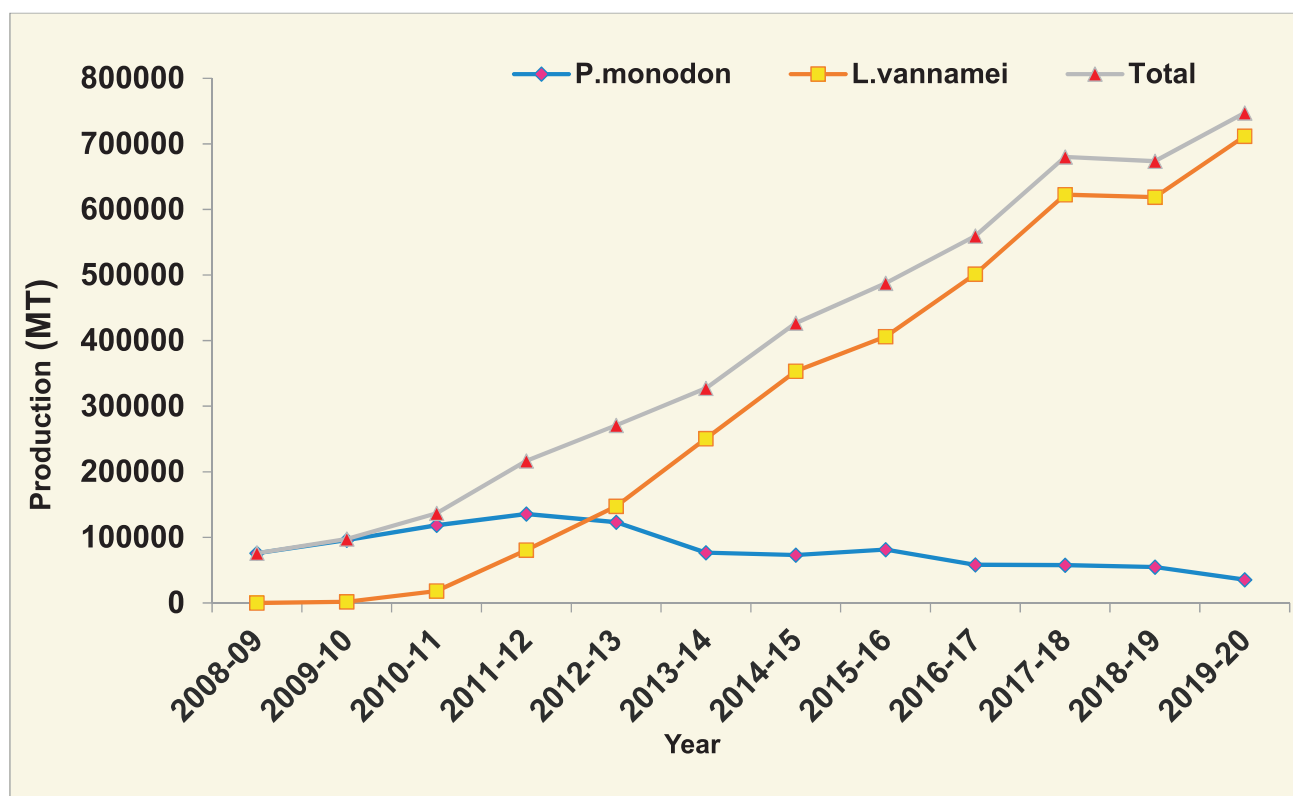
CAA is assisted by the State Level Committees (SLC) and the District Level Committees (DLC) set

up under Chapter V, Rule 10 (sub rule 9) of CAA Rules, 2005. In the case of farms up to 2 ha water spread area, the DLC, upon satisfaction, shall recommend the applications directly to CAA for consideration of registration; and in the case of farms above 2 ha water spread area, the DLC shall inspect the farm to verify compliance to norms and recommend the applications to SLC, who upon satisfaction, shall recommend them to the CAA for registration.

CAA was assigned the task of regulating the commercial introduction of the exotic shrimp namely, SPF *Litopenaeus vannamei* vide Notification dated 15th October, 2008, issued by Department of Animal Husbandry, Dairying & Fisheries, under the Livestock Importation Act, 1898. Accordingly, guidelines containing the criteria for application to breed *L. vannamei*, the technical requirements, procedures for production and sale of SPF *L. vannamei* seeds and, specific norms and regulations were issued vide CAA (Amendment) Rules, 2009 and further amendments through notifications issued from time to time to facilitate implementation of the guidelines. To facilitate smooth operations by the hatchery operators and shrimp farmers, import of SPF *L. vannamei* juveniles (up to 10 g) was permitted for rearing to adult broodstock, sale of nauplii among the permitted hatcheries, and for shifting culture of one species to another after adequate dry out period. Guidelines for seed production and culture of Specific Pathogen Free *P. monodon* have also been issued. CAA is monitoring the implementation of these guidelines for the sustainable development of coastal aquaculture.

3.10.4 Shrimp Production In India

India touched a shrimp production figure of 7,47,111 MT in the year FY 2019-20. The following graph depict the trend of coastal aquaculture production in the country during the last decade from 2008-09 to 2019-20.



It is evident from the figures shown above that no other food production sector in the country has achieved such high growth rates as Aquaculture in the past 10 years. It is submitted that about 10 to 15 percent of the 12 Lakh Ha area available along the coast of India has been brought under Coastal Aquaculture so far and there is an enormous scope for further development of aquaculture activities for shrimp (endemic and exotic species) along the coast and in the hot semi-arid and arid eco-region of northern plains and central high lands of Haryana, Rajasthan, Uttar Pradesh, Maharashtra and Gujarat. With the unstable and failing monsoon, the agriculture production is facing the risk falling further in years to come and with the stagnated marine capture fisheries, Coastal Aquaculture and Mariculture have emerged as the inevitable source of food security for the increasing human population with quality and protein at cheaper cost. It is evident

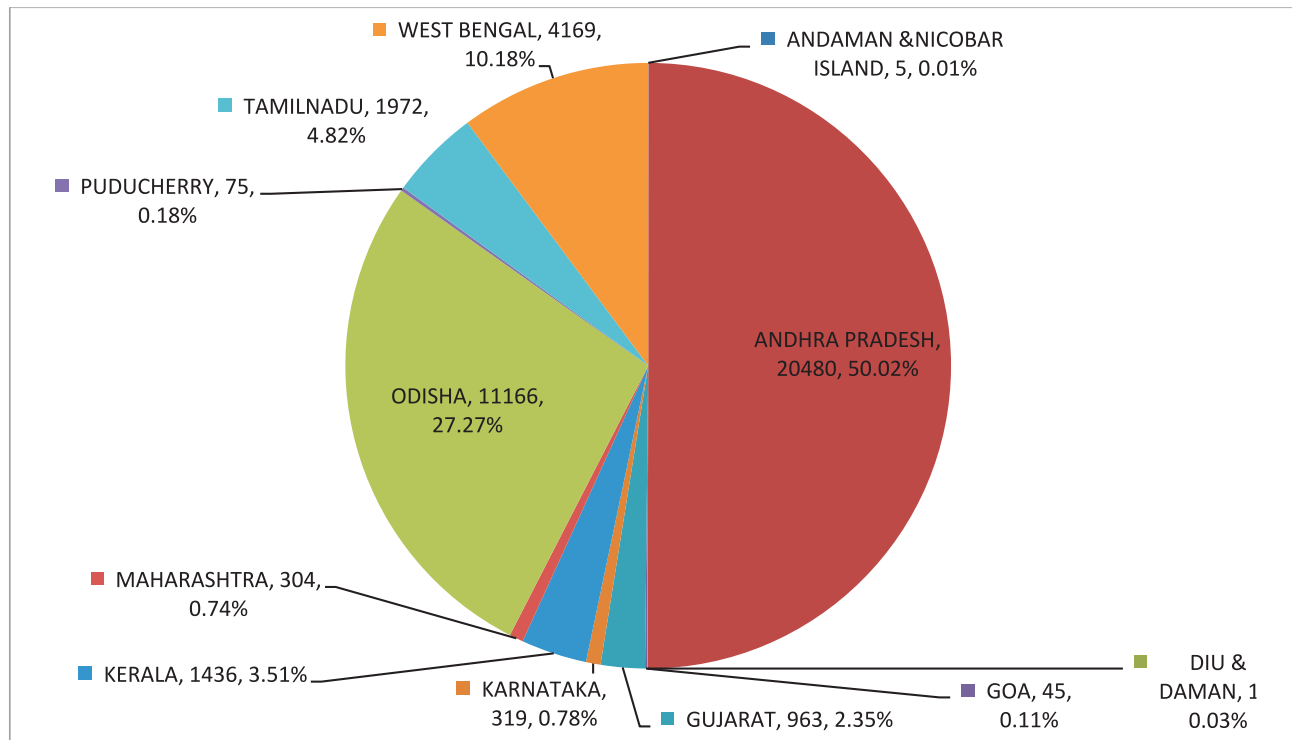
that shrimp production from coastal aquaculture has increased from the level of 75,000 MT during the year FY 2008-09 to the level of 7.5 Lakh MT during the year 2019-20. It has the potential to increase exponentially with the available potential for coastal aquaculture along the Indian coast and other areas.

3.10.5 Achievements of Coastal Aquaculture Authority

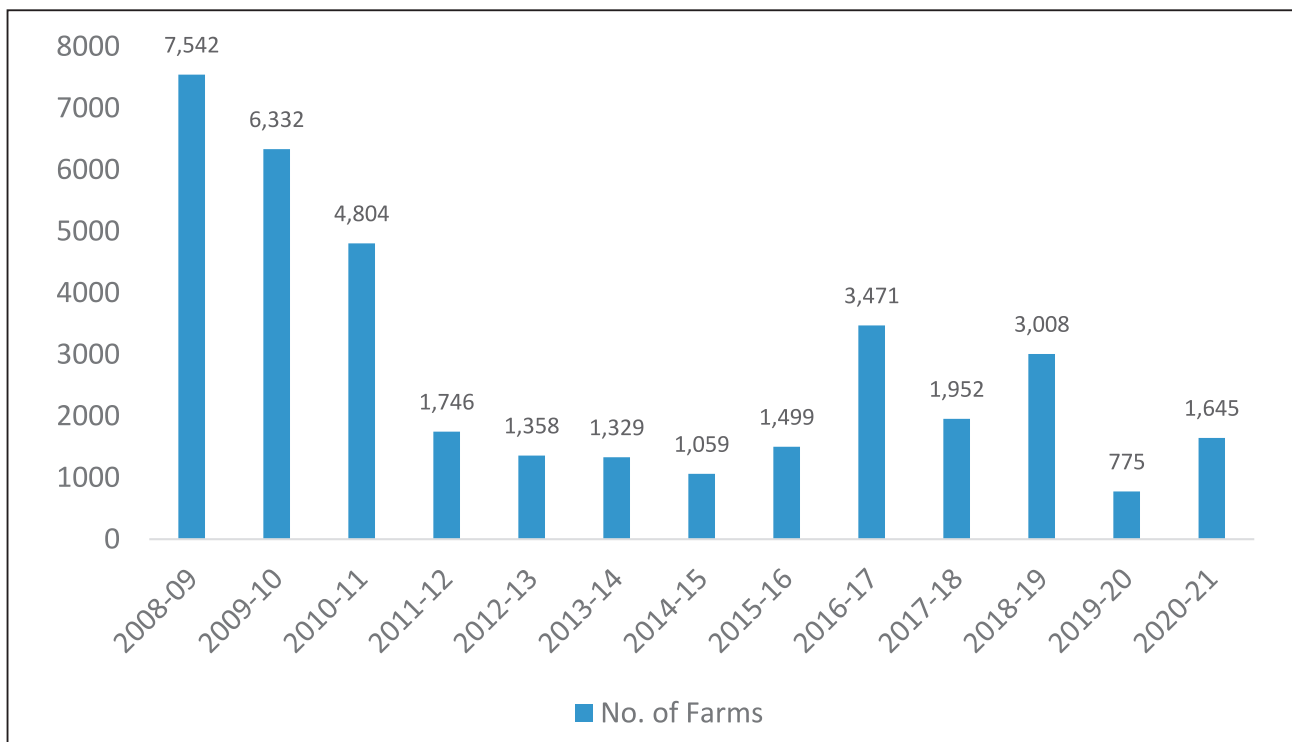
3.10.5.1 Registration/Renewal of Registration of Farms:

A total of 40,946 farms with total farm area of 62,794.33 ha (WSA – 42,771.67 ha) received from SLCs/DLCs of states were registered since inception to March, 2021. Out of this, a total of 1645 farms with total farm area of 1449.18 ha (WSA-2175.79 ha) were registered April, 2020 to March, 2021.

State wise registration of farms



Year wise registration of farms



Renewal of registration of 9052 farms with total farm area of 16,856.50 ha (WSA – 11828.51 ha) were done from 2013 to March, 2021. During the April 2020 to March 2021, registration of 1678 farms with total farm area of 3387.80 ha (WSA – 2358.00 ha) were renewed.

A total of 2631 Letter of Permissions (LoPs) with total farm area of 12,861.04 ha (WSA – 8,624.58 ha) were issued from August 2009 to March 2021. During the period from April, 2020 to March, 2021, 56 requests for Letter of Permissions with total farm area of 126.04 ha (WSA 92.58 ha) were received and all were processed and issued.

CAA accorded permission to NFDB to proceed with the development of all the infrastructure envisaged for the project of coastal aquaculture activities namely, multi species fin fish hatchery, crab hatchery, marine fin fish and crab nursery ponds, culture ponds, and shrimp farming etc., located at Mulapolam Village, Sompeta Mandal, Srikakulam District, Andhra Pradesh.

3.10.5.2 Approval of Overseas Suppliers

CAA empanelled the suppliers of SPF *L. vannamei* and SPF *P. monodon* broodstock based on the genetic base and disease status in consultations with CIBA, NFDB and MPEDA. Based on the recommendations of the Committee, 14 suppliers

(12 suppliers for SPF *L. vannamei* and 2 suppliers for SPF *P. monodon*) were empanelled for supply of SPF broodstock to CAA permitted hatcheries.

During the reporting period M/s. SYAQUA AMERICAS INC. 2801 S.W. 149th Avenue #270, Miramar, Florida 33027, USA, has been enlisted into the empanelled suppliers of SPF *L. vannamei*.

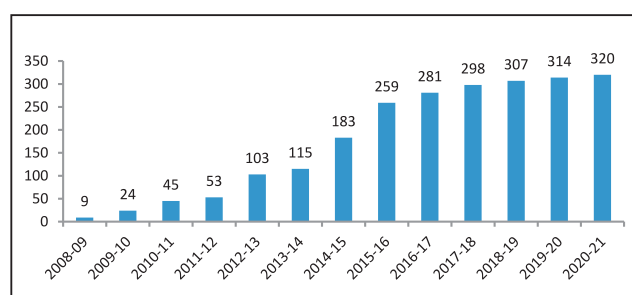
3.10.5.3 Year wise Registration of Hatcheries and Nauplii Rearing Hatcheries (NRHs)

A total of 320 SPF *L. vannamei* hatcheries and 149 Nauplii Rearing Hatcheries (NRH) spread all over the coastal states with a production capacity of 70,000 million seeds (including NRH) were approved from 2009 till March 2021.

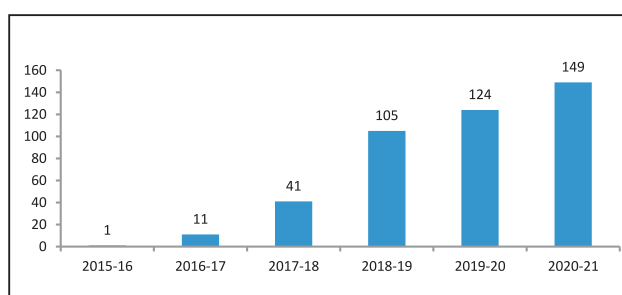
A total of 25 hatcheries and 23 Nauplii Rearing Hatcheries which were newly established at Tamil Nadu, Andhra Pradesh and Odisha have been inspected and processed for registration during the period April, 2020 to March 2021

So far a total of 10,07,800 nos. of *L. vannamei* broodstock were permitted for the import by the registered hatcheries. A total of 2,76,346 numbers of broodstock has been imported from the empanelled overseas suppliers during the period April 2020 to March 2021.

Year wise cumulative registration of Hatcheries



Year wise registration of Nauplii Rearing Hatcheries (NRMs)



Among the 320 hatcheries registered with CAA, the validity of the registration for the 242 hatcheries expired on 31st March, 2020. In this regard, on due consultation with AISHA, CAA had requested all the registered hatchery owners to submit a self-declaration of the ownership of the hatchery in Rs.20/- non-judicial stamp paper to authenticate their possession of the hatchery and to confirm the readiness of the hatchery for the inspection to enable CAA to schedule the inspection and process renewal of registration. Inspection schedules have been made based on the readiness of the hatcheries for inspection.

Considering the present circumstances owing to the Covid-19 pandemic, the competent authority had accorded approval to extend the validity of the Registration and Annual Allocation Order of 242 Registered Hatcheries and Nauplii Rearing Hatcheries that were expiring on 31st March, 2020. Accordingly, the validity of the registration and annual allocation Order of 242 Hatcheries and Nauplii Rearing Hatcheries were extended till 30th June, 2020 as per the existing terms and conditions vide the order no. 56-3/2019 Tech dated 31st March, 2020.

225 hatcheries located at Andhra Pradesh, Odisha and Tamil Nadu have confirmed their readiness for inspection. The Inspection Committee of CAA constituted for this purpose had inspected 182 hatcheries located at Andhra Pradesh and Tamil Nadu before lockdown restrictions were imposed in March 2020 due to Covid-19 pandemic.

The Inspection Committee of CAA constituted for this purpose had inspected 43 hatcheries located at Andhra Pradesh, Odisha and Tamil Nadu, which have confirmed their readiness from June 2020 to March, 2021.

Based on the inspection report of the Committee, the registration of 207 hatcheries were renewed and issued with annual allocation of broodstock calculated based on their water holding capacity of the larval, post larval and maturation tanks on furnishing extended or fresh bank guarantee for

Rs.5 Lakhs (Rupees Five Lakhs only) valid upto 31st March, 2025 and Demand Draft of Rs.50,000/- (Rupees fifty thousand only) as monitoring fee.

Further, 26 hatcheries and 10 Nauplii Rearing Hatcheries (NRHs) whose registrations have expired on 31st March, 2021 have been requested to submit a self-declaration of ownership of the hatchery in Rs.20/- non-judicial stamp paper to authenticate their possession of the hatchery and to confirm the readiness of the hatchery for the inspection to enable CAA to schedule the inspection and process renewal of registration. The same has been received from 32 hatcheries and NRHs that have been inspected by the designated Committee to processing the Renewal of Registration.



3.10.5.4 Issuance of Certificate of Standards for Antibiotic Free Aqua Inputs:

CAA is also issuing Certificate of Standards for Coastal Aquaculture inputs namely, feed, growth supplements and chemicals/ medicines being antibiotic free for the maintenance of the ecological and environmental balance of water bodies and the organisms reared therein and other aquatic life. Accordingly, CAA has issued Certificate of Standards to 3,574 aqua inputs in eight categories. During the period from April 2020 to March, 2021, Certificate of Standards have been issued to 212 products from 57 companies.

3.10.6 Monitoring Programmes:

Twelve (12) Monitoring Assistants have been appointed by CAA on a contractual basis for monitoring the registered farms and hatcheries, to aid in registration of unregistered farms and hatcheries, to collect samples of soil, water, animal from farms and hatcheries, aquaculture inputs from farms, hatcheries and aqua shops. It also conducts awareness programmes at various hotspots of coastal aquaculture in all the coastal states.

CAA officials visited 182 hatcheries located at Andhra Pradesh and Tamil Nadu along with MPEDA officials and collected seed samples from 45 hatcheries under NRCP Programme.

CAA officials visited 383 farms located at Andhra Pradesh, Tamil Nadu, Gujarat and West Bengal for routine monitoring to verify the status of the farm and conducted four awareness programmes on the impact of usage of antibiotic in the aquaculture.



i. Water sample collected from the farms and hatcheries:

CAA officials visited hatcheries and farms located in the following areas and collected water samples from the final discharge point of ETS of hatcheries and farms for analysis.

Sl. No.	District Name, State	Samples collected		Total Samples collected
		Farms	Hatcheries	
1)	Nagapattinam District, Tamil Nadu	3	2	5
2)	Ramanthapuram, Tamil Nadu	7	-	7
3)	Chengalpattu District, Tamil Nadu	-	10	10
4)	Guntur, Andhra Pradesh	10	2	12
5)	Krishna District, Andhra Pradesh	5	-	5
6)	West Godavari District, Andhra Pradesh	5	-	5
7)	East Godavari, Andhra Pradesh	20	19	39
8)	Visakhapatnam District, Andhra Pradesh	5	5	10
9)	Ganjam District, Odisha	9	3	12
10)	Udupi District, Karnataka	4	-	4
11)	Uttar Kannada District, Karnataka	5	-	5
12)	Goa	6	-	6
Total		79	41	120



ii. Action taken to check the Decapod iridescent virus 1 or DIV1 infections

All the empanelled exporters from abroad and the importers in India including hatchery operators have been advised to screen SPF brood stock and other live stocks including Artemia cysts connected with Shrimp Aquaculture Industry in India for Decapod Iridescent Virus 1 (DIV1) and ensure that they are free from DIV1 in addition to OIE listed pathogens, for the safety of Shrimp Aquaculture Industry in India.

iii. Action taken to ensure appropriate biosecurity measures at Hatcheries and NRHs

CAA had issued an Advisory to the operators of hatcheries/NRHs emphasizing not to produce and sell any species other than that are permitted specifically to the respective hatcheries. This was done in order to ensure appropriate bio-security and also to avoid rearing of multiple species under a single roof compromising the bio-security.

3.10.7 Other Activities:

A meeting with the stakeholders of aqua inputs was held at Chennai on 2nd March, 2020 in which the guidelines were circulated to the stakeholders for their comments. Based on the comments received from the stake holders, the new draft of the guidelines has been prepared.

On the direction of Hon'ble National Green Tribunal, Southern Zone, Chennai, CAA has participated in the field evaluation of brackishwater aquaculture farms located at Chittamuru, Vakadu and Kota Mandals of Nellore



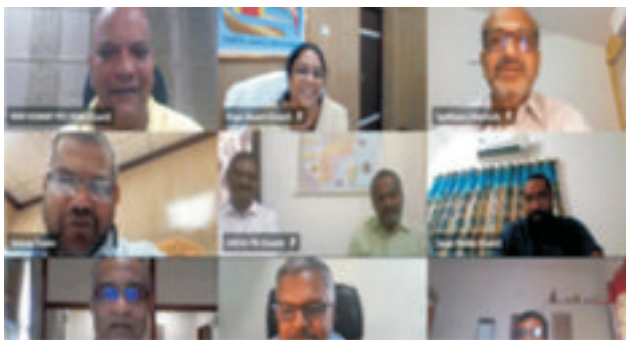
district, Andhra Pradesh and provided the required inputs on dealing with the issue to the District administration



A stakeholder's consultation with the hatchery operators from various regions on World Antimicrobial Awareness Week (WAAW) was held on 23rd November, 2020 through video conferencing. In the meeting, various issues in the hatcheries including production of antibiotic-free shrimp seeds were discussed. Actionable points that emerged during the meeting have been circulated to the stakeholders.



A stakeholder's consultation with the farmers from various regions on World Antimicrobial Awareness Week (WAAW) was held on 24th November, 2020 through video conferencing. In the meeting, various issues in the farms including production of antibiotic free shrimp have been discussed. Actionable points emerged during the meeting have been circulated to the stakeholders.



A meeting with the farmers of Gujarat was held on 10th February, 2021 in Surat, Gujarat that was attended by more than 50 farmers from various districts. Issues related to the registration and renewal of registration farms was discussed.

A meeting with representatives of All India Shrimp Hatcheries Association, Tamil Nadu Chapter was held on 11th February, 2021. Various issues related to the operation of hatcheries were discussed.

A meeting with representatives of shrimp farmers of Nagapattinam District, Tamil Nadu was held on 12th February, 2021. Various issues related to the registration and renewal of registration were discussed.

A clarification has been issued on the apprehension being raised from time to time on the establishment and operation of hatcheries in the CRZ areas along the coasts of India to the District Collector of all (61) coastal districts of the country.

This office celebrated Hindi Pakhwada from 14th to 28th September, 2020 by conducting various competitions among officers and staff. Competitions include Hindi noting and writing format, Quiz, Short Story Telling, Singing Song and Drama in Hindi and they were conducted individually and team-wise. The cash prizes were given to the winners of the competition.

"Hindi Pakhwada" on 28th September 2020



CAA observed Vigilance Awareness Week from 27th October, 2020 to 2nd November, 2020. As part of Vigilance Awareness Week, CAA officials took the Integrity pledge and quiz and drawing competitions were conducted for CAA officers and Staff on the subject "Vigilance".

“Vigilance Awareness Week” on 27th October 2020



3.10.8 New Initiatives

As per the decision taken during the 64th Authority meeting held on 9th September, 2020, the first facilitation Center of CAA was operationalised at Vijayawada, Andhra Pradesh on 18th March, 2021.

In tandem with the decision of the Authority, CAA formally launched the new initiative for the issuance of ID cards to coastal aqua famers across the country. All the DLCs of the country have been advised to provide the details of the owners/operators of registered coastal aqua farmers to issue ID Cards.

3.11 Issuance of Biometric Identity cards to Marine Fishers

In the backdrop of the terrorist attacks in Mumbai on 26th November, 2008, the Government of India necessitated issuance of Biometric Identity Cards to Marine fishers involved in fishing and allied activities. Accordingly a “Central Sector Scheme (CSS) on Issuance of Biometric ID Cards to Marine Fishermen” at a total cost of 72 Crores was launched by the Department on 11th December, 2009. The project for issuance of Biometric ID cards involves two major activities namely, (a) data collection and authentication by the respective States/UTs and (b) digitization of data, capturing of biometric details of individual fisher, production and issuance of cards.

Under this scheme, the Government of India provides 100 percent financial assistance to the Coastal States and UTs, besides meeting the entire cost of consultancy. Main objective of this project is to create a National Marine Fishers Database (NMFD), which could be accessed by all authorized agencies both in the Central and coastal States/UTs. The other objectives of this project are to empower marine fishers through issuance of application oriented biometric ID card and to eliminate duplication of different cards issued by various coastal States and UTs.

Out of 1,990, 521 fishermen identified for issuance of biometric ID card by the Coastal State Government/UTs, biometric enrolment of 19,74,098 (99%) fishermen have been completed. The consortium has produced and supplied a total of 18,68,905 (94.67%) ID Cards to the Coastal States/UTs for distribution to the fishermen and out of which 18,37,016 (98.29%) cards have been distributed to fishers by the State Governments/UTs.

3.12 National Surveillance Programme for Aquatic Animal Diseases

The National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) was initiated in April, 2013 for the purpose of monitoring and controlling the spread of aquatic animal diseases of national and international concern. It has become a primary requirement for effective health management and ultimately for sustainable aquaculture. This programme is also aimed at providing scientifically accurate and cost-effective information for assessing and managing risks of pathogen transfer associated with trade in aquatic animals and improving production efficiency. The other objective of the programme is rapid detection of new and exotic infectious diseases through advanced diagnostic techniques. It also helps in certifying freedom from diseases of concern within a defined geographical area or a specific population and gives boost to our aquatic animal exports. The programme is being implemented to cover 19 selected States and 3 UTs of aquaculture importance through the involvement of 31 identified collaborating centres in the country in a network mode involving ICAR fishery institutes, colleges of fisheries, state fisheries departments and other relevant collaborating partners.

The National Surveillance Programme on Aquatic Animal Diseases (NSPAAD) is being supported under PMMSY with active involvement of stakeholders especially State/UTs and research institutions. The programme has been extended for implementation till June, 2021. Quarterly Aquatic Animal Disease Reports for all the four

quarters during the year were compiled based on the inputs generated from NSPAAD and submitted to OIE Regional Representative for Asia and the Pacific and Network of Aquaculture Centre in Asia Pacific.

3.13 Directorate of Aquatic Animal Health and Quarantine

The Directorate of Aquatic Animal Health & Quarantine (DAAHQ) was set up in the Department of Fisheries for establishing Aquatic Animal Quarantine Unit (AAQU) and Disease Diagnostic Laboratory (DDL) one each on East Coast in Chennai and West Coast near Mumbai with a coordinating unit at head quarter in New Delhi. For the AAQU & DDL in Chennai, the land was acquired at Padappai, Kanchipuram District of Chennai, Tamil Nadu. The design and layout of the building have also been finalized. The Department has issued necessary approvals for the construction of the building for AAQU and DDL facilities at Padappai, Chennai through CPWD at a cost of Rs. 19.27 Crores. The foundation stone for these facilities has been laid by Hon'ble Minister of Fisheries, Animal Husbandry & Dairying on 21st January, 2021. For setting up of the AAQU and DDL around Mumbai for the West Coast, the Department has undertaken preliminary inspection of the alternative sites offered by Government of Maharashtra. Based on the recommendation of the inspection team, the Department has considered 10 acre land at Malad, Mumbai for the said facilities, which will be acquired from Government of Maharashtra through transfer after appropriate clearance from the concerned authorities and completion of formalities of transfer of the land.

Besides, special focus is being given for establishment of aquatic quarantine facilities in the country for aquatic animals and their products under PMMSY. Approximately 5 Aquatic Quarantine Facilities will be established in the country based on the requirement under PMMSY. The unit cost for each AQF will be as per DPR with an upper ceiling of Rs. 20 Crores for the project.

Trade Matters

4.1 Introduction

Fish and fishery products are among the major traded commodities in the World. More than a third of the world's fish production is traded internationally but in the last decade the nature of that trade has changed. The global export value of fish and associated products have increased impressively from USD 15 billion in 1980 to USD 164 billion in 2018. Globalization and liberalization of markets, combined with economic growth in developing countries, rising local demand and the increased importance of aquaculture production has had an enormous impact on the world's fisheries sector in general and on fish trade in particular. About 50 percent of the total export takes place from the developing world, where the net export revenue earned from fish trade is higher than their combined exports value of tea, rice, cocoa and coffee. At the same time, there have been dramatic changes in the fish supply and value chains. Enormous growth is seen in aquaculture, and tremendous improvements have taken place in logistics, distribution and packaging. In parallel to this growth, concerns over environmental issues and sustainability have been prevalent. With the liberalisation of trade, the food chain has expanded, increasing the need for quality-control regulations that ensure safe produce for the consumers. The developing countries have substantially benefited from seafood trade as national economy has been boosted, jobs have been created across the value chain and food security has been addressed to quite an extent.

4.2 Export Scenario in India

Marine products exports play a pivotal role in the Indian economy in terms of employment and income generation besides valuable foreign

exchange earnings. The products exported have created a huge demand in the international markets and are acclaimed to be one of the fastest moving commodities in the world food market.

India is the fourth largest exporter of seafood products in the world after China, Norway and Vietnam with export value of USD 5.96 billion. As per MPEDA data, the export value of marine products from India has registered a significant growth, from Rs. 8,607.94 Crores during 2008-09 to Rs. 43,717.26 Crores in 2020-2021. India's export basket comprises of shrimp, finfish, cuttlefish, squid, dried fish etc. The Pacific white legged shrimp *L. Vannamei* is the major contributor to the country's fisheries exports. Shrimp exports contribute to 51.36 percent of the total exports in terms of quantity and 74.31 percent in terms of value. Aquaculture contributed 67.98 percent of total exports in value and 46.44 percent in terms of volume, while the rest is contributed by capture fisheries. The import of fish and fishery products in the year 2019-20 was worth Rs. 1,730.95 Crores and around Rs. 2,318.07 Crores in the year FY 2020-21.

4.3 Initiative undertaken in Export Sector

In recent years, Government of India has taken several initiatives to harness the full potential of the fisheries sector in a sustainable and responsible manner. The objectives set with regard to fisheries exports are:

- Enhancing export of fisheries products to 1 Lakh Crore from 2020-21 to 2024-25
- Diversifying the export basket by adding new and value added products
- Exploring newer markets and expanding existing markets

- d. Boosting production of high value products and value-added products
- e. Promoting diversification in aquaculture species for exports
- f. Providing institutional mechanisms for easing market access, minimising trade barriers minimising issues related to sanitation and phytosanitation
- g. Enabling fishers and farmers to get benefit of export opportunities

4.4 Regulation of Import & Export

The import and export of fish and fishery products are regulated as per the Foreign Trade Policy of Government of India implemented by Department of Commerce. The import of fish and fishery products are regulated under the provision of Section 3 and Section 3A of the Livestock Importation Act, 1898 to prevent possible ingress of exotic diseases through imported fish and fishery products. The Department of Fisheries oversees the sanitary and phytosanitary issues for the import and export of fish and fishery products.

The import of fish and fishery products are largely covered under two categories as per Export Import (EXIM) Policy. First category is import under the Open General Licence (OGL) and the second category is the import of Restricted Items for which importers have to obtain licence from Director General of Foreign Trade (DGFT). The import of live aquatic animals falls under the category of Restricted Items for which licence is issued identified by DGFT as per the recommendation of the Department of Fisheries based on risk analysis of issues by the DGFT. Similarly, import of the product under OGL category requires Sanitary Import Permit (SIP). Imports of fishery products are allowed through the airports and sea ports of Bengaluru, Chennai, Delhi, Kolkata, Mumbai, Hyderabad, Vishakhapatnam and Kochi. Beside these, a couple of the Land Custom Stations have been allowed for import of fishery products.

The Livestock Importation Act, 1898 has been amended from time to time to facilitate trade. The Principal Notification under the Livestock Importation Act was amended vide the amendment Notification No.655 (E) dated 7th July, 2001 whereby the fishery products have been categorised as products requiring SIP and the products that may be cleared by the Customs on basis of 'No Objection' from the Animal Quarantine and Certification Services (AQCS).

Apart from the EXIM Policy, the Central Government is empowered to regulate, restrict and prohibit import of live animals in accordance with Section 3 of the Live-stock Importation Act, 1898. Notifications S.O. 1495(E) and 1496(E) dated 10th June, 2014 under Section 3 of Livestock Importation Act has been issued by the then Department of Animal Husbandry, Dairying and Fisheries. Through these notifications, Department of Fisheries has notified the classes of animals including fish, crustacean and molluscs that can be considered as "Live-stock" and has also laid down the import and quarantine procedures for live animals. The import of the fishery products is allowed subject to SIP issued by the Department of Fisheries based on import risk analysis. The SIP applications received are examined along with risk analysis by the technical experts of the Department of Fisheries on the basis of scientific evidence and OIE regulations. SIPs must be obtained prior to shipping of goods from the country of origin. SIPs are valid for a period of six months or one year depending upon the nature of product and may be used for multiple consignments.

The Committee on Risk Analysis under the Chairmanship of Joint Secretary (IF/MF) has been established under the Ministry of Fisheries, Animal Husbandry and Dairying. It considers applications received for issuance of SIP to import various livestock products including fish and fishery products. After necessary amendment in the notification S.O. 2666 (E) dated 16th October, 2014, the Ministry has launched a web portal¹ for

online submission of SIP applications, processing and issuance of SIP.

In case of Restricted Items, DGFT forwards the application to Department of Fisheries seeking comments before considering for issuance, of import licence in favor of importer. The cases related to import of live exotic aquatic animals, are referred to the National Committee on Introduction of Exotic Aquatic Species into Indian Waters, in the Department of Fisheries under the chairmanship of Joint Secretary (Trade). The applications are approved based on the recommendation of the said Committee and the examination and observations by Department of Fisheries.

Moreover, in order to facilitate the ease of doing business in the Fisheries sector, Department of Fisheries has done away with the requirement of SIP for import of SPF shrimp broodstock from the CAA approved overseas suppliers. However, at the port of entry, AQCS shall issue NOC to the customs after verifying the pre-boarder quarantine certificate and another certificate declaring freedom from OIE listed pathogen of the susceptible species, issued by the competent authority of the exporting country.

As a follow up to the Hon'ble Finance Minister's Budget Speech 2020, the Department of Promotion of Industry and Internal Trade (DPIIT) has set up an Investment Clearance Cell (ICC) to provide end to end business facilitation and support, including Investment Clearance through a National Single Window System for entrepreneurs. Department of Fisheries is actively involved with activities of ICC. Besides, a Project Development Cell (PDC) has been constituted in Department of Fisheries under the Co-Chairpersonship of Joint Secretary (Marine Fisheries) and Joint Secretary (Inland Fisheries) with other officers of Department and a representative of Invest India as members. The objective of the PDC is to conceptualize, strategize, implement, and disseminate details with respect to investable projects in the Fisheries sector. The PDC creates detailed project reports, ensures that all permissions are in place and land is available for allotment for their respective projects for adoption/investments by companies/investors. The PDC also identifies policy issues that need to be resolved and places them before the Empowered Group of Secretaries. The PDC cell will also interact with State Governments and coordinates with them while preparing project proposals. In line with the above, important discussion meetings have been held to chalk out the way forward.

¹ <https://sip.nic.in>

Chapter 5

**Scheduled Castes Sub-Plan (SCSP)
And Tribal Sub-Plan (TSP)**

The Department of Fisheries aims at strengthening the infrastructure of the State/UTs for the development of Fisheries sector under its various schemes. A large population of the country belonging to the Scheduled Castes, Scheduled Tribes, other weaker sections of the society and women are engaged in activities in the sector. As a corollary, various schemes implemented by the Department aim at benefitting the weaker sections of the society.

As per the Guidelines issued by NITI Aayog vide D.O. letter No.N-11016/12(1)/2009-PC dated 15th December, 2010 to earmark 16.2 percent of funds under Scheduled Castes Sub Plan (SCSP).

The Department has earmarked Rs. 118.10 Crores in FY 2020-21 in RE under different schemes/programmes pertaining to SCSP component. As against the allocated amount, Rs. 118.08 Crores has been incurred under different schemes in FY 2020-21.

The Department had been exempted for earmarking funds under Tribal Sub Plan (TSP) up to FY 2017-18. From FY 2018-19, 8.60 percent has been fixed under TSP. The Department has earmarked Rs. 63 Crores in RE during FY 2020-21, of which Rs. 62.99 Crores has been already incurred.

Empowerment of Women

6.1 Role of Women in Fisheries Sector

Women constitute approximately half of India's population and play a vital role in building our Nation. Women play a crucial role in Marine fisheries and aquaculture, specifically in the small-scale and Artisanal Fisheries sector. It is estimated that there are about 5.4 million people fully engaged in fisheries activities, out of which 3.90 million are fishermen and 1.50 million are fisherwomen. They represent half of the total working population worldwide in the seafood industry as a whole, with fisheries, aquaculture, seafood processing and all related services.

Women also play a large role in Inland Fisheries, which is an important sector for establishing national food security. Activities carried out by women, paid and unpaid, spread across the value chain including pre and post-harvest activities. This includes seaweed and shellfish collection, fishing, weaving and repairing nets, processing, sales, local and intra-regional trade. Clams, crabs, fish fry, seaweed, chank etc. are fished by women in states like Kerala, Tamil Nadu, West Bengal, Andhra Pradesh, Odhisa, Gujarat and the North East.

Women in small-scale fisheries also play key roles in managing finances at the household level and also managing aquatic resources at the community level. Women in indigenous and local coastal communities have extensive local and traditional ecological knowledge, which contributes towards sustainable use and conservation of marine and coastal ecosystems.

Women in the small-scale and Artisanal Fisheries sector have difficulty securing their rights as workers because their role is often unrecognised. They have limited or no access to social security, capital and credit, and face hardships in securing land rights and access to fishery resources. They also face unsafe, unhygienic, and unfair working conditions. In most places, women in post-

harvest activities are constantly struggling for even basic facilities at landing centres and markets. Their roles in harvesting have been limited to collection, hand picking and fishing from smaller water bodies. also, employment opportunities are generally seasonal in nature and with poor wages. There is a sizeable difference in the incomes earned by men and women with income for women being quite low.

It has been the endeavour of the Department to focus on providing benefits to women engaged in animal husbandry, dairying and fisheries. NFDB has been working towards overall development of the Fisheries sector in the country and also ensures that women entrepreneurs/farmers are well supported and encouraged. Since, its inception, the Board has extensively funded 83 projects amounting to a total project cost of Rs. 4,663.20 Lakhs for women entrepreneurs/farmers. NFDB provided financial assistance and technical hand holding for activities varying from seaweed culture in the coastal areas, culture and breeding ornamental fish, culture of food fish in ponds and tanks, paddy cum fish culture, cage culture in reservoirs, setting up of backyard RAS units, Aqua One Centres, AAHLs, procurement of fish marketing vehicles, cold chain management, fish drying and processing besides conducting various awareness programs, workshops, capacity building and training programs specifically for women in the Fisheries sector.

Empowerment of weaker and underprivileged sections is a key focus area for the Government of India. Through implementation of various activities and schemes, socio-economic status has been improved along with improvements in achieving food security for the underprivileged in the Fisheries sector. Further actions taken to improve gender equality and recognition of the role of women in fisheries is expected to increase women participation contributing to overall development in Fisheries sector.

6.2 Role of women in the Fisheries and Aquaculture sector

6.2.1 Fresh Water Pearl Culture

Freshwater pearl culture is a diversified activity in aqua-farming systems. It is an ancient technology developed by Central Institute of Freshwater Aquaculture (CIFA), Bhubaneswar. There are three identified pearl mussel species namely *Lamellidens marginalis*, *L. corrianlis* and *Parreysia corrugata*. These different varieties of pearls are cultured using three different surgical procedures. The technology has attracted several rural, artisan and enterprising communities including women. Therefore, groups of women should be encouraged and trained in pearl culture for alternative source of income.

6.2.2 Backyard Ornamental Fish Culture

Practice of ornamental fish culture is seen as a lucrative and stable business that can be taken up by women in remote villages. Women should be encouraged to adopt innovative and economically advantageous technologies.

6.2.3 Community Pond Aquaculture

A large number of small and backyard ponds in the coastal areas are being used for bathing, washing and also as dumping ground, resulting into environmental problems. Women could be employed and trained in developing the neglected water bodies for raising short term crops of fish fry, fingerlings and even table size fish at low operational costs. These initiatives will lead to sustainable economic development.

6.2.4 Seed Collection and grading

As alternate income sources, seeds can be collected and graded by women. Women have existing skills for grading juvenile sea bass fattening of Crabs, Mussel, Pearl and Oyster; involvement in grading thereby increasing their economic independence.

6.3 Key Gender issues in Aquaculture

Currently, there is no set mechanism or platform for making the women aware of the market related information. Time constraints due to

household priorities also prevent women from coming to the forefront and take up fisheries as a major economic activity. However, such issues can be overcome to a great extent through technology dissemination, imparting training on time efficient technologies and techniques. Therefore, efforts are being made to create awareness for encouraging women to come forward.

6.4 Occupational Roles in Post Harvest

Indian fisherwomen are involved in sorting and grading different varieties of fish for sale in local markets from the beach. Adoption of traditional method-ITK (Indigenous Technical Knowledge) like smoking fish are followed and products are sold in nearby markets. Women are involved in packing of fish and other post-harvest processing methods. Additionally, women organize themselves as Self Help Groups (SHGs) and sell their value added products through exhibitions, fairs and nowadays their products are seen in supermarkets and are also exported.

6.5 Gender Budget Cell

A Gender Budget Cell has been set up in the Department with the objective of influencing and effecting a change in the Ministry's policies, programmes in a way that can tackle gender imbalances, promote gender equality and empowerment of women. It is headed by Joint Secretary (Inland Fisheries & Administration). Currently, the Department has not earmarked any specific funds for women component, however, it is advising States/Implementing Agencies for utilizing around 30 percent of allocated funds towards women beneficiaries under the existing Centrally Sponsored/Central Sector schemes being implemented by the Department. The Gender Budget Cell has identified the following schemes under which funds are allocated towards women beneficiary:

- Pradhan Mantri Matsya Sampada Yojana (PMMSY)
- Fisheries Infrastructure Development Fund (FIDF)
- National Fisheries Development Fund

International Cooperation

7.1 Overview

One third of the globe is covered by water surrounding the continents of the world. Fisheries resources in the oceans and seas around the world support economies of many nations. Fish being a global 'good' and world's most 'traded commodity', demands sustainable management of fisheries' resources. 'International cooperation' becomes particularly important in case of the fish stocks that are migratory and straddling and are shared by different countries. Therefore, international efforts are on through commitments and agreements towards this end.

India is a signatory to a number of international instruments and agreements including United Nations Convention on the Law of the Sea (UNCLOS), 1982; United Nations Fish Stock Agreement (UNFSA), 2001; UN Convention on Biological Diversity, 1995; The FAO Code of Conduct for Responsible Fisheries and International Plan of Actions related to marine fisheries, 1995; The Kyoto Declaration and Plan of Action, 1995; Safety and health of fishers at Sea: the International Labour Organisation (ILO) requirements and UN Sustainable Development Goals (SDG 14). In addition, India being a party to various international conventions, treaties or agreements, and member in Regional Fishery Bodies (RFBs), is committed to a range of international obligations related to the fisheries sector.

India is member of various regional fisheries bodies including the Asia-Pacific Fishery Commission (APFIC); Network of Aquaculture

Centres in Asia and the Pacific (NACA); Intergovernmental Organization for Marketing Information and Technical Advisory Services for Fishery Products in the Asia and Pacific Region (INFOFISH); Indian Ocean Tuna Commission (IOTC) and the Bay of Bengal Programme Inter-Governmental Organization (BOBP-IGO). Besides, it is also member of other regional bodies that deal with environment (e.g. South Asian Cooperative Environment Programme, International Union for Conservation of Nature) and Trade (Bay of Bengal Initiative for Multi-Sectoral Technical Economic Cooperation-BIMSTEC). Even economic and geopolitical set-ups such as South Asian Association for Regional Cooperation (SAARC) have undertaken initiatives in both fisheries and environment related matters from time to time.

Most of the regional organizations to which India is a party (APFIC, BOBP-IGO, and NACA) are advisory in nature and as such their roles and functions are limited to policy advocacy and capacity building.

7.2 Role of Regional Fisheries Management Organizations

Regional Fisheries Management Organizations (RFMOs) are international organizations formed by countries with fishing interests in an area. Some of them manage all the fish stocks found in a specific area, while others focus on particular high migratory species, notably tuna, throughout vast geographical areas. There are several IOTC resolutions on conservation and management measures which are binding on its members.

RFMOs play a pivotal role in facilitating intergovernmental cooperation in fisheries management. Indian Ocean Tuna Commission (IOTC) is the RFMO, to which India is a party- has management and regulatory mandate on tuna and tuna like species in the Indian Ocean under its area of competence.

India is a member as Contracting and Coopering Party (CPC) and the Department has plans to play a leadership role particularly in the IOTC. The Department officials have actively participated in all the meetings and made necessary intervention in order to protect the country's national interests and that of the small scale fisher communities. As the Department has taken initiated action towards enactment of a suitable national legislation for regulation and management of marine fisheries, it is also envisioned that the PSMA will also be ratified as soon the proposed legislation is enacted by the Parliament.

7.3 Engagement with World Trade Organisation and other global organisations

While the Department has been ensuring active participation, it also proposes to play a proactive and effective role in all relevant meetings, conferences of the concerning international, multilateral and regional fora concerning the fisheries sector.

In World Trade Organisation (WTO), negotiations are going on for developing disciplines under Agreement on Subsidies and Countervailing Measures (ASCM), to prohibit certain subsidies which lead to (i) Illegal, Unreported and Unregulated (IUU) Fishing (ii) Fishing in stocks declared as overfished (iii) Overfishing and overcapacity. Department of Fisheries has been working with Department of Commerce for securing the interests of the country and that of the poor fisherfolk.

On the WTO front, DoF has held Secretary level consultations with the Department of Commerce and Permanent Mission of India to WTO as well as Task Force constituted by the Department chaired by Joint Secretary with inter-Ministerial and States' participation to arrive at the reasonable position to be taken by India in respect of the ongoing negotiations on fisheries subsidies disciplines with particular reference to securing appropriate and effective Special & Differential Treatment (S&DT) in order to protect interest of Indian fisherfolk and secure policy space for developmental aspiration in marine fisheries sector. As part of Indian delegation, DOF officials attended meeting clusters of Negotiating Groups on Rules (NGR) on Fisheries Subsidies of the World Trade Organisation (WTO) as well as inter-sessional and bilateral meetings in this connection.

Similarly, India is also represented in the World Organization for Animal Health formerly known as the Office International des Epizooties (OIE) which is the international organisation for aquatic animal health recognized by the WTO's Agreement on Sanitary and Phytosanitary Measures (SPS Agreement) and hence related to fisheries sector.

International Organization for Standardization (ISO) is one of the other international organisations which are also concerned with fisheries sector. ISO/TC 234 Fisheries and Aquaculture is the specialized technical committee which develops global standards related to the fisheries sector.

With regards to bilateral cooperation in the field of fisheries, the Department currently has active Memoranda of Understanding (MoU) signed with Norway, Bangladesh, Iceland, Morocco and Vietnam. The progress under these MoUs is at various levels through Joint Working Group (JWG). As the MoUs earlier signed with Indonesia

has expired, a fresh MoU is being negotiated with the Indonesian side. Besides, a draft MoU is also under active consideration for signing with the Republic of Korea. In addition, there is a mechanism of JWG between India and Sri Lanka on Fisheries issues. In this regard, the fourth meeting of India-Sri Lanka JWG was held on 30th December, 2020 in virtual mode and the Indian delegation was led by Secretary, Department of Fisheries. Due to economic value of the sector, Fisheries sector is also included as one of the areas of bilateral cooperation under various MoUs signed with a number of other countries by the Department of Agriculture, Cooperation and Farmers Welfare and Department of Animal Husbandry and Dairying. The first meeting of the India-Iceland JWG on 'Cooperation in sustainable Fisheries Development' was held through video conferencing on 2nd July, 2020. Joint Secretary (MF) co-chaired the meeting on the Indian side.

Indian delegation led by Secretary, Department of Fisheries attended the Tenth Meeting of the Governing Council (GCM-10) of the BOBP-IGO held on 25th June, 2020 through Video Conferencing.

In order to formalise the collaboration with WorldFish, an international, non-profit research and innovation institution based in Penang, Malaysia, a virtual meeting was held by Secretary, Department of Fisheries with Director General, WorldFish on 8th July, 2020 to discuss and explore the possibility of collaboration between the World Fish and the Department, towards the sustainable development of fisheries sector in the country. A JWG has been formed between the Department and WorldFish and the first meeting of the JWG was held on 10th August, 2020.

The Department has been negotiating a project proposal for World Bank assistance on "Blue Revolution: Tranche -1: Response to COVID-19 and Recovery of Fisheries Sector, Tranche-2:

Harnessing the Potential of Aquatic Resources to complement the Pradhan Mantri Matsya Sampada Yojana (PMMSY)".

The Department is engaged in active collaboration and cooperation with Food and Agriculture Organisation of the United Nations (FAO) and its bodies like Committee on Fisheries (COFI), its sub-committees namely Sub-Committee on Aquaculture (COFI-AQ) and Sub-Committee on Fish Trade (COFI-FT). India also actively participated in the Asia-Pacific Fishery Commission (APFIC) which is a regional Fisheries body under the FAO. Secretary, Department of Fisheries participated as an invited panelist in FAO Committee on World Food Security (WFS) 47 Partner Event: Building Forward Better with Aquatic Foods on 14th October, 2020.

The Department officials actively participated in the 24th Session of IOTC and its associated meetings held through virtual mode during 2nd to 6th November, 2020 as well as 23rd Session of the Scientific Committee of IOTC held virtually during 7th to 11th December, 2020 and its various Working Parties' meetings along with scientists of Fishery Survey of India (FSI) and Central Marine Fisheries Research Institute (CMFRI). The Department officials also participated in the 6th Session of Technical Committee on Allocation Criteria (TCAC) of IOTC during 15th to 16th September, 2020.

Department of Fisheries has supported for India's participation in the Cluster Group on Fisheries Management (CGFM) of the Indian Ocean Rim Association (IORA). Officers of the Department of Fisheries participated in two IORA webinars, namely, Webinar on Women's Economic Empowerment in Fisheries held on 28th September, 2020 and Webinar on Advancing Sustainable Fisheries Management in IORA held on 29th September, 2020.

The Department officials participated in the 76th Annual Session of UN-ESCAP held via video conferencing on 21st May, 2020 at the UN Conference Centre, Bangkok.

Participation by India in the Phase-II of the GEF-FAO Bay of Bengal Large Marine Ecosystem (BOBLME) Programme has been confirmed

An Expression of Interest (EoI) for India's participation as the Lead Partnering Country (LPC) in the GloLitter Partnerships (GLP) Project being implemented jointly by the Food and Agriculture Organisation (FAO) and International Maritime Organisation (IMO) was submitted by the Department and India has been selected for the same.

The Department officials attended webinars on the following:

1. Launch of the FAO/CSIRO review of 'Illegal fishing in the Asia-Pacific Fishery Commission (APFIC) Region: Inland fisheries connectivity, irrigation and water management' on 28th January, 2021
2. Review of illegal fishing in the APFIC region on 10th February, 2021
3. APFIC webinar on Antimicrobial Resistance (AMR) and Antimicrobial Use (AMU) in aquaculture in Asia on 24th February, 2021
4. APFIC webinar on Multispecies stock assessment for management on 10th March, 2021
5. APFIC webinar on Aquaculture innovation in the APFIC region on 25th March, 2021
6. APFIC webinar on Subsidies, WTO and Fisheries on 31st March, 2021

Departmental Accounting Organisation

8.1 Accounting Organization of Department of Fisheries

The Secretary as Chief Accounting Authority in the Department of Fisheries discharges his functions with the assistance of Financial Adviser and Chief Controller of Accounts.

As per Rule 70 of GFR 2017, the Secretary of a Ministry/Department as Chief Accounting Authority of the Ministry/Department shall:

- a. Be responsible and accountable for financial management of his Ministry or Department
- b. Ensure that the public funds appropriated to the Ministry or Department are used for the purpose for which they were meant
- c. Be responsible for the effective, efficient, economical and transparent use of the resources of the Ministry or Department in achieving the stated project objectives of that Ministry or Department, whilst complying with performance standards
- d. Appear before the Committee on Public Accounts and any other Parliamentary Committee for examination
- e. Review and monitor regularly the performance of the programmes and projects assigned to his Ministry to determine whether stated objectives are achieved
- f. Be responsible for preparation of expenditure and other statements relating to his Ministry or Department as

required by regulations, guidelines or directives issued by Ministry of Finance

- g. Ensure that his Ministry or Department maintains full and proper records of financial transactions and adopts systems and procedures that shall at all time afford internal controls
- h. Ensure that his Ministry or Department follows the Government procurement procedure for execution of works, as well as for procurement of services and supplies, and implements it in a fair, equitable, transparent, competitive and cost-effective manner
- i. Take effective and appropriate steps to ensure his Ministry or Department:
 - a. Collects all moneys due to the Government and
 - b. Avoids unauthorized, irregular and wasteful expenditure.

As per Para 1.3 of Civil Accounts Manual, the Chief Controller of Accounts for and on behalf of the Chief Accounting Authority is responsible for the following:

- a. Arranging all payments through the Pay and Accounts Offices/Principal Accounts Office except where the Drawing and Disbursing Officers are authorized to make certain types of payments.
- b. Compilation and consolidation of accounts of the Ministry/ Department and their submission in the form prescribed, to the Controller General of Accounts; preparation of Annual Appropriation Accounts for the Demands

for Grants of his Ministry/Department, getting them duly audited and submitting them to the CGA, duly signed by the Chief Accounting Authority.

- c. Arranging internal inspection of payment and accounts records maintained by the various subordinate formations and Pay and Accounts Offices of the Department and inspection of records pertaining to transaction of Government Ministries / Departments, maintained in Public Sector Banks.

The Chief Controller of Accounts, Department of Fisheries performs his duties with the assistance of Controller/ Assistant Controller of Accounts, three Pr. Accounts Officers at HQ and 10 Pay and Accounts Offices. Five Pay and Accounts Offices are located in Delhi/NCR, one each in Chennai, Cochin, Kolkata, Mumbai and Nagpur. All payments pertaining to the Department/ Ministry are made through PAOs/CDDOs attached with respective PAOs. DDOs present their claims /bills to the designated PAOs/CDDOs, who issue cheques/releases e-payment after exercising the necessary scrutiny as per provisions contained in Civil Accounts Manual, Receipt and Payment Rules and other order issued by Government from time to time.

As per Para 1.2.3 of Civil Accounts Manual, Principal Accounts Office at HQ functions under a Principal Accounts Officer who is responsible for the following:

- a. Consolidation of the accounts of the Ministry/Department in the manner prescribed by CGA
- b. Preparation of Annual Appropriation Accounts of the Demands for Grants controlled by Ministry/Department, submission of Statement of Central Transactions and material for the Finance Account of the Union Government(Civil) to the Controller General of Accounts

- c. Payment of loans and grants to State Government through Reserve Bank of India and wherever this office has a drawing account, payment there from to Union Territory Government / Administrations
- d. Preparation of manuals keeping in view the objective of management accounting system if any, and for rendition of technical advice to Pay and Accounts Offices, maintaining necessary liaison with CGA's Office and to effect overall coordination and control in accounting matters
- e. Maintaining Appropriation Audit Registers for the Ministry/ Department as a whole to watch the progress of expenditure under the various Grants operated on by the Ministry/Department

Principal Accounts Office/Officer also performs all administrative and coordinating function of the accounting organization and renders necessary financial, technical, accounting advice to department as well as to local Pay & Accounts offices and Out Station Pay & Accounts offices.

As per provisions contained in Civil Accounts Manual, Pay & Accounts offices make payments pertaining to respective Ministries/ Departments and in certain cases payments will be made by the departmental Drawing and Disbursing Officers (DDOs) authorized to draw funds, by means of cheques drawn on the offices/branches of accredited bank for handling the receipts and payments of the Ministry/ Department. These payments will be accounted for in separate scrolls to be rendered to the Pay and Accounts Offices of Ministry/Department concerned. Each Pay and Accounts Office or Drawing and Disbursing Officer authorized to make payments by cheques/e-payments, will draw only on the particular branch/branches of the accredited bank with which the Pay and Accounts Office or the Drawing and Disbursing Officer as the case

may be, is placed in account. All receipts of the Ministry/Department are also be finally accounted for in the books of the Pay and Accounts Office. The Pay and Accounts office is the basic Unit of Departmentalized Accounting Organization. Its main function include:

- a. Pre-check and payment of all bills, including those of loans and grants-in-aid, submitted by Non-Cheque Drawing DDOs
- b. Accurate and timely payments in conformity with prescribed rules and regulations
- c. Timely realization of receipts
- d. Issue of quarterly letter of credit to Cheque Drawing DDOs and post check of their Vouchers/bills
- e. Compilation of monthly accounts of receipts and expenditures made by them incorporating there with the accounts of the cheque Drawing DDOs
- f. Maintenance of GPF accounts other than merged DDO and authorization of retirement benefits
- g. Maintenance of all DDR Heads
- h. Efficient service delivery to the Ministry/Department through banking arrangement by way of e-payment
- i. Adherence to the prescribed Accounting Standards, rules and principles
- j. Timely, accurate, comprehensive, relevant and useful financial reporting.

The overall responsibilities of Departmental Accounting Organization in respect of Department of Fisheries are as follows:

- a. Consolidation of monthly accounts of Ministry and its submission to the CGA
- b. Annual Appropriation Accounts

- c. Statement of Central Transactions
- d. Preparation of "Accounts at a Glance"
- e. Union Finance accounts which are submitted to the CGA, Ministry of Finance and Principal Director of Audit
- f. Payments of grants-in-aid to Grantee Institutions / Autonomous Bodies etc
- g. Rendering technical advice to all PAOs and Ministry; if necessary in consultation with other organizations like DoPT, Ministry of Finance and CGA etc
- h. Preparation of Receipt Budget
- i. Preparation of Pension Budget
- j. Procuring and supplying of Cheque books for and on behalf of PAOs/Cheque Drawing DDOs
- k. To maintain necessary liaison with Controller General of Accounts office and to effect overall co-ordination and control in accounting matters and accredited Bank
- l. To verify and reconcile all receipts and payments made on behalf of Department of Fisheries through the accredited Bank i.e. State Bank of India
- m. To maintain accounts with Reserve Bank of India relating Department of Fisheries and to reconcile the cash balances
- n. To ensure prompt payments
- o. Speedy settlement of Pension/Provident fund and other retirement benefits
- p. Internal Audit of the Department, subordinate and attached offices under Department of Fisheries and its Grantee institutions, Autonomous Bodies etc
- q. To make available accounting information to all concerned Authorities/Divisions

- r. Budget co-ordination works of Department Fisheries
- s. Monitoring of New Pension Scheme and revision of pension cases from time to time
- t. Computerization of Accounts and e-payment
- u. Administrative and co-ordination function of the accounting organization
- v. Roll out of PFMS under Other Central Expenditure and Central Sector Schemes in Implementing Agencies/Grantee Institutions/Autonomous Bodies etc
- w. Non-Tax Receipt Portal (NTRP) in the Department of Fisheries

Accounting information and data are also provided to the Financial Advisor and Chief Accounting Authority to facilitate effective budgetary and financial control. Monthly and progressive expenditure figures under various sub-heads/object-heads of the grant of the Department of Fisheries are furnished to Budget Section of the Department including Senior Officers. Progress of expenditure against budget provisions are also submitted weekly to the Secretary and Additional Secretary & Financial Adviser as well as Heads of Divisions of the Ministry, controlling the grant for purposes of better monitoring of expenditure in last quarter of the financial year.

The Accounting organization also maintains accounts of long-term advances such as House Building Advance, Motor Car Advance and GPF accounts of employees of the Ministry.

The verification and authorization of pensionary entitlement of officers and staff members is done by the Pay & Accounts Offices on the basis of service particulars and pension papers furnished by Heads of Offices. All retirement benefits and payments like gratuity, cash equivalent to leave salary as well as payments under Central

Government Employees Group Insurance Scheme; General Provident Fund etc. are released by Pay & Accounts Offices on receipt of relevant information / bills from DDOs.

8.2 Internal Audit Wing

The Internal Audit Wing carries out audit of accounts of various offices of the Department to ensure that rules, regulations and procedures prescribed by the government are adhered to by these offices in their day to day functioning. Internal Auditing is an independent, objective assurance and consulting activity designed to add value and improve an organization's operations. It basically aims at helping the organization to accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control and governance processes. It is also an effective tool for providing objective assurance and advice that adds values, influence change that enhances governance, assist risk management, control processes and improve accountability for results. It also provides valuable information to rectify the procedural mistakes/deficiencies and thus, acts as an aid to the management. The periodicity of audit of a unit is regulated by its nature, volume of work and quantum of funds.

The Internal Audit Wing working under the overall guidance of Chief Accounting Authority and Financial Advisor has focused on strengthening governance structures, capacity building and leveraging technology in appropriate manner to ensure an efficient and effective Internal Audit practice.

In pursuance of O/o Controller General of Accounts, Department of Expenditure, Ministry of Finance, OM no. G.25014/33/2015-16/MF.CGA/IAD/306-53 dated 15th May, 2017 and as per provisions contained in Generic Internal Audit Manual (Version 1.0) issued by O/o CGA, Audit Committee has been constituted in this Department under the Chairmanship of Secretary

(Fisheries) and terms of reference of Internal Audit Committee has been defined in O/o CCA OM No. Agri/IAW/Audit Committee/Fisheries/2020-21/251-269 dated 15th September, 2020.

During FY 2020-21, the focus of Audit was to detect errors in fixation of Pay paid in excess as well as in short.

Status of Outstanding Internal Audit paras in the Department of Fisheries as on 31st March, 2021 are given below:

Department	Outstanding Paras up to 31 st March, 2020	Paras Raised from 1 st April, 2020 to 30 th June, 2020	Paras Dropped from 1 st April, 2020 to 30 th June, 2020	Total Outstanding Paras as on 30 th June, 2020
FISHERIES INSTITUTES	223	NIL	NIL	223
TOTAL	223	NIL	Nil	223

Department	Outstanding Paras up to 30 th June, 2020	Paras Raised from 1 st July, 2020 to 30 th September, 2020	Paras Dropped from 1 st July, 2020 to 30 th September, 2020	Total Outstanding Paras as on 30 th September, 2020
FISHERIES INSTITUTES	223	74	77	220
TOTAL	223	74	77	220

Department	Total Outstanding Paras as on 30 th September, 2020	Paras Raised from 1 st October, 2020 to 31 st December, 2020	Paras Dropped from 1 st October, 2020 to 31 st December, 2020	Total Outstanding Paras as on 31 st December, 2020
FISHERIES INSTITUTES	220	NIL	3	217
TOTAL	220	NIL	3	217

Department	Total Outstanding Paras as on 31 st December, 2020	Paras Raised from 1 st January, 2021 to 31 st March, 2021	Paras Dropped from 1 st January, 2021 to 31 st March, 2021	Total Outstanding Paras as on 31 st March, 2021
FISHERIES INSTITUTES	217	NIL	12	205
TOTAL	217	NIL	12	205

8.3 Banking Arrangements

State Bank of India is the accredited bank for PAOs and its field offices in the Department of Fisheries. e-Payments processed by the PAOs/CDDOs are settled through CMP, SBI, Hyderabad in favour of the bank account of vendors/beneficiaries. In some cases, Cheques issued by the PAOs/CDDOs are presented to the nominated branch of the accredited bank for payment. The receipts are also remitted to the accredited banks by the respective PAOs/CDDOs apart from Non-Tax-Receipt Portal (NTRP). Any change in accredited bank requires specific approval of Controller General of Accounts, Department of Expenditure, Ministry of Finance.

Principal Accounts Office has 10 (Ten) Pay & Accounts Offices. Five PAOs are located in Delhi/NCR, One each in Chennai, Cochin, Kolkata, Mumbai, and Nagpur. All payments pertaining to the Department/Ministry are made through PAOs/CDDOs attached with respective PAOs. Drawing and Disbursing Officers present their claims/bills to the designated PAOs/CDDOs, who issue releases e-payment after exercising the necessary scrutiny as per provisions contained in Civil Accounts Manual, Receipt and Payment Rules and other orders issued by Govt. from time to time.

8.4 Public Financial Management System

Public Financial Management System (PFMS) initially started as a Plan Scheme named CPSMS of the erstwhile Planning Commission in 2008-09 as a pilot in four states of Madhya Pradesh, Bihar, Punjab and Mizoram for four Flagship schemes e.g. MNREGA, NRHM, SSA and PMGSY. After the initial phase of establishing a network across Ministries / Departments, It has been decided to undertake National roll-out of CPSMS (PFMS) to link the financial networks of Central, State Governments and the agencies of State Governments. The scheme was included in 12th Plan initiatives of erstwhile Planning Commission

and Ministry of Finance. Presently PFMS is the scheme of Department of Expenditure, Ministry of Finance and being implemented by O/o Controller General of Accounts across the country.

As per MoF, DoE, OM No.66 (29) PF-II/2016 dated 15th July, 2016, Hon'ble Prime Minister has emphasized the need for improved financial management in implementation of Central Plan Schemes so as to facilitate Just-in-Time releases and monitor the usage of funds including information on its ultimate utilization. PFMS is administered by the O/o controller General of Accounts in the Department of Expenditure which is an end-to-end solution for processing payments, tracking, monitoring, accounting, reconciliation and reporting. It provides the scheme managers a unified platform for tracking releases and monitoring their last mile utilization.

In order to abide by the directions to implement Just-in-time releases and monitor the end usage of funds, it has been decided by Ministry of Finance to universalise the use of PFMS to cover all transactions/payments under the Central Sector Schemes. The complete monitoring of these schemes require mandatory registration of all Implementing Agencies (IAs) on PFMS and mandatory use of Expenditure, Advances & Transfer (EAT) module of the PFMS by all IAs. The Implementation Plan covers the complete universe of Central Sector Schemes, which inter-alia requires the following steps to be taken by each Ministry/Department:-

- a. All central schemes have to be mapped / configured and brought on the PFMS platform.
- b. All Implementing Agencies (IAs) receiving and utilizing funds needs to be mandatorily registered on PFMS.
- c. Usage of PFMS modules has to be made mandatory for all registered agencies for making payments, advances and transfers.

- d. All Departmental Agencies incurring expenditure in respect of Central Sector Schemes must register and compulsorily use the PFMS Modules.
- e. All Grantee Institutions have to adopt PFMS modules for making Payments/ Transfers/Advance from Grants received from the Central Govt. This will enable generation of on-line Utilization Certificates for claiming funds from the Central Government.
- f. Department has to take an action for integrating their respective systems/ applications with the PFMS.

8.5 Modules to implement the Mandate

Modules developed/under developed by PFMS for stakeholders as per the Union Cabinet approval and mandate are as under:

I. Fund Flow Monitoring [EAT Modules]

- a. Agency registration
- b. Expenditure management and fund utilization through PFMS EAT module
- c. Accounting Module for registered agencies
- d. Treasury Interface
- e. PFMS-PRI fund flow and utilization interface
- f. Mechanism for State Governments towards fund tracking for State schemes
- g. Monitoring of Externally Aided Projects (EAP)

II. Direct Benefit Transfer (DBT) modules

- a. PAO to beneficiaries
- b. Agency to beneficiaries
- c. State treasuries to beneficiaries

III. Interfaces for Banking

- a. CBS (Core Banking Solutions)
- b. India Post
- c. RBI (Reserve Bank of India)
- d. NABARD & Cooperative Banks

8.6 Modules to Implement Enhanced mandate

I. PAO Computerization-Online payments, receipts and accounting of Govt. of India

- a. Programme Division module
- b. DDO module
- c. PAO module
- d. Pension module
- e. GPF & HR module
- f. Receipts including GSTN
- g. Annual Financial Statements
- h. Cash Flow Management
- i. Interface with non-civil ministries

II. Non-Tax Receipt Portal

8.7 Other Departmental Initiatives

To leverage the capabilities of PFMS, several other departments have approached PFMS for developing utilities for their departmental need as follows:-

- a. CBDT PAN Validation
- b. GSTN bank account validation

8.8 Implementation Strategy

An Action Plan has been prepared and approved by Ministry of Finance for phased implementation of Public Financial Management System (PFMS).

Improved Financial Management through:

- a. Just in Time(JIT) release of funds
- b. Monitoring of use of funds including ultimate utilization

8.8.1 Strategy

Universal roll-out of PFMS which inter alia includes

- a. Mandatory registration of all Implementing Agencies (IA) on PFMS and
- b. Mandatory use of Expenditure Advance & Transfer (EAT) Module of PFMS by all IAs

I. Implementation Strategy for Central Sector (CS) schemes/transaction

Activities to be completed are as follows:

- a. Mandatory registration and use of EAT module by IAs
- b. Mapping of all relevant information of Schemes
- c. Uploading of budget of each scheme on PFMS
- d. Identify implementation hierarchy of each scheme
- e. Integration of System Interface of specific schemes with PFMS e.g. NREGASoft, AwasSoft
- f. Deployment and training of trainers

II. Implementation Strategy for Centrally Sponsored Schemes

Activities to be undertaken by States are as follows:

- a. State Treasury Integration with PFMS
- b. Registration of all SIAs on PFMS (1st level and below)
- c. Mapping of state schemes with corresponding central schemes
- d. Configuration of State schemes on PFMS

- e. Configuring State Schemes components
- f. Identify and configure hierarchy of each state scheme
- g. Integration of PFMS with schemes specific software application
- h. Deployment and training of trainers
- i. Continuous support for implementation

At present, all ten (10) Pay & Accounts Offices of Department of Fisheries, five (5) PAOs are located in Delhi/NCR, one each in Mumbai, Chennai, Cochin, Kolkata and Nagpur are functioning successfully on PFMS. All payments are routed through PFMS and e-payments being directly credited into the beneficiary's bank account.

I. Employees Information System (EIS) Module of PFMS: This Module has been implemented in all Drawing & Disbursing Offices of Department of Fisheries.

II. CDDO Module of PFMS: CDDO module of PFMS has been rolled out in all Cheque Drawing and Disbursing Offices of Department of Fisheries.

III. Online Portal (Bharatkosh) for collection of Non-Tax Revenue in the Department

- a. The objective of Non-Tax Receipt Portal (NTRP) is to provide a one-stop window to Citizens/Corporate/Other users for making online payment of Non-Tax Revenue payable to Government of India (GoI).
- b. Non-Tax Revenue of Government of India comprise of a large bouquet of receipts, collected by individual departments/ministries. Primarily these receipts come from Dividends, Interest receipts, RTI application fee and many other such payments by citizens / corporate/other users.
- c. The online electronic payment in a

completely secured IT environment, helps common users /citizen from the hassle of going to banks for making drafts and then to Government offices to deposit the instrument for availing the services. It also helps avoidable delays in the remittance of these instruments into Government account as well as eliminates undesirable practices in the delayed deposit of these instruments into bank accounts.

- d. NTRP facilitates instant payment in a transparent environment using online payment technologies such as Internet Banking, Credit/Debit Cards.
- e. NTR Portal has been functional in the Department of Fisheries under new Ministry of Fisheries, Animal Husbandry & Dairying since its inception in FY 2019-20
- f. The collection of Non-Tax revenue of the Department in the current Financial Year 2020-21 up to 31st December, 2020 was Rs. 2.27 Crores.

IV. Expenditure, Advance and Transfer (EAT) Module of PFMS: One (01) Autonomous Body of Department of Fisheries has been on-boarded on Expenditure Advance Transfer (EAT) module of PFMS.

New developments in the Accounting Organisation are as follows:

I. Enforcement of enhanced security layers in online payment process in Public Financial Management System (PFMS)

In order to ensure safety measures on PFMS platform, the following features are being enforced for treasury operations:

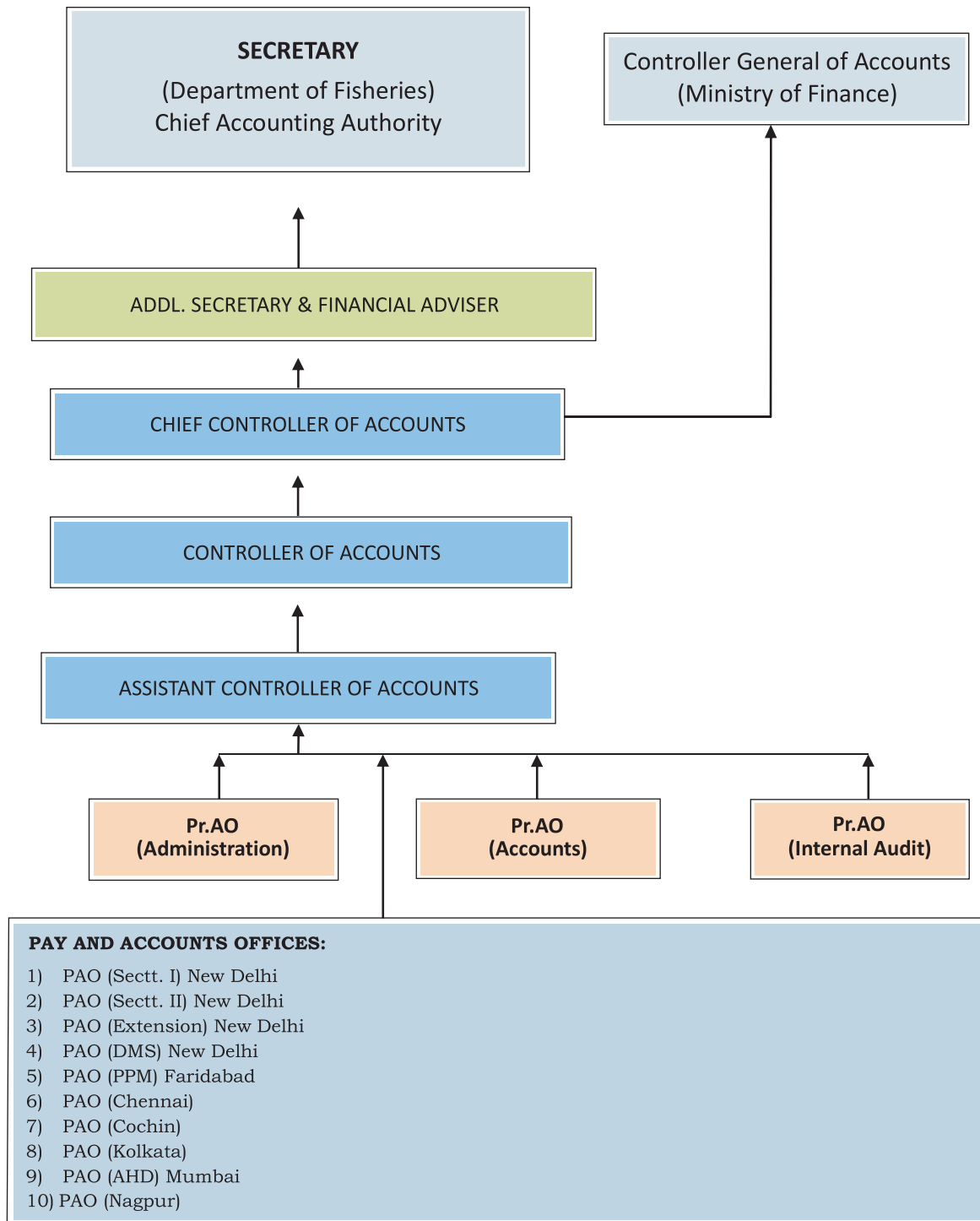
- a. Verification of each payment request with physical bill without fail before putting the digital signature by Pay & Accounts Offices (PAOs).
- b. Use of NIC/GOV domain e-mail IDs for user registration by the officials dealing with PAO and DDO module of PFMS.
- c. Immediate deactivation of user(s) found to be no longer active
- d. Deactivation of user ID/Digital key of PAO/AAO user type at the time permanent transfer/superannuation).
- e. Implementation of OTP based log in system on PFMS in phased manner.

II. Nation-wide Pension Adalat

Department of Fisheries organized Pension Adalat on 28th December, 2020 at Jeevan Tara Building where all the cases had been settled on spot.

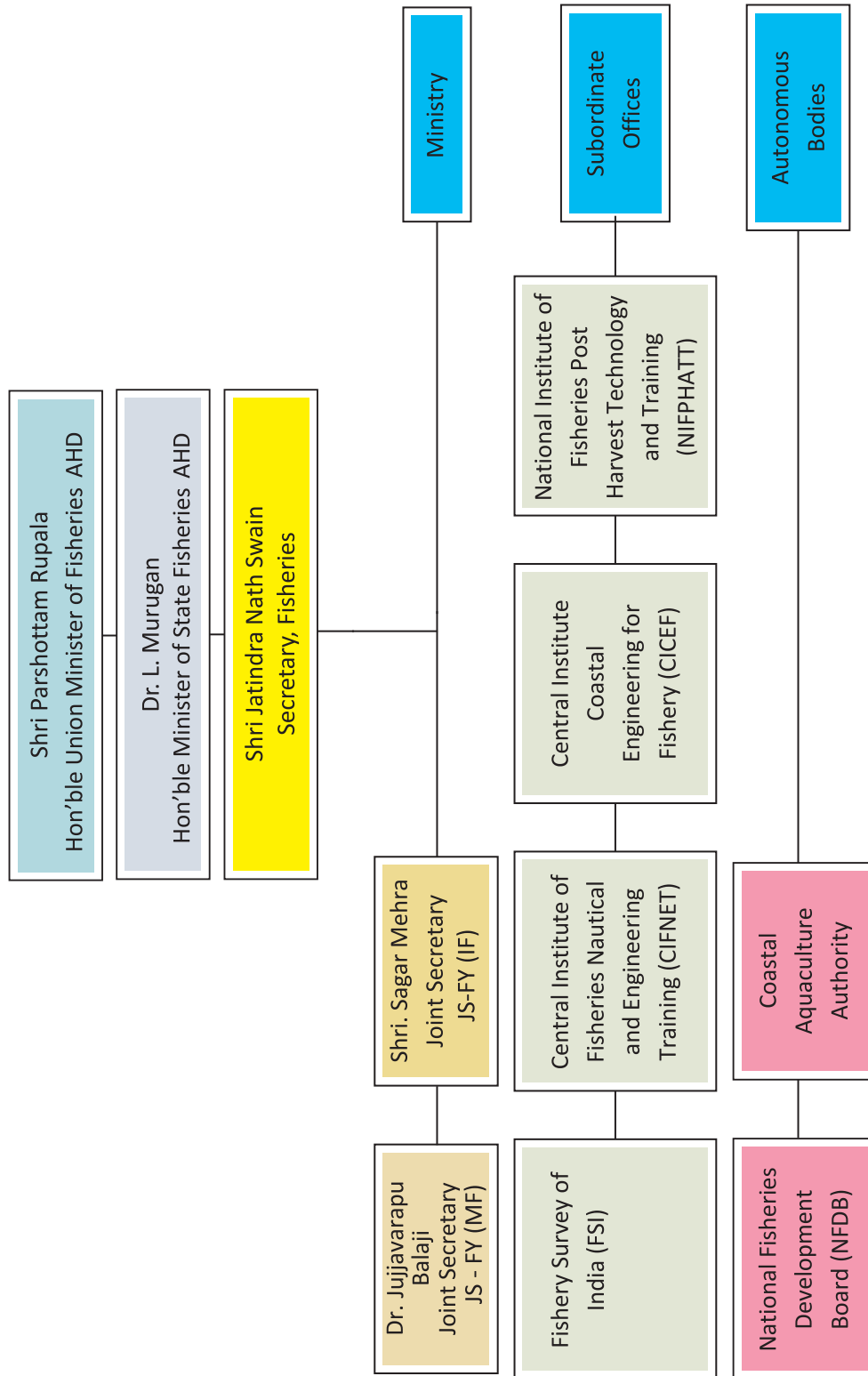
III. A workshop on GeM and New Pension Scheme was organized for all PAOs in collaboration with NSDL and GeM Officials.

Accounting Organization Setup in Department of Fisheries



ANNEXURES

Annexure - I

Organisational Structure of Department of Fisheries

Annexure-II

Financial Allocation and Expenditure during FY2020-21

Actual Expenditure as on 31st March 2021
(Rs. In Crores)

Budget Components	Budget Estimates	Revised Estimates	Actual Expenditure
Pradhan Mantri Matsya Sampada Yojana	560.00	700.00	699.72
National Fisheries Development Board	77.50	32.28	32.25
Coastal Aquaculture Authority	4.50	3.00	3.00
Fisheries and Aquaculture Infrastructure Development Fund	10.00	10.00	9.50
Directorate of Aquatic Animal Health and Quarantine	10.02	4.02	4.00
National Institute of Fisheries Post Harvest Technology and Training	12.87	12.87	10.03
Fishery Survey of India	84.01	85.44	72.71
Central Institute of Coastal Engineering For Fishery	5.57	3.96	3.80
Central Institute of Fisheries, Nautical & Engineering Training	36.54	36.86	30.55
Secretariate Economic services	24.00	22.00	18.28
Grand Total	825.01	910.43	883.84

Annexure-III**Significant Achievements under Pradhan Mantri Matsya Sampada Yojana (PMMSY) during 2020-21 (As on 31st March 2021)**

Proposals with an outlay of Rs. 9,114.90 Crores has been received from various States/UTs against which project proposals with total outlay of Rs. 2,746.85 Crores have already been approved along with release of Central Share of Rs. 955.25 Crores. The details of achievements made are as below:

INLAND FISHERIES

- a. 6,462.55 ha of pond area approved under inland aquaculture
- b. 1033 Biofloc units and 1,553 nos of Recirculatory Aquaculture Systems (RAS) have been sanctioned (which has already surpassed the total RAS units sanctioned during CSS: Blue Revolution, 522 nos)
- c. 6,292 nos of cages and 72.7 ha pens in reservoirs and other water-bodies approved
- d. 166 nos of fish/prawn hatcheries approved
- e. 393 ha of pond area approved under Saline-alkaline culture
- f. 9 nos Brood-bank facilities approved

MARINE FISHERIES

- a. 122 deep sea fishing vessel
- b. 267 up gradation of existing fishing vessels
- c. 2,755 Bio-toilets constructed in mechanized fishing vessels
- d. 616 nos of sea cage for fish culture
- e. 2 Small Marine finfish hatcheries
- f. 471 ha of pond area brought under brackish water aquaculture, 6 nos of brackish water hatcheries

FISHERMEN WELFARE

- a. 1,956 nos replacement boats and nets for fishermen
- b. Livelihood and nutritional support for 1,34,733 fishers' families for conservation of fisheries resources during fishing ban/lean period
- c. 31 nos Matsya Seva Kendra for Extension and support services

FISHERIES INFRASTRUCTURE

- a. 85 nos. ice plant/cold storages sanctioned
- b. 221 nos fish feed mill/plants.
- c. 7,238 units of fish transportation facilities viz., refrigerated (63) and insulated trucks (203), live fish vending center (230), auto rickshaws (1,254), motor cycles (3,199) and bicycles with ice box (2,289) etc. have been sanctioned.
- d. 626 units of fish retail markets (45) and fish kiosks including ornamental kiosks (581).
- e. 46 value added enterprise units have been sanctioned.

AQUATIC HEALTH MANAGEMENT

- a. 9 Disease diagnostic centre and quality testing labs approved
- b. 17 Mobile centres and testing labs approved
- c. 3 Aquatic referral labs have been approved

ORNAMENTAL FISHERIES

- a. 250 nos of Ornamental fish rearing units have been sanctioned
- b. 20 nos of Integrated Ornamental fish units (breeding and rearing) have been sanctioned
- c. 2 nos. Establishment of Fresh water Ornamental Fish Brood Bank
- d. 19 nos of Promotion of Recreational Fisheries unit approved

SEAWEED CULTIVATION

- a. 31,000 nos rafts approved for seaweed cultivation
- b. 22,531 nos monoline tubenet approved for seaweed culture

COLDWATER FISHERIES

- a. 50.6 ha area of new pond has been sanctioned
- b. 4 Trout hatcheries and construction of 1158 new raceway units have been sanctioned
- c. 19 nos of RAS units sanctioned for coldwater fisheries

IMPORTANT ACTIVITIES

- a. 9 nos of Brood banks (including seaweed banks) approved
- b. 2123 nos of Sagar Mitras approved
- c. 17 Reservoirs for Integrated Development of Reservoirs approved
- d. Fish Farmers Producers Organizations (FFPOs): State/UT-wise target for 720 FFPOs has been issued

- e. Matsya Seva Kendra : 21 units approved
- f. Integrated Coastal Villages : 1 unit approved
- g. Integrated Aqua Parks: Action plan prepared

Abbreviations

Full Form	Short Form
Government of India	GoI
Ministry of Fisheries, Animal Husbandry & Dairy	M/o F A H D
Department of Fisheries	DoF
Pradhan Mantri Matsya Sampada Yojana	PMMSY
Fisheries and Aquaculture Infrastructure Development Fund	FAIDF
Kisan Credit Card	KCC
National Fisheries Development Board	NFDB
Central Institute of Fisheries, Nautical & Engineering Training	CIFNET
National Institute of Fisheries Post Harvest Technology and Training	NIFPHTT
Fisheries Survey of India	FSI
Central Institute of Coastal Engineering for Fishery	CICEF
Coastal Aquaculture Authority	CAA
Departmental Accounting Organisation	DAO
Union Territories	UTs
Deep Sea Fishing Station	DSFS
Central Institute of Coastal Engineering for Fisheries	CICEF
Pre-investment Survey of Fishing Harbours	PISFH
Mechanized Fishing Vessels	MFVs
Swedish International Development Agency	SIDA
Multi- States Cooperative Society	MSCS
Budget Estimates	BE
Revised Estimates	RE
Million Metric Tonnes	MMT
Re-circulatory Aquaculture System	RAS
Fisheries Infrastructure Development Fund	FIDF
Eligible Entities	EEs

Full Form	Short Form
Nodal Loaning Entities	NLEs
National Bank for Agriculture and Rural Development	NABARD
National Cooperatives Development Corporation	NCDC
Reserve Bank of India	RBI
National Mari-culture Policy	NMP
Culture Based Fisheries	CBF
Capture Based Aquaculture	CBA
National Inland Fisheries and Aquaculture Policy	NIFAP
Ecosystem Approach to Fisheries	EAF
Scheduled Castes	SCs
Scheduled Tribes	STs
Other Backward Castes	OBCs
Persons with Disabilities	PWD
Right to Information	RTI
Central Public Information Officers	CPIOs
Gross Value Added	GVA
Exclusive Economic Zone	EEZ
Centrally Sponsored Scheme	CSS
Nucleus Breeding Centers	NBCs
Fish Farmers Producer Organizations	FFPOs
Monitoring, Control and Surveillance	MCS
Good Aquaculture Practice	GAP
Central Institute for Freshwater Aquaculture	CIFA
National Bureau of Fish Genetic Resources	NBFGR
Specific Pathogen Free	SPF
Post Larvae	PL
Rashtriya Krishi Vikas Yojana	RKVY
Nodal Loaning Entities	NLEs

Full Form	Short Form
Project Appraisal Committee	PAC
Project Monitoring Unit	PMU
Self Contained Proposals	SCPs
Detailed Project Reports	DPR
Integrated Multi Trophic Aquaculture	IMTA
Experimental Learning Programme	ELP
Central Salt and Marine Chemicals Institute	CSMCRI
Dr. Rajendra Prasad Central Agricultural University	RPCAU
National Freshwater Fish Brood Bank	NFFBB
Fish Market Price Information System	FMPIS
Aquatic Animal Health & Quality Testing Laboratory	AAH&QTL
Aquatic Animal Health Laboratories	AAHL
Central Institute of Fisheries Nautical and Engineering Training	CIFNET
Vessel Navigator Course	VNC
Marine Fitter Course	MFC
National Council for Vocational Training	NCVT
Training of Trainers	TOT
Shore Mechanic Course	SMC
Elementary Fishing Technology Course	EFTC
Advanced Fishing Technology Course	AFTC
Short Term training courses	STC
High Speed Demersal Trawl	HSDT
Dr. Mukundan's Institute for Food Safety & Technology	MIFT
Central Institute of Fisheries Nautical and Engineering Training	CIFNET
National Institute of Fisheries Administration and Management	NIFAM
Current Good Manufacturing Practice	CGMP
Agricultural technology Management Agency	ATMA
College of Agriculture	KAU

Full Form	Short Form
Offshore Fishing Station	OFS
Exploratory Fisheries Project	EFP
Indian Ocean Tuna Commission	IOTC
Marine Engineering Division	MED
Monitoring, Control and Surveillance	MCS
Code of Conduct for Responsible Fisheries	CCRF
Review of Operational and Scientific Activities	ROSA



DEPARTMENT OF FISHERIES
MINISTRY OF FISHERIES, ANIMAL HUSBANDRY AND DAIRYING
GOVERNMENT OF INDIA