



**ANIMAL HUSBANDRY, DAIRYING
AND FISHERIES DEPARTMENT**

FISHERIES

**POLICY NOTE
2020-2021**

Demand No.7

D.JAYAKUMAR
MINISTER FOR FISHERIES,
PERSONNEL AND ADMINISTRATIVE REFORMS

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GOVERNMENT OF TAMILNADU
2020

'TamilNadu has ranked 5th in India in fish production by producing 6.82 lakh ton fish as a result of slew of measures taken such as providing quality fish seeds to the fish farmers, introduction of new fish species, introduction of new technologies, establishing fish markets for hygienic handling of fish'

**-Hon'ble Chief Minister of
Tamil Nadu Speech on 9.2.2020**

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FISHERIES DEPARTMENT

POLICY NOTE

2020–2021

1. INTRODUCTION

The State of Tamil Nadu is endowed with marine, freshwater and brackish water fishery resources, which contributes towards food security and supports livelihood of more than 10 Lakh fisherfolk of the State. The fisheries sector has gained huge impetus in terms of its contribution towards the economy, nutritional security, rural employment generation and foreign exchange earnings.

Tamil Nadu has emerged as a pioneering State in India showing steady increase in fish production, sustainable utilization of resources, through implementation of innovative need based developmental and welfare schemes for the holistic development of this sector.

In order to fulfill the vision of the late Chief Minister of Tamil Nadu, Dr. J Jayalithaa, the Government of Tamil Nadu reiterates its commitment with the objectives of ensuring security and welfare of the fishermen of the State.

The Government of Tamil Nadu is also committed to protect the traditional fishing rights of fishermen and is taking earnest steps to safeguard life and property of our fishermen while fishing in our traditional waters. For the sustainable utilization of the underexploited deep sea fishery resources, incentivizing deep sea fishing is being promoted by the Government. The Government has established seamless communication networking system for ensuring safe fishing even in deep waters. The Government has newly created an exclusive marine enforcement wing for conservation of fishery resources and effective implementation of Tamil Nadu Marine Fishing Regulation Act (TNMFR), 1983.

To augment the quality and quantity of fish production in the State, the Government invests in necessary infrastructure facilities such as fishing harbours, fish landing centers, marketing infrastructures and fish processing parks. The Government is also providing financial assistance for building fishing crafts, motorization of traditional crafts and fuel to marine fishing crafts. To increase the inland fish production of the State, Government is strengthening the infrastructure for seed production and fish seed rearing in both Government and Private sector and also extends assistance for inputs such as seed, feed and fishing implements. Government is also promoting farming of fast-growing fish varieties through intensive fish culture techniques like Cage culture and Re-circulatory Aquaculture System. The Government has taken steps to expand niche sectors like brackish water aquaculture, mariculture including seaweed culture in the State.

India is the third largest producer of fish in the world and occupies the second position in aquaculture production during 2017-18. The total fish production of the country in 2018-19 was 13.42 million metric ton. Fish and fish products have presently emerged as one of the largest food produce group in agricultural exports from India, with 13.93 Lakh tons in terms of quantity and Rs. 46,589.37 Crore in value. This accounts for about 10% of the total export of the country and about 20% of the agricultural exports. The contribution of fisheries sector to the Gross Domestic Product (GDP) of the nation is 1% and the share of fisheries in agricultural GDP (AgGDP) is 5%.

Tamil Nadu ranks 3rd in total marine fish production of the country during 2017-18. The total fish production of Tamil Nadu was estimated at 6.90 Lakh tons during 2018-19. The State exported 1.29 Lakh tons of marine products and earned a foreign exchange of Rs.5,591.49 Crore during 2018-19.

The policy of Government is to augment the overall fish production of the State from all the available water resources. Hence, Government focuses on use of advanced technologies and best management practices to increase the fish production in the State sustainably in tandem with Sustainable Development Goals (SDG).

2. FISHERIES POLICY PERSPECTIVE

The Fisheries policy perspective of the Government of Tamil Nadu is to augment the fish production, enhance the income of the fishers and fish farmers and to ensure safety and security of fishermen.

2.1 Vision

"Ensuring safety, security and wellbeing of the fishers of Tamil Nadu by providing avenues for safe fishing, sustainable exploitation, optimal utilization and management of fishery resources".

2.2 Mission

To develop, manage, conserve and sustainable utilization of all aquatic resources for improving livelihoods, generating employment, food and nutritional security, economic prosperity and ensuring safety and security of fishers.

2.3 Major Policies

The major Fisheries policies of the Government are as follows:

1. Protection of traditional fishing rights and welfare of fishermen of Tamil Nadu.
2. Improving the living standards of fishers by implementing various welfare schemes.
3. Enhancing the productivity and production of fish from the Inland, Brackish and Marine resources.
4. Creation and upgradation of infrastructure facilities such as Government Fish Farms,

Fishing Harbours (FHs)/Fish Landing Centers (FLCs), cold chain, value addition, forward and backward linkages.

5. Generating additional rural employment opportunities through fish culture.
6. Empowerment of fisherwomen in livelihood activities with a special focus on fisher widows.
7. Bridging the gap between the demand and supply of fish for domestic consumption.
8. Harnessing the opportunity of expanding export market for high value fish and fishery products.
9. Conserving fishery resources, stock enhancement and management through enforcement of relevant Acts, Rules and Regulations.
10. Capacity building and skill upgradation for fishers and departmental officials for Human Resource Development, Research & Development and Technological Interventions for Fisheries development.

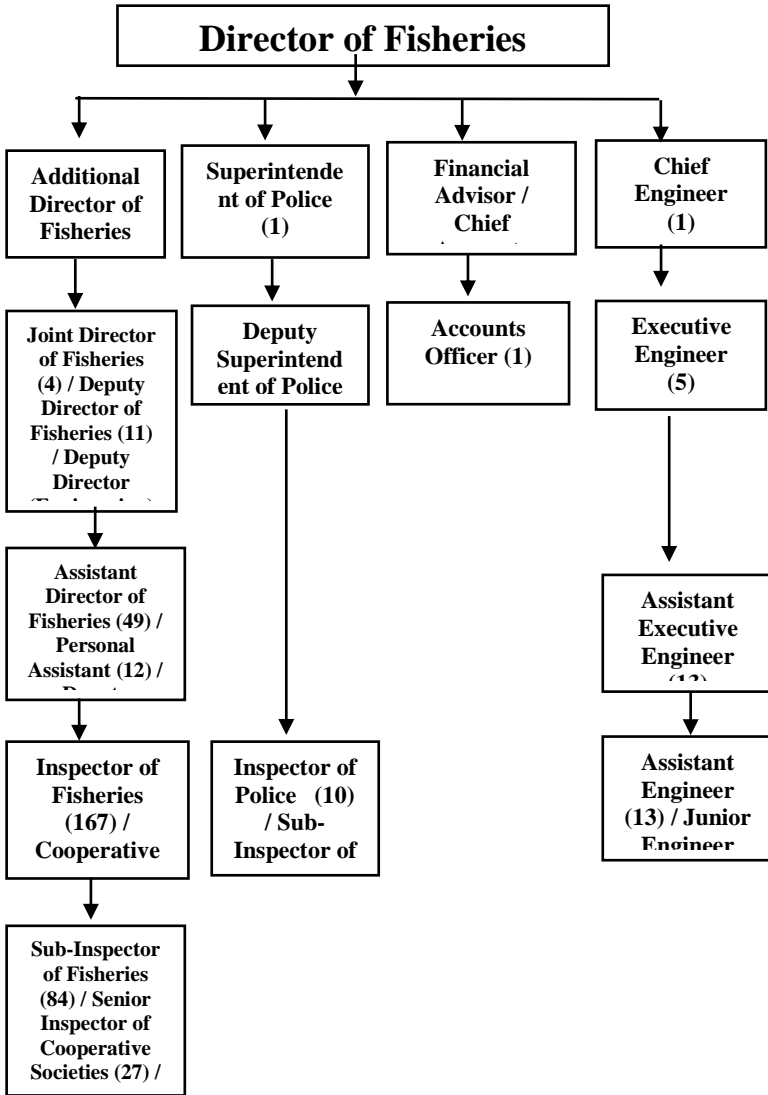
11. Re-assessment of the fishery resources and their potential in the State of Tamil Nadu.
12. Ensuring transparency through e-Governance.

3. ADMINISTRATIVE SET UP

The Department is headed by the Director of Fisheries. The Director of Fisheries is also the Managing Director of Tamil Nadu Fisheries Development Corporation Limited (TNFDC Ltd.), the Functional Registrar of all Fishermen and Fisherwomen Cooperative Societies including Tamil Nadu State Apex Fisheries Cooperative Federation Ltd. (TAFCOFED) and the Member Secretary of Tamil Nadu Fishermen Welfare Board (TNFWB).

Figure : 1

Organisational Set up of Department of Fisheries



The total sanctioned staff strength of Fisheries Department is 1,797. The category-wise staff strength is given in Table 1:

Table: 1
Category wise staff strength

Sl.No	Name of the Post	No. of Posts (Sanctioned+ deputation)
1.	Director of Fisheries	1
2.	Additional Director of Fisheries	2+2
3.	Joint Director of Fisheries	4+1
4.	Deputy Director of Fisheries	11+1
5.	Deputy Director (Personnel)	1
6.	Deputy Director (Engineering)	1
7.	Financial Advisor & Chief Accounts Officer	1
8.	Asst. Director of Fisheries / Asst. Director of Fisheries (Mechanical)	49+7 1
9.	Personal Assistant	12
10.	Deputy Registrar	1
11.	Accounts Officer	1

Sl.No	Name of the Post	No. of Posts (Sanctioned+ deputation)
12.	Inspector of Fisheries	167
13.	Cooperative Sub-Registrar	16
14.	Marine foreman	13
15.	Sub-Inspector of Fisheries	84
16.	Senior Inspector of Cooperative Societies	27
17.	Fishery Assistant	168
18.	Ministerial and field Staff	1028
	Total	1,587
Engineering Wing		
1.	Chief Engineer	1
2.	Executive Engineer	5
3.	Assistant Executive Engineer	13
4.	Assistant Engineer	13
5.	Junior Engineer	17
6.	Senior Draughting Officer	1
7.	Draughting Officer	8

Sl.No	Name of the Post	No. of Posts (Sanctioned+ deputation)
8.	Junior Draughting Officer	4
9.	Divisional Accountant	4
10.	Technical Assistant	23
11.	Ministerial and supporting staff	9
	Total	98
Marine Enforcement Wing		
1.	Superintendent of Police	1
2.	Deputy Superintendent of Police	1
3.	Inspector of Police	10
4.	Sub Inspector of Police	8
5.	Head Constable / Constable	53
6.	Police Driver	19
7.	Superintendent	1
8.	Assistant	2
9.	Camp Clerk	17
	Total	112
	Grand Total	1,797+11

4. FISHERIES SECTOR IN TAMIL NADU - AN OVERVIEW

Tamil Nadu is blessed with 1,076 km long coast line and 41,412 sq.km of continental shelf area with an Exclusive Economic Zone (EEZ) of 1.9 Lakh sq. km, contributing to 5.21 Lakh tons of marine fish production. This supports the livelihood of 10.48 Lakh marine fishers. There are 5,806 mechanized and 41,652 traditional fishing crafts which are actively engaged in fishing.

Tamil Nadu possess 3.83 Lakh ha. effective inland water resources comprising reservoirs, major irrigation tanks, minor irrigation tanks, short seasonal tanks, ponds, rivers, backwaters and other water bodies. An estimated brackish water area of 56,000 ha is under capture fisheries and an area of 6,236 ha is under coastal aquaculture production, mainly shrimp aquaculture. The inland fisheries sector supports

the livelihood of 2.36 Lakh inland fishers of the State.

4.1 Marine Fisheries

Tamil Nadu has the second longest coastline in the country with a coastal length of 1,076 km spreading across 13 coastal districts. An overview of the Marine Fisheries sector is given in Table 2:

Table: 2

Marine Fisheries Statistics- 2019-20

Coastal length	1,076 km
Exclusive Economic Zone (EEZ)	1.9 Lakh sq. km
Continental Shelf	41,412 sq. km
Coastal Districts	13
Fishing Villages	608

Marine Fisherfolk Population (Projected)	10.48 Lakh *
Fishing Crafts Registered (online): as on 29.02.2020	
1.Mechanised Fishing boats	5,806
2.Traditional Crafts (motorised and non-motorised)	41,652 (36,645+5,007)
Infrastructural Facilities	
Major Fishing Harbours	9 (Chennai, Thoothukudi, Nagapattinam, Colachel, Chinnamuttom, Mookaiyur, Poompohar, Muttom (PPP) & Thengapattinam)
Medium Fishing	3 (Pazhayar,

Harbours	Mallipattinam and Cuddalore)
Harbours under construction	3 (Thiruvottriyurkuppam, Vellapallam & Tharangambadi)
Fish landing centres / Jetties	43
Fish Landing Points	243
Marine Fish Production 2018-19	5.21 Lakh tons*
Marine Products Export (2018-19)	Quantity:1,28,845 MT ** Value: Rs.5,591.49 Crore

Source:

* Fisheries Department, Government of Tamil Nadu

**Marine Products Export Development Authority

4.2 Inland Fisheries

Tamil Nadu is endowed with rich inland water resources which includes reservoirs, long

seasonal and short seasonal irrigation tanks and ponds which are amenable to both capture and culture fisheries. An overview of the Inland Fisheries Sector is given in Table:3

Table: 3

Inland Fisheries Statistics- 2019-20

Inland Fishery Resources	3.83 Lakh ha
Reservoirs (78 Nos*)	62,015 ha
Large irrigation and short seasonal tanks	2,65,819 ha
Brackish water area	56,000 ha
Population of Inland fishers (projected)	2.36 Lakh*
<i>Inland Fisheries Infrastructure</i>	
<i>Fish seed production centers</i>	
i) Government fish farm	10

ii) TNFDC fish seed farm	1
iii) Private fish farm	49
<i>Fish seed rearing centres</i>	
i) Government fish farm	37
ii) Private fish farm	233
iii) TNFDC fish seed rearing farm	5
Inland Fish Production 2018-19 (provisional)	1.67 Lakh tons

Source:

* Fisheries Department, Government of Tamil Nadu

4.3 Coastal Aquaculture & Brackish water Fisheries

Coastal Aquaculture has become one of the viable potential areas of aquaculture in our State. The State is gifted with 56,000 ha of brackish-water area in the form of estuaries, backwaters and creeks.

The brackish water aquaculture activities are governed by the Coastal Aquaculture Authority (CAA) Act, 2005, its Rules and Guidelines for sustainable, eco-friendly shrimp farming. The District Level Committee (DLC) for the respective coastal district and State Level Committee undertakes the process of CAA registration for the brackish water Aquaculture farms in the State. In order to undertake *Penaeus vannamei* farming, Letter of Permission (LOP) is also provided by CAA on the recommendation of DLC and SLC. Under shrimp aquaculture activity, 1892 number of farms accounting for 3742 ha area have been registered in Coastal Aquaculture Authority. 63 Shrimp hatcheries in the State cater to the seed requirement of our needs as well as contribute to neighbouring states.

In order to promote this sector, the Government has completed a well-structured

Resource mapping study in six districts viz., Villupuram, Cuddalore, Thanjavur, Thiruvarur, Pudukottai and Thoothukudi at a total cost of Rs. 50 Lakh. Utilizing the advanced tools of Remote sensing and Geographical Information System (GIS), this study was undertaken to identify the untapped brackish water fallow lands suitable for aquaculture so as to create a road map for the coastal aquaculture development in the State.

In continuation, feasibility studies to develop aquaculture parks in the coastal districts have been taken up through expert consultants at a cost of Rs.20 Lakh. This study will aid in developing the unproductive, unutilized lands for productive purpose and create new entrepreneurial activity in the brackish water Aquaculture Sector.

The State is gifted to have the only Aquatic Quarantine Facility (AQF) in the country established by Rajiv Gandhi Center for

Aquaculture (RGCA), MPEDA in Department land at Neelangarai in Chennai to examine the disease infection in the imported shrimp brooders. The marine finfish seed hatcheries established in our State by Central Institute of Brackish Water Aquaculture (CIBA), Rajiv Gandhi Centre for Aquaculture (RGCA) and Central Marine Fisheries Research Institute (CMFRI) produce marine finfish seeds such as Cobia, Sea bass, Silver pompano offering diversified species for culture in the marine cages and in brackish water aquaculture systems.

4.3.1. Mariculture Activities

Mariculture activities such as., Seaweed culture, Cage culture, Bivalve culture have been successfully taken up by the State as a livelihood measure to the coastal fishers. Mariculture enables the fishers to switch over from the concept of capturing and diversification into stocking and harvesting. The TNJFU and the

Department of Fisheries have established marine finfish seed rearing facilities to cater the requirement of marine cage farming. This aids to conserve the fishery wealth and enhance the fish production.

Empowerment of Fisherwomen through seaweed culture in Ramanathapuram District under NFDB and state assistance was provided to 510 beneficiaries for 6,800 seaweed rafts. An exclusive sap extraction unit for producing value added products from seaweed has been established and is being operated by fisherwomen at a cost of Rs.3.96 Crore through FIMSUL- II.

In accordance to the National Mariculture Policy which is under consideration by the Government of India, the state is also promoting the mariculture sector through utilizing the available natural resources in sustainable manner.

The Government of Tamil Nadu, Indian Chamber of Commerce along with CSMCRI had organized the 3rd India International Seaweed Expo & summit during 30th and 31st January, 2020 at Chennai. The objective of this conference was to expand the Seaweed sector & Seaweed allied industries in our State. During this event, eight MoU's were signed by this department and other National and International seaweed companies in order to provide marketing avenues, production of value-added seaweed products through private entrepreneurs and to provide employment opportunities to the coastal fishers.

4.3.2. Cage Culture

Cage Farming has emerged as a viable option to increase production of high value marine finfish and shellfish. The Government of Tamil Nadu has always initiated innovative projects and novice projects to minimize the

fishing pressure of inshore waters. One such activity is cage farming which promotes fish production by stocking and harvesting which is a self-employment income generating alternate livelihood activity for the coastal fisher youth. Under FIMSUL II, cage culture has been proved successful among fisher youth in the districts of Kancheepuram, Pudukottai, Thoothukudi, Ramanathapuram and Kanniyakumari.

Cage culture offers tremendous scope to effectively utilise the vast natural resources of the state. The state has established a state of art Marine finfish hatchery for producing marine finfish seeds to cater to the needs of the marine cage farming at Mandapam in Ramanathapuram District.

4.3.3. Measures taken to contain use of Antibiotics in Aquaculture systems

Presence of antibiotic residue in food is a global issue. Farmed shrimp is the major export

item in shrimp exports under the sea food category earning huge foreign exchange. Use of antibiotics in shrimp aquaculture and seed production leads to rejection of shipments from India by the various importing countries. To address this issue in our State, the Government provided awareness training to 300 shrimp farmers from all the coastal districts. These farmers serve as master trainers to disseminate the knowledge to other farmers of their region.

Awareness programme on latest regulations governing the usage of antibiotics was provided through the technical personnel from Export Inspection Agency (EIA), Marine Products Exports Development Authority (MPEDA) and Coastal Aquaculture Authority (CAA). This programme will be continued every year.

5. SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals (SDGs) are universally agreed commitment of the member countries of the United Nations with aim to provide equitable opportunity to all living on the earth with the agenda of ‘leaving no one behind’. The Government of Tamil Nadu has actively involved in taking necessary steps for achieving 17 Sustainable Development Goals in 2030 in line with GOI.

Initiatives to enhance the fishery resources

The department is taking sincere effort to achieve the Sustainable Development Goals. The department has taken various measures like Maximum Sustainable Yield (MSY) in fishing, provide access for small scale artisanal fishers to marine resources and markets, enhance the conservation and sustainable use of oceans and their resources, adopting code of conduct for responsible fishing, enforcing Tamil Nadu Marine

Fishing Regulation Act, conversion of trawl fishing boats into deep sea fishing boats, implementation of fishing ban period, deployment of artificial reefs and ranching of fish seeds, seed production and culture of fish, development of cold chain facilities to promote hygienic fish marketing and by creating awareness and capacity building to fisherfolk on sustainable fishing practices and special allowances to marine fishermen families during lean fishing season to achieve the targets of Sustainable Development of Life below Water - Goal 14.

Goal No.1 Target: 1.1 By 2030, eradicate extreme poverty for all people everywhere addressed the following schemes:

Financial assistance to Marine Fishermen Families during Fishing Ban Period. In order to conserve the marine fishery resources, seasonal fishing ban is imposed Special Allowance to Marine Fishermen Families during lean fishing season.

To achieve target 2.3 By 2030, double the agricultural Productivity and income of all small scale food producers address the scheme namely tax exempted High-Speed Diesel (HSD) to fishermen.

Goal 13.1. Strengthen the resilience and adaptive capacity to climate related hazards is addressed through the schemes namely World Bank funded scheme CDRRP – Fisheries Management for Sustainable Livelihood - II (FIMSUL – II) project, activities improving the 63 socio – economic standards and safety of fishers such as capacity building, skill upgradation trainings, providing alternate livelihood assistance for sea weed culture.

To achieve target 14.2 By 2020, sustainably manage and protect marine and coastal ecosystems is addressed by ensuring coastal security, a scheme of “Online registration of fishing vessels” has been introduced in

Tamil Nadu. The Government of India introduced a Central Sector Scheme for “Issuance of Biometric Identity Cards to marine fishermen”.

To achieve target 14.4 by 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fished.

State specific Indicator 14.4.1 – Marine Fish Production, the department is taking effective measures to regulate fishing through enforcement of Tamil Nadu Marine Fishing Regulation Act, ban on pair trawling and ban on destructive gears, the target through a) Technological interventions to conserve fisheries resources. b) deployment of artificial reef c) sea ranching d) diversification of fishing methods e) reduction of fishing pressure by providing alternate livelihood activities to fisherfolk f) management of fisheries resources through participatory approach.

To achieve target 14.b-Provide access for small scale artisanal fishers to marine resources and markets is addressed through the schemes namely, inland fisheries, construction and renovation of ponds, establishment of fish seed hatcheries, construction and modernization of fish markets in 19 places with assistance from National Fisheries Development Board and State Government and subsidy assistance for procurement of FRP boats.

The department has formed Sustainable Development Goals (SDG) Unit vide G.O (Ms) No.184, Animal Husbandry, Dairying and Fisheries (A&C) Department, dated 26.12.2019. This unit shall work in close co-ordination with SDG cell under Planning and Development department, the Working Groups, State, District and Field officer and other institutions working on SDG.

Significant efforts are being taken by the department to achieve the sustainable development goals through implementation of various department schemes.

6. FOCUS ON KEY RESULT AREAS FOR SUSTAINABLE DEVELOPMENT

A comprehensive growth in the fisheries sector of the State has been planned and executed by identification of key result areas.

The objective of the exercise is to develop a sustainable development in fisheries by implementing the short term goals such as inland fisheries development by utilizing all the water resources available for fish culture, optimal utilization of marine resources, creating cold chain facilities for promoting hygienic fish marketing through development of necessary infrastructure and cold chain facilities, providing alternate livelihood activities through skill development, regularizing the brackishwater aquaculture

activities, ensuring the safety of fishermen through disaster management mechanisms, increasing the revenue of fishermen and fish farmer by developing sustainable fisheries development etc.,

The key result areas of the fisheries department are as follows.

1. Increasing the inland fish production by 2% on year to year basis up to 2024-25.
2. Increasing the brackish water aquaculture production by 4% on year to year basis.
3. Ensuring the availability of fish in domestic market by creating necessary infrastructure.
4. Doubling the income of fishermen engaged in deep sea fishing.
5. Increasing the export of fish and fishery products by 2% in volume & 1.5% in value by 2021-22.

6. Regulating all inputs in Aquaculture for better traceability.
7. Creating better frame work and monitoring, control & surveillance mechanism.
8. Promoting Alternative livelihood options for fishermen & women to get additional income.
9. Policies frame work to achieve sustainable development goal in fisheries.
10. Creating disaster response system to ensure safety of fishermen.
11. Creating of cluster farming and fish farmer networks for better returns.
12. Skill upgradation and promoting entrepreneurship in the sector.
13. Better service delivery of welfare schemes & transparency in delivering subsidies.

7. MAJOR ACTIVITIES OF THE DEPARTMENT

The following are the major activities of the Fisheries Department:

- i. implementing various social security welfare schemes.
- ii. Regulation and enforcement of fisheries Acts and Rules.
- iii. Conservation and management of fishery resources.
- iv. Rescue and rehabilitation measures during natural calamities and disasters.
- v. Ensuring fishermen safety at sea.
- vi. Protection of traditional fishing rights of Tamil Nadu fishermen.
- vii. Development of infrastructure facilities.
- viii. Hygienic marketing of fish and fishery products and cold chain facilities.
- ix. Development of inland fisheries and aquaculture.
- x. Special focus on livelihood of fisherwomen.

- xi. Capacity building and skill development in fisheries sector.
- xii. Outreach and extension activities.
- xiii. Management of Fisheries Cooperatives.

7.1 Marine Fisheries Activities

Welfare schemes for Marine fishers

The Government guided by the principles of the late Hon'ble Chief Minister of Tamil Nadu, Dr.J Jayalalithaa always accord highest priority to improve the living standards of fishers in the State by implementing several welfare schemes.

In order to ensure that the benefits of welfare schemes reach the beneficiaries in the shortest span of time in a transparent manner, the Government is crediting various welfare assistance directly to the bank account of the individual beneficiaries through National Electronic Fund Transfer (NEFT).

The Department is implementing online enrollment of beneficiaries through Common Service Centers (CSC) for all the welfare schemes to ensure transparency, facilitate hassle free and timely disbursement of relief to the beneficiaries with biometric authentication. During 2019-20, the National Fishermen Saving cum Relief scheme, Tamil Nadu Fisherwomen Savings cum Relief scheme, Fishing Ban Period Relief, Lean Period Relief Assistance and disbursement of all assistance under Tamil Nadu Fishermen Welfare Board were carried out through online services. Supply of subsidized kerosene and high-speed diesel scheme will also be implemented through Direct Benefit Transfer (DBT) system from 2020-21.

The State Government has released a total amount of Rs.296.85 Crore under various marine fisher welfare schemes implemented during 2019-20.

I. STATE SCHEMES

7.1.1 Financial assistance of Rs.5000/- to Marine Fishermen Families during Fishing Ban Period

In order to conserve the marine fishery resources, seasonal fishing ban is imposed every year since 2001. The fishing ban period is from April 15th to June 14th in the East Coast region and June 1st to July 31st in the West Coast region. The Government is implementing a scheme for providing relief assistance of Rs. 5,000/- to each marine fishermen family in coastal districts to mitigate their sufferings during fishing ban period.

During the year 2019-20, a sum of Rs.81.75 Crore has been credited directly into the bank accounts of 1,63,491 marine fishermen families of 13 coastal districts through NEFT. The scheme will be continued in the year 2020-21 as well.

7.1.2 Special Allowance of Rs.5000/- to Marine Fishermen Families during Lean Fishing Season

To alleviate the sufferings of the marine fishermen families during the lean fishing months, the Government is implementing a scheme for providing Special Allowance of Rs.5,000/- to each of the marine fishermen family in 13 coastal districts.

The Government has sanctioned an amount of Rs.88.41 Crore during 2019-20 towards disbursement of special allowance to marine fishermen families. As on 15.3.2020, Rs.65.07 Crore has been credited directly into the bank accounts of 1,30,133 marine fishermen families of 11 coastal districts through National Electronic Fund Transfer (NEFT). For Thoothukudi and Tirunelveli districts relief assistance will be completed by July, 2020.

The scheme will be continued in the year 2020-21 as well.

7.1.3 Savings-cum-Relief Scheme for Marine Fisherwomen

This scheme is implemented as a State scheme for Marine Fisherwomen following the same pattern of assistance on par with the Centrally Sponsored Scheme for marine fishermen.

The Government sanctioned a relief amount of Rs.61.31 Crore for disbursement to marine fisherwomen during 2019-20 at the rate of Rs.4500/- per beneficiary, out of which an amount of Rs.41.26 Crore was disbursed to 1,37,524 fisherwomen of 10 coastal districts through National Electronic Fund Transfer (NEFT). For Kanniyakumari district, disbursement of relief assistance will be completed by March, 2020 and for Thoothukudi and Tirunelveli districts disbursement of relief assistance will be completed by July, 2020.

This scheme will be continued in the year 2020-21 as well.

7.1.4 Supply of tax exempted High Speed Diesel (HSD) to fishing crafts

The Government of Tamil Nadu provides tax exempted High Speed Diesel to mechanized fishing boats at the rate of 18,000 litres / craft / year and to motorized country crafts at the rate of 4,000 litres/ craft/ year registered with the State Fisheries Department. During the year 2019-2020, 83,737 kilo liters of diesel has been supplied with a total subsidy amount of Rs.115.68 Crore.

This scheme will be continued in the year 2020-21 as well.

7.1.5 Supply of subsidized Industrial Kerosene to the Traditional Crafts

The Government provides industrial kerosene at a subsidized cost of Rs.25/- per litre at the rate of 3,400 litres/ craft / year to the traditional fishing crafts of Thoothukudi, Tirunelveli and Kanniyakumari districts. During the year 2019-20, 11,941 kilo liters of kerosene has been supplied with a total subsidy amount of Rs.26.06 Crore.

This scheme will be continued in the year 2020-21 as well.

In order to ensure that this scheme is implemented in a transparent manner and reach the beneficiaries directly, the Government will implement the scheme through Direct Benefit Transfer (DBT) system during 2020.

7.1.6 Daily relief to Marine Fishermen apprehended by other countries

The Government supports the families of fishermen who are apprehended by the neighbouring countries while fishing by providing daily allowance of Rs.250/- per day to the family. The scheme is being implemented through the respective District Collectors for providing immediate relief. A sum of Rs. 5.07 Lakh has been released during 2019-2020 as relief to 51 apprehended fishermen families.

7.1.7 Daily relief to the Families of Missing Fishermen

The State Government is providing daily allowance of Rs.250/-per day (i.e. Rs. 7,500/-

per month) to the families of fishermen who went missing while fishing at sea. During 2019-20, a sum of Rs.11.10 Lakh has been released as relief to the 23 missing fishermen families.

This scheme will be continued during 2020-21 as well.

7.1.8 Relief to the Families of Deceased / Injured Fishermen due to Shooting incidents by Sri Lankan Navy and others

The fishermen of coastal districts, who fish in the traditional waters of the Palk Bay are apprehended / harassed and sometimes even shot at by the Sri Lankan Navy.

The Government is providing an ex-gratia payment of Rs.3 Lakh from the Hon'ble Chief Minister's Public Relief Fund (CMPRF) to help the family of fishermen who die as a result of such an eventuality. In case, the deceased fisherman being the sole breadwinner of the family, an

ex-gratia amount of Rs.5 Lakh is provided. If the fishermen sustain major and minor injuries, an ex-gratia amount of Rs. 50,000/- and Rs. 20,000/- is provided respectively.

7.1.9. Corpus Fund for extending Financial Assistance for pursuing Higher Education to the Children of Missing /Deceased Fishermen due to Shooting while fishing

A Corpus fund of Rs.25 Lakh has been created in Tamil Nadu Fishermen Welfare Board to meet the full expenses for the higher studies of the children of the families of missing / deceased fishermen due to shooting incidents, while fishing.

7.1.10 Providing 50% Subsidy for Fishermen to procure New Tuna Long liner-cum-Gill netter Boats

In order to safeguard the coastal fishery resources for sustainable fisheries and to support the fishers to harvest the unexploited/ underexploited oceanic fishery resources like

Tuna, the late Hon'ble Chief Minister Dr. J Jayalalithaa announced a pioneering scheme of 'Providing 50% subsidy for fishermen to procure New Tuna Long Liner-cum-Gill Netter' boats for the first time in the Country during the year 2014-15. Under this scheme 50% of the estimated unit cost of Rs.60 Lakh up to a maximum of Rs.30 Lakh / unit is provided as subsidy for construction of new Tuna Long liner cum-Gill Netter boats.

Under this scheme, administrative sanction for a sum of Rs.51.30 Crore was accorded by the Government for constructing 171 boats and Rs.17.10 Crore has been released as first installment. Work orders have been issued for the construction of 110 boats. An amount of Rs.16.99 Crore has been released as subsidy to 54 completed boats and 56 boats are in various stages of construction. Work order will be issued for the remaining 61 boats after scrutinization.

II. Centrally Sponsored Schemes

7.1.11 National Fishermen Savings-cum-Relief Scheme (NFSRS) for Marine Fishermen

National Fishermen Savings-cum-Relief Scheme is being implemented with the enhanced relief amount of Rs.4,500/- per beneficiary. During 2019-20, an amount of Rs. 63.68 Crore was sanctioned by the Government, out of which an amount of Rs. 42.68 Crore was disbursed to 1,42,268 fishermen of 10 coastal districts through National Electronic Fund Transfer (NEFT). Disbursement of relief assistance for Kanniyakumari District will be completed by March, 2020 and for Thoothukudi and Tirunelveli districts will be completed by July, 2020.

This scheme will be continued in the year 2020-21 as well.

7.1.12 Group Accident Insurance Scheme for Fisherfolk

To provide risk coverage to the fishers in the event of accidental death, missing and permanent disability a relief assistance of Rs.2,00,000/- is provided to the fisher and Rs.1,00,000/- is provided towards partial disability by the Government of India under “Pradhan Mantri Suraksha Beema Yojana” (PMSBY) implemented through FISHCOPFED (National Federation of Fishers Cooperatives Ltd., New Delhi). The premium amount of Rs.12/person is equally shared between Central and State Governments. Also, a Special Contingency Policy (SCP) scheme towards hospitalization expenses subject to a maximum of Rs.10,000/- is being provided, for which an additional premium of Rs.3.54 per person equally shared by Central and State Governments is paid from the year 2019-20 onwards.

A sum of Rs.40.72 Lakh has been paid to FISHCOPFED as State share towards insurance premium covering 5,24,054 fishers for the period from 1.6.2019 to 31.5.2020.

This scheme will be continued in the year 2020-21 as well.

7.1.13 Motorization of Traditional Crafts

The Government is providing subsidy assistance towards purchase of Out Board Motors (OBM) / Inboard Engines (IBE) to be fitted in the traditional crafts of fishermen with 40% subsidy assistance, subject to a maximum of Rs.48,000/- per unit. During the year 2019-20, under Blue Revolution Scheme, 1300 OBM/IBE were already supplied to the traditional crafts fishermen at a cost of Rs.6.35 Crore. Also, 500 OBM/IBE have been supplied at a total subsidy of Rs.2.40 Crore under National Agriculture Development Programme (NADP).

7.1.14. Promotion of Deep Sea Fishing Practices

There are around 5,806 mechanized fishing boats engaged in fishing in the State of Tamil Nadu. Most of the mechanized fishing boats were engaged in trawling. The fishing by trawling is considered to be an unsustainable and unviable fishing practice. The continuous trawling operations has caused depletion of its precious marine fishery resources.

In order to put an end to the unsustainable fishing practice of bottom trawling, the Government of Tamil Nadu has taken various measures to phase out trawling and to simultaneously manage the fishery resources in the inshore waters. To diversify the fishing trawlers into deep sea fishing, Government of Tamil Nadu is implementing various flagship schemes and also developed infrastructure facilities to handle tuna and deep sea catches.

The Government of Tamil Nadu is implementing a scheme of providing 50% subsidy assistance subject to a maximum of Rs.30 Lakh to fishermen towards construction of new Long liner-cum- Gillnetter Boats at a total amount of Rs.60 Lakh. Under this scheme construction of 54 deep sea fishing boats have been completed and 56 boats are under various stages of construction. An amount of Rs.16.99 Crore as subsidy have been released so far.

The Government is also implementing a scheme of Diversification of trawl fishing boats from Palk Bay into deep sea fishing by providing subsidy assistance of 70% subject to a maximum of Rs.56 Lakh to fishermen of Palk Bay Districts. Under this scheme, construction of 22 deep sea fishing boats have been completed and 29 boats are under various stages of construction. Rs.15.78 Crore as subsidy have been released so far.

The Government of India is also implementing a scheme of conversion of trawlers into resource specific deep sea fishing vessels with 100% subsidy assistance with a ceiling of Rs.15 Lakh per vessel.

In order to provide suitable berthing facilities for the deep sea fishing boats and to handle fish catches, a Fishing Harbour has been constructed at Mookaiyur in Ramanathapuram District at a cost of Rs.113.90 Crore. A Fish Landing Centre to handle tuna and tuna like fishes is under construction at Kunthukal in Ramanathapuram District at a cost of Rs.74 Crore.

The Central Institute of Fisheries Nautical and Engineering Training (CIFNET) has imparted on board training and skill development in deep sea fishing activities such as operation of long line, gill net, hygienic handling of deep sea catches to 304 Fishermen in 22 batches so far and is being continued.

Government has undertaken various feasibility studies to provide Cold Chain facilities and export infrastructures and also studying the feasibility of creating exclusive fish processing corridor from Ramanathapuram to Kanniyakumari.

Communication equipment were also supplied at subsidized cost to the deep sea fishing boats in order to ensure the safety and security of deep sea fishing boats. The Government has provided 160 satellite phones, 200 NAVIC and 80 NAVTEX units to 80 clusters of deep sea fishing boats. It is also proposed to distribute another 500 satellite phones to deep sea fishing boats with 75% subsidy during the year 2020.

7.1.15. Subsidy Assistance for Diversification of Trawl Fishing in Palk Bay Districts to Deep Sea Fishing

The Government of Tamil Nadu is implementing the flagship scheme on 'Diversification of Trawl

fishing in Palk Bay districts to deep sea fishing' with Central and State Government's financial assistance for a unit cost of Rs 80 Lakh per boat with subsidy assistance. Out of the total cost of Rs.80 Lakh, the Government of India provides 50% of unit cost @ Rs.40 Lakh, the Government of Tamil Nadu provides 20% of unit cost @ Rs.16 Lakh, 20% of unit cost @ Rs.16 Lakh sourced from Institutional financing and 10% of unit cost @ Rs.8 Lakh is borne by the beneficiary.

The Government has sanctioned Rs.286 Crore for diversification of 500 Palk Bay trawlers in the first phase.

Out of 666 applications received from fishermen, tripartite agreements have been signed for 91 beneficiaries and work order have been issued for 74 boats. Construction of 22 deep sea fishing vessels have been completed and launched and the remaining boats are in various stages of construction.

7.1.16 Subsidy assistance for construction of FRP boats upto 10m OAL including Engines, Nets & Insulated Ice Boxes as a replacement of Traditional/ Wooden Boats

Under CSS-Blue Revolution scheme, an amount of Rs.8.50 Crore was sanctioned for procurement of 200 FRP boats upto 10m OAL, which includes OBM/IBE, fishing nets and insulated ice boxes as a replacement to traditional /wooden boats to the artisanal fishermen of Tamil Nadu. Under this scheme, 40% subsidy assistance to a maximum of Rs.1.70 Lakh per unit is provided. Construction of 100 boats have been completed during 2019-20. Additional 100 boats will be constructed during 2020-21

7.2 Regulation and Enforcement

7.2.1 Online Registration of Fishing Vessels

For ensuring coastal security, online registration of fishing vessels was introduced and

implemented at a cost of Rs.1.33 Crore in Tamil Nadu. A total of 5,806 mechanized fishing boats, 36,645 motorized and 5,007 non-motorized traditional crafts have been registered under online registration scheme as on 15.3.2020.

7.2.2 Issuance of Biometric Identity Cards to Marine Fishermen

The aftermath of 26.11.2008 Mumbai terrorist attack, the Government of India introduced a Central Sector Scheme on "Issuance of Biometric Identity Cards to marine fishermen" to ensure coastal security. A sum of Rs.1.16 Crore was allocated for this purpose to Tamil Nadu. 1,86,523 Biometric ID cards to the marine fishermen and 1,63,221 cards to the marine fisherwomen have been issued so far. 222 card readers have been supplied to Department officials and law enforcing agencies.

7.2.3. Establishment of dedicated Marine Enforcement Wing for enforcing TNMFR Act

In recent years, increasing size and capacity of fishing fleets resulted in over exploitation of fish stock.

At present TNMFR Act is being enforced in 13 coastal districts by 18 Authorized officers/ Assistant Director of Fisheries and monitored by 7 adjudicating officers / Regional Joint Director of Fisheries / Deputy Director of Fisheries and overall supervision by the Appellate Authority viz., the Director of Fisheries.

To enforce the Act and Rules and to handle inter sector conflicts and law and order issues arising due to fishing and related activities, Government have issued administrative sanction for the establishment of 112 police personnel for Marine Enforcement Wing in the Fisheries Department, similar to the intelligence wing functioning in other departments.

For the enforcement of TNMFR Act along the coastline of 13 districts in the State, the Marine Enforcement Wing has been established with 1 Superintendent of Police, 1 Deputy Superintendent of Police, 10 Inspectors of Police, 8 Sub-Inspectors of Police, 53 Police Constables and 19 Police Drivers to a total of 112 posts were created permanently for establishing the Marine Enforcement Wing.

The Police personnel sanctioned additionally to the State Police Department will be deputed to Fisheries Department. The officers under this wing shall be on the uniform codified for the respective ranks in the Police Department with an additional badge containing the logo and description of "Marine Enforcement Wing" on the right fore-arm.

The main functions of the Marine Enforcement wing is to conduct patrolling in the sea to enforce the regulations of fishing and to prevent illegal fishing, destructive fishing and the use of banned fishing nets and to convey the

information about the anti-social activities and intelligence gathered during patrolling to Coast Guard and local Police authorities for further necessary action.

Government have accorded financial sanction of a sum of Rs.8.65 Crore towards recurring expenditure related to Marine Enforcement Wing. Also, a sum of Rs.1.90 Crore was sanctioned for purchase of vehicles for the use of Marine Enforcement Wing. Accordingly, 19 vehicles were purchased. The Marine Enforcement Wing in Fisheries Department is functioning from 1.12.2019.

7.3 Conservation and Management of Fishery Resources

Conservation and stock enhancement measures such as imposing seasonal fishing ban, stock enhancement, sea ranching programme, habitat development like installation of artificial reefs and diversified fishing methods are being implemented by the Fisheries Department.

Marine fisheries sector is effectively managed with an Eco system approach and people's participatory approach under co-management principles. This involves the stakeholders to conserve the fisheries resources effectively in their region.

7.3.1 Implementation of Uniform Fishing Ban Period

To conserve the marine fishery wealth, seasonal fishing ban is imposed every year during the fish breeding season since 2001. The fishing ban period is enforced for 61 days (i.e., from April 15th to June 14th in East Coast region and from June 1st to July 31st in the West Coast region).

7.3.2 Ban of destructive fishing gears

In order to conserve the marine resources in territorial waters, to protect the interests of the traditional fishermen, to maintain law and order problem in the territorial waters, to

conserve the ecology and the ecosystem, the Government has imposed a ban on the use of purse seine and pair trawl and its generic type by any type of fishing vessel in Tamil Nadu Coast.

Further, Monitoring committee has also been formed in the coastal districts comprising officials from Indian Navy, Indian Coast Guard, Revenue, Police, Coastal Security Group and Fisheries Department to curb the illegal usage of banned destructive fishing nets.

7.3.3 Conservation of Sea turtles

To conserve the sea turtles, the Government has notified to fix the Turtle Excluding Device (TED) before the Cod end of Trawl net during specified period and prohibited fishing in a radius of 5 nautical miles around the potential turtle nesting and breeding grounds during the breeding season i.e., for a period of four months from the 1st January to 31st April of every year (both days inclusive).

7.4 Marketing of Fish and Fishery Products

7.4.1 Promotion of Domestic Fish Marketing

The Tamil Nadu Fisheries Development Corporation Limited (TNFDC) and Tamil Nadu State Apex Fisheries Cooperative Federation Limited (TAFCOFED) are actively engaged in domestic fish marketing of quality fish at an affordable price to the consumers. Chain of fish retail outlets including mobile units are being operated by both TNFDC and TAFCOFED. TNFDC is doing online fish marketing in Chennai city through its website www.meengal.com. Similar new initiatives will also be continued during the current year.

7.4.2 Modernization of Fish Markets

Fish markets are being established/renovated with modern hygienic handling facilities with the assistance from National Fisheries Development Board (NFDB) and State

Government, for supplying good quality fish to the consumers and to ensure fair and remunerative price to the fishers for their produce. There are about 495 fish markets in the State.

The NFDB financial assistance was received for modernization/ new construction to the tune of Rs.5.21 Crore and the State Government share of Rs. 5.08 Crore was released to the Civic Bodies/Municipal Corporations. 17 new markets have been constructed/ modernized and still more fish markets in major cities and towns have been proposed for modernization/ new construction to ensure hygienic fish handling and to provide quality fish and fishery products to the consumers.

7.4.3 Quality Control and Traceability of Fishery Products

The Government is undertaking several measures to improve the infrastructure facilities,

value chain and other important attributes of fish marketing to ensure that producers get better value for their catches and consumers get high quality fish. For better quality control and to ensure traceability of products to meet international standards for getting maximum value for fishery products, the Government will take steps to integrate with food quality standards/bench marks prescribed by national and international agencies.

The Department of Fisheries is conducting regular awareness and sensitisation programmes to fishermen on hygienic handling, on board cleanliness, maintenance of fish landing infrastructures and fish markets etc.

7.4.4 Fish Consumption Pattern of the State

For the year 2018-19, the total fish production of the State is 6.9 Lakh tons. Of which, 4.71 Lakh tons of fish are consumed as

fresh, 0.83 Lakh ton are consumed as dried and salted form and 0.14 Lakh ton are used for miscellaneous purpose. State Fisheries Sector contributes 0.49% to the Gross State Domestic Product (GSDP). The per capita consumption of fish of the state is 9.1 Kg. In the State, fish consumption is promoted through modernized and hygienic fish markets, fish stalls and Mobile vehicles and online marketing.

7.4.5 Export of Fish and Fishery Products

Fish and fishery products have presently emerged as the largest group in agricultural exports from India, with 13.93 Lakh tons in terms of quantity and Rs. 46,589.37 Crore in value. More than 50 different types of fish and shellfish products are being exported to 75 countries around the world.

The State exported 1.29 Lakh tons of marine products and earned a foreign exchange of Rs.5591.49 Crore during 2018-19. Marine

Products are principally supported by Frozen Shrimp, Frozen Finfish, Frozen Cuttle Fish, Frozen Squid, Dried fish, Live fish and Chilled varieties. The major markets for fishery products are USA, Japan, European Union, China, South East Asia and Middle East countries.

The Government of Tamil Nadu is promoting export of fish and fishery products from the State by providing shore infrastructure facilities on par with international standards and has an excellent landing and shore infrastructure in 9 major fishing harbours, 3 medium fishing harbours and 43 fish landing centres, which ensure hygienic fish handling and high fish quality. Chennai and Tuticorin are major export oriented fish processing hubs of the state. There are 10 chilled storage units, 85 fish processing plants and 87 cold storage facilities in Tamil Nadu.

Tamil Nadu is focusing on diversification into deep sea fishing to exploit deep sea resources optimally and to promote export of the state. Furthermore, the Government of Tamil Nadu is under the process of evolving new policies in mariculture activities to enhance the contribution of fisheries sector to the state export.

7.5 Disaster preparedness, Rescue and Rehabilitation Measures

To ensure the safety and security of fishermen at times of natural disaster and adverse weather conditions, the Department of Fisheries is undertaking the following initiatives:-

- a. Dissemination of weather information to fishers.
- b. Established a Central Control Room at the Directorate of Fisheries with essential communication equipments and is functioning round the clock provided with a

dedicated telephone line (No.044-24341757).

- c. Co-ordinating with all security agencies such as Indian Navy, Indian Coast Guard and Coastal Security Group, in Search and Rescue (SAR).
- d. Necessary communication on weather warnings are provided to the fishermen during inclement weather and natural disasters to ensure safe berthing of their boats.
- e. 30 Inflatable Rubber boats have been procured and supplied to the coastal districts for use in times of flood and cyclone.
- f. Due to the efforts taken by the Department, 1300 deep sea vessels and 15000 fishermen were rescued safely brought to the nearest shore during 3 cyclones formed in Arabian Sea in October, 2019.

7.6 Measures for communication and safety of fishermen at sea

7.6.1 Providing Wireless communication networking facilities

Under the FIMSUL-II project, "Providing Wireless communication facilities to ensure safety of Tamil Nadu Marine Fishermen" at a cost of Rs.66.14 Crore has been sanctioned.

Establishing networking facilities throughout the coastal belt of Tamil Nadu covering all the 13 districts is essential for effective functioning of VHF equipment. In this regard, communication towers were established covering the 13 coastal districts of Tamil Nadu. New 100 metre towers have been constructed in 7 places (Pulicat in Thiruvallur district, Nemmeli in Chengalpattu district, Parangipettai in Cuddalore district, Kodyakarai in Nagapattinam district, Kattumavadi in Pudukkottai district, Vembar in Thoothukudi district and Uvari in Tirunelveli district).

In addition, 6 BSNL towers located at Marakanam in Villupuram district, Kohlas nagar in Puduchery district, Kathanchavadi in Nagapattinam district, Kayalpattinam in Thoothukudi district, Muttom and Chinnamuttom in Kanniyakumari district and two police tower (Nagapattinam & Chennai) have been taken on rental basis to provide communication facilities to fishermen.

Control rooms have been established in the above 15 places with shore station equipment for effective communication between shore station and fishing boats inside the sea. Fisheries department is providing information regarding weather warning and other important messages to fishermen through these control rooms. A central control room has been established at the Directorate of Fisheries, Chennai.

Department of Fisheries provided 17,539 nos. of VHF sets among which 15,004 Nos of 5-watt hand held VHF sets to motorized fishing crafts at 100% grant and 2,535 Nos of 25-watt VHF boat sets to mechanized fishing crafts at 75% subsidy. This seamless communication facilities with provision of VHF sets to a large number of fishermen is the first of its kind in the World, which shows the commitment of the State Government on the safety and security of the fishermen at sea.

7.6.2 Installation of “Transponders” in Mechanized fishing boats

The Government of India, through ISRO (Indian Space Research Organization) have developed Transponders as a means of communication and tracking system for deep sea going fishermen which will help monitoring the fishing vessels and render assistance at the time of distress in deep sea up to 200 Nautical Miles. 507 mechanized fishing boats of Tamil Nadu from

Chennai, Cuddalore, Nagapattinam, Thoothukudi and Kanniyakumari districts have been fitted with transponders for conducting trials.

Transponders will be provided to all mechanized fishing boats operated in Tamil Nadu in the forth coming years.

7.6.3 Providing Satellite Phones, "NAVIC" and NAVTEX

During 2018-19, Communication equipments viz, 160 Satellite phones, 200 NAVIC and 80 NAVTEX Message Receivers have been installed in 80 clusters of boats engaged in deep sea fishing with 100% subsidy assistance at a total cost of Rs.2.28 Crore.

7.6.4 Launching of WebGIS based Mobile app "Thoondil"

To ensure the safety and security of the fishermen by monitoring the movements of fishing vessels and registering the crews venturing for fishing, the Department of Fisheries

in association with the National Centre for Coastal Research (NCCR), Ministry of Earth Sciences (MoES) and Indian National Centre for Ocean Information Services (INCOIS) Government of India, launched a Mobile and web based application “Thoondil” WebGIS based Decision Support System on 15.11.2018. “Thoondil” - WebGIS based Decision Support System was developed to assist the State administration and equip the fishermen by dispensing vital information on real time positioning, navigation to safe locations, facility to mark fishing grounds, Potential Fishing Zones (PFZ) from INCOIS, details on weather forecast and trip records which can be used by the fishermen at sea to ensure their own safety.

The details of mechanized fishing boats and crew operated in Tamil Nadu is being registered in “Thoondil” application for better monitoring and surveillance.

7.7 Relief measures to the victims of disasters

7.7.1 Revolving Fund

Revolving Fund has been created by the Government of Tamil Nadu for providing immediate relief assistance to the fishermen whose boats/ fishing implements/ houses are damaged due to unforeseen circumstances. An amount of Rs.10 Lakh each to the 13 coastal Districts totaling to Rs.1.30 Crore was provided to the coastal District Collectors.

During 2019-20, Rs.5.78 Lakh has been released as relief to 31 families of Tiruvallur and Ramanathapuram Districts whose fishing boats were damaged due to unforeseen weather conditions.

7.7.2 Relief measures to the victims of "Gaja" cyclone

To provide relief assistance to the fishers affected by the GAJA cyclone, the Government

released a total sum of Rs.53.71 Crore under State Disaster Relief Fund (SDRF) and State funds towards the relief assistance. Relief assistance was provided to 195 fully damaged mechanized fishing boats, 1429 partially damaged mechanized fishing boats, 1051 fully damaged FRP vallams, 2942 partially damaged FRP vallams, 6157 engines and 10648 fishing nets to resume their fishing activities.

As a special consideration, the Hon'ble Chief Minister of Tamil Nadu ordered to enhance the relief assistance to the fully damaged FRP vallams with nets from Rs.85,000/- to Rs.1,50,000/- benefitting 1,051 fishermen.

The Government also released Rs.36.03 Lakh towards expenditure for retrieval of fishing boats which were thrown into faraway places, buried in sand and entangled in bushes along the shore due to Gaja cyclone.

7.7.3 “Gaja” Cyclone Reconstruction, Rehabilitation and Rejuvenation Project (GRRRP)

To rehabilitate, reconstruct and rejuvenate the livelihood of fishers of Gaja Cyclone affected districts, the Hon’ble Chief Minister made an announcement in the floor of assembly on 18.07.2019 to sanction an amount of Rs.31.15 Crore towards implementation of Gaja cyclone Reconstruction, Rehabilitation and Rejuvenation Project (GRRRP). This project includes 7 components to improve the livelihood of Gaja Cyclone affected fisherfolk and the details are as follows:

Table: 4**(Rs. In Lakh)**

Sl. No.	Components	Government share (75%)	Beneficiary share (25%)	Total amount
1.	Establishment of Hygienic fish drying platforms and solar dryers	272.28 (100%)	-	272.28
2.	Deployment of Artificial Reefs as a measure of restoration of marine environment	1850.00 (100%)	-	1850.00
3.	Establishment of Marine/ Brackishwater fish seed bank	593.46	197.82	791.28
4.	Integrated Mariculture Systems	156.45	52.15	208.60
5.	Promotion of Bivalve farming as alternative livelihood	48.24	16.08	64.32

Sl. No.	Components	Government share (75%)	Beneficiary share (25%)	Total amount
6	Providing Mobile fish kiosks to the fisher youth / fisherwomen	180.00	60.00	240.00
7.	Promotion of Seaweed culture	15.00	4.50	19.50

- Hygienic fish drying platforms & solar dryers are being constructed in Nagapattinam, Thanjavur, Pudukottai, Cuddalore and Ramanathapuram districts. Works are in progress.
- Artificial reefs will be deployed in 60 locations of the Gaja affected districts viz., Cuddalore, Pudukottai, Ramanathapuram, Thanjavur, Thiruvarur and Nagapattinam. This project is being implemented with the technical consultancy services of Central Marine Fisheries Research Institute (CMFRI) and fabrication of modules has been entrusted to

Engineering wing of the Department and the works are in progress.

- For enhancement of fisherfolk livelihood the integrated component viz., Establishment of Marine fish seed banks, Integrated Mariculture Systems and Mobile Kiosks for fisher youth are provided to a Joint Liability Group comprising of 15 members. 27 such units will be formed in the 5 Gaja Cyclone districts of Cuddalore, Pudukottai, Ramanathapuram, Thanjavur and Nagapattinam.
- 72 women groups will be supplied with 1200 rafts for seaweed farming as an alternative livelihood activity.
- 6 women groups of Pudukottai and Cuddalore districts will be provided with 144 rafts for bivalve farming.

7.7.4. Relief measures to the victims of "Ockhi" Cyclone

Government had released an amount of Rs 40.08 Crore to 27 families of deceased fishermen and 177 families of missing fishermen who were construed as dead due to Ockhi cyclone. An amount of Rs.8.44 Crore was provided as relief assistance for the damaged boats.

159 legal heirs of the deceased / missing fishermen were given employment orders in various Government organizations.

As a special consideration, work orders were issued to 17 fishermen families who lost their fishing boats in "Ockhi" cyclone under the scheme of construction of Gill Netters cum long liners with 50 percent subsidy at a total cost Rs.60 Lakh per boat.

7.7.5 Coastal Disaster Risk Reduction Project (CDRRP)

Fisheries sector and the fishing community are the most vulnerable to natural calamities, climate change and degradation of marine environment. In order to promote sustainable marine fisheries and for securing livelihood of the fishing community, the World Bank has sanctioned "Coastal Disaster Risk Reduction Project (CDRRP)" at an estimated cost of Rs.325.91 Crore.

A. Fisheries Infrastructure

The Emergency Tsunami Rehabilitation Project (ETRP) infrastructure works have been completed. Under new infrastructure works, Fishing harbour at Mallipattinam at a cost of Rs. 60 Crore and Fish Landing Centre (FLC) at Punnakkayal at a cost of Rs. 18 Crore were completed and put into use.

B. Fisheries Management for Sustainable Livelihood Project (FIMSUL-II)

Under the World Bank funded CDRRP - Fisheries Management for Sustainable Livelihood-II (FIMSUL-II) project, activities improving the socio-economic standards and safety of fisher such as capacity building, skill upgradation trainings, providing alternate livelihood assistance for sea weed culture, marine cage culture, bivalve farming, providing VHF sets to the fishermen of traditional and mechanized fishing boats for two-way communication during distress and ensuring their safety at sea while fishing were implemented.

To empower the fisherwomen, the project on byproduct development from seaweed at a cost of Rs.3.93 Crore is being implemented in co-ordination with Central Salt and Marine Chemicals Research Institute (CSMCRI) in Ramanathapuram district. In order to support the marine cage farming, a marine fish seed rearing centre at a cost of

Rs.1.07 Crore has been established at Mandapam, Ramanathapuram district for continuous supply of marine finfish seeds to the marine cage farmers.

For better management of marine fisheries resources, Co-management Committees have been formed involving the fishers at Village level, District level and Regional level in all the 13 coastal districts. The State Level Co-Management Committee has also been formed. Asset Management Committees have been formed in all important fishing harbours / fish landing centres involving local fishermen stakeholders. These committees are generating revenue for better management of fishing harbours / fish landing centres and thereby promoting overall hygiene of fishing harbour premises and ensuring quality of fish.

7.8 Protection of traditional fishing rights of Tamil Nadu fishermen.

7.8.1 Retrieval of Katchatheevu: - Issues and Status

Restoration of the traditional fishing rights of the Indian fishermen in the Palk Bay area, through retrieval of "Katchatheevu" back to India is one of the topmost agenda of the Government of Tamil Nadu.

A unanimous resolution was passed in the Tamil Nadu Legislative Assembly in 2011 to implead the Revenue Department in the Writ Petition W.P. (Civil) No.561/2008, filed before the Supreme Court of India in 2008, by late Hon'ble Chief Minister Dr. J Jayalalithaa, in her individual capacity for retrieval of Katchatheevu. Consequently an 'Implead Petition' was filed by the Revenue Department in the above writ petition and Government of Tamil Nadu impleaded itself in this case.

The Government passed a resolution in Tamil Nadu Legislative Assembly unanimously on 03.05.2013, urging the Government of India to retrieve Katchatheevu. The Government also passed another resolution in the Tamil Nadu Legislative Assembly on 5.12.2014, strongly urging the Government of India to retrieve Katchatheevu so as to restore the traditional fishing rights of the fishermen of Tamil Nadu.

7.8.2 Efforts taken by Government to release Tamil Nadu fishermen and their fishing boats and to prevent apprehension by Sri Lankan Navy

The Government of Tamil Nadu has determined to ensure the traditional fishing rights of our fishermen since time immemorial are well protected. With a deep sense of concern on the repeated incidents of attack, harassment and apprehension of Tamil Nadu fishermen by the Sri Lankan Navy and prolonged incarceration of our innocent

fishermen in Sri Lankan jails, the Hon'ble Chief Minister of Tamil Nadu has written many letters to the Hon'ble Prime Minister of India bringing the incidents to the notice for immediate remedial action through diplomatic channels.

The Hon'ble Chief Minister of Tamil Nadu has been constantly demanding the Government of India to decisively use all available diplomatic channels to secure the immediate release of apprehended fishermen of Tamil Nadu and also to prevent the recurrence of such incidents.

During 2019-20, 215 fishermen apprehended by Sri Lankan Navy were released and repatriated. 36 salvageable fishing boats were brought back to Tamil Nadu. Continuous efforts are being taken to release the remaining 14 fishermen and 59 fishing boats detained by the Sri Lankan Government.

7.8.3 Fishermen level talks

It was agreed in principle in the Inter-Ministerial Meetings and 4th Joint Working Group Meeting held during January 2012, that the discussions between the fishermen of India and Sri Lanka on resolving the disputes on fishing in the Palk Bay region should be encouraged and that the decisions arrived by mutual consensus should be placed before the JWG for further action. In view of the sentiments and desire of the fishermen community of Tamil Nadu to hold talks with the fishermen of Sri Lanka to sort out the day-to-day issues faced by them while fishing in the Palk Bay and in the interest of keeping a channel of communication open between the fishermen of both countries, the Government of Tamil Nadu so far facilitated four rounds of Fishermen level talks.

7.8.4 India-Sri Lanka Joint Working Group on Fisheries

So far, 3 rounds of India and Sri Lanka Joint Working Group meetings were conducted. During these meetings the issue of release and repatriation of Tamil Nadu fishermen and their fishing boats with fishing implements apprehended by Sri Lankan Navy were reiterated.

7.9. Development of Fisheries Infrastructure

The Government has been taking earnest steps for establishing infrastructural facilities with funding support from various sources. Facilities for hygienic handling of fishes onshore are being established to ensure the supply of quality fish to the consumers. This in turn results in enhanced export values and better realization for the fishermen.

7.9.1 Construction of Fishing Harbour at Poompuhar, Nagapattinam District

A Fishing Harbour at Poompuhar in Nagapattinam district was constructed at a cost of Rs.148 Crore under Centrally Sponsored Scheme. The Government of Tamil Nadu accorded second revised administrative sanction for Rs. 178 Crore and Rs. 30 Crore has to be released. The construction of Southern Main Breakwater up to 1100m and Northern Leeward Breakwater up to 390m and Diaphragm wall was completed. Landside facilities and approach road were also completed. The Fishing Harbour was inaugurated by Honourable Chief Minister of Tamil Nadu on 7.3.2020 and put into use.

7.9.2. Construction of Fishing Harbour at Mookaiyur, Ramanathapuram District

The Government of India accorded the administrative approval for the Reconstruction of Fishing Harbour at Mookaiyur in Ramanathapuram District at an estimated cost of

Rs.113.90 Crore shared between Central and State. The Government of Tamil Nadu accorded second revised administrative sanction for Rs.128.70 Crore and sanctioned Rs. 14.80 Crore. The development of this harbour is aimed at decongesting the fishing boats from the Palk Bay.

This harbour has been established with infrastructure facilities such as breakwater, wharf, fish auction hall, protection wall, drying platform, net mending shed and other infrastructure facilities. The Fishing harbour was inaugurated by Honourable Chief Minister of Tamil Nadu on 4.3.2019 and put into use.

7.9.3. Construction of Fishing Harbour at Tharangampadi in Nagapattinam District

A fishing harbour at Tharangampadi, Nagapattinam District is being established at a cost of Rs.120 crore, for which the Government has accorded administrative sanction under

Fisheries and Aquaculture Infrastructure Development Fund (FIDF). The harbour is designed with a Northern breakwater to a length of 330 m, Southern breakwater upto 1060m and other land side facilities for the hygienic handling of catches. The work is in progress.

7.9.4. Construction of Tuna Fishing Harbour at Thiruvottriyurkuppam in Thiruvallur District

Based on the detailed project proposal for the construction of Tuna Fishing Harbour at Thiruvottriyurkuppam in Thiruvallur District, the Government has accorded administrative sanction for Rs.200 crore under Fisheries and Aquaculture Infrastructure Development Fund (FIDF). The harbour will have Northern breakwater to a length of 510m, Southern breakwater upto 849m and other landside facilities for the hygienic handling of Tuna and deepsea fish varieties. The work is in progress.

7.9.5. Construction of Fishing Harbour at Vellapallam in Nagapattinam District

Based on the Techno Economic Feasibility and Detailed Project Report, a fishing harbour with modern facilities will be established at an estimated cost of Rs.100 crore at Vellapallam Village of Nagapattinam District for which the Government has accorded administrative sanction under Fisheries and Aquaculture Infrastructure Development Fund (FIDF). Preliminary works are in progress.

7.9.6. Renovation of Fishing Harbour at Mudhunagar in Cuddalore District

The Government has accorded administrative sanction for Rs.100 crore under Fisheries and Aquaculture Infrastructure Development Fund (FIDF) for the renovation of Fishing Harbour at Mudhunagar in Cuddalore District. The work is in progress.

7.9.7 Development of Fish Landing Centres and Stabilisation of Groynes

The Government has accorded administrative sanction for the construction of Fish Landing Centre at Kunthukal in Ramanathapuram District at a cost of Rs.70 crore with the financial assistance from Government of India and NABARD under RIDF. About 90% of the works has been completed and further works are in progress.

The Government has also accorded administrative sanction for Rs.29.50 crore for the construction of Fish Landing Centres at Vembar in Thoothukudi District, Kodiakarai, Chinnangudi, Kameshwaram, Pushpavanam in Nagapattinam District, Thazhanguda in Cuddalore District, Sulerikattukuppam in Chengalpattu District, Kattumavadi and Ponnagaram in Pudukottai District with financial assistance of NABARD under RIDF. All the Fish Landing Centre works were completed.

Further, the Government accorded administrative sanction for Rs.11 crore for the construction of a Fish Landing Centre at Kurumbanai and Rs.4 crore for stabilisation of Groynes at Kadiyapattinam in Kanniyakumari District. The stabilization work at Kadiyapattinam and Fish Landing Centre at Kurumbanai were completed and are put into use.

7.9.8 Construction of Fish Landing Centres under Tsunami Rehabilitation Programme

The Government has sanctioned a total sum of Rs.49.97 crore for the construction of ten new fish landing centres (FLC) at various coastal villages. Among these, construction of 9 Fish Landing Centres have been completed. Construction of FLC at Annamalaichery in Tiruvallur district is nearing completion.

7.9.9 Construction of 3 Fish Landing Centres in Kanniyakumari District

The Government has accorded administrative and financial sanction for Rs. 12 Crore for the construction of Fish landing centres at three locations namely, Pozhikarai, Kesavanputhenthurai and Pallamthurai in Kanniyakumari District at a cost of Rs.4 Crore each, to cater the needs of fishermen. All works are completed.

7.9.10. Construction of short groynes at Neerodi, Marthandamthurai and Vallavilai in Kanniyakumari District.

The Government has accorded administrative sanction for the construction of short groynes at Neerodi, Marthandamthurai and Vallavilai of seashore villages in Kanniyakumari District at a cost of Rs.116 Crore. All works are in progress.

7.9.11. Temporary opening of barmouth using dredger at Pulicat Lake in Thiruvallur District

Considering the difficulties faced by the fishermen of 25 fishing villages located in and around Pulicat lake to venture into the sea for fishing, the State Government has accorded administrative sanction for Rs.1.50 Crore towards temporary opening of barmouth using dredger. The dredging work were completed and the barmouth is opened for the movement of traditional crafts of Pulicat fishermen.

7.9.12 Pilot Project on establishing Geo-Synthetic Tubes for Coastal Protection

NIOT has developed a technique to protect the coast from sea erosion by establishing submerged dykes made up of sand filled geo-synthetic tubes. The technique successfully adopted by NIOT will be taken up at Bommaiarpalayam in Villupuram district at a cost of Rs.19 Crore with NABARD funding

assistance to protect the shore from sea erosion. The project sanctioning committee of NABARD has approved this project.

7.9.13 Establishing Fishing Harbours in Kaluveli waters at Azhagankuppam in Villupuram District and Alambaraikuppam in Chengalpet District.

The Government has accorded administrative sanction of Rs.235 Crore for the Construction of Fishing Harbours in Kaluveli waters at Azhagankuppam in Villupuram District and Alambaraikuppam in Chengalpet District. Tenders have been called for.

7.9.14 Construction of Fishing Harbour at Arcottuthurai in Nagapattinam District

The Government has accorded administrative sanction for the Construction of Fishing Harbour at Arcottuthurai in Nagapattinam District at a estimated cost of Rs. 150 Crore to

accommodate more number of fishing crafts with necessary shore facilities. Tenders called for.

7.9.15 Dredging works at Vellaiyar river barmouth in Seruthur village of Nagapattinam District

The Barmouth of Vellaiyar river is often getting closed every year due to silt formation and the fisher facing difficulties in the navigation of fishing boats to venture into sea. The Government have accorded administrative approval for a sum of Rs.4.00 Crore for carrying out dredging work at Vellaiyar in Seruthur village of Nagapattinam District under State scheme during the year 2019-20. The work has commenced.

7.9.16 Dredging the Barmouth and Basin area at Chinnamuttom fishing harbor in Kanniyakumari District

Approximately 15,000 fisher are benefitted by using the Fishing Harbour at Chinnamuttom in

Kanniyakumari District both directly and indirectly. During the 'Ockhi' cyclone heavy wave caused silt accumulation in the harbour area and barmouth area. The shallow depth at the harbour basin and at the entrance of the barmouth causes damages to the boat and trouble for the entry and exit of the boats. The Government have accorded administrative approval for a sum of Rs.3.2 Crore towards dredging the barmouth and basin area of the fishing harbor at Chinnamuttom in Kanniyakumari District under State scheme during the year 2019-20. The work has commenced.

7.9.17 Providing Pre-processing facilities for Hygienic Handling and Auction facilities at four Fishing Harbours

Due to increase in the annual fish landings and considering the need for hygienic handling of fish and fishery products, it was decided to provide infrastructures for pre-processing hall,

chill room facilities to the fishing harbours at Nagapattinam (Rs.1.14 Crore), Mookaiyur (Rs.1.05 crore), Colachel (Rs.0.79 Crore) and Chinnamuttom (Rs.0.31 Crore) at a total cost of Rs.3.29 Crore under State scheme during 2019-20 mainly to envisage export. These works will be commenced shortly.

7.9.18. Deepening and Temporary opening of Barmouth at Atrangarai in Ramanathapuram District.

At present due to prevailing drought and no flow of water in the river the fishing channel of Atrangarai Village has got silted and the estuary gets closed and the fishers are unable to venture in to sea using the estuary. Due to the prevailing condition, the Government has accorded administrative sanction for a sum of Rs.72.69 Lakh for Deepening and Temporary opening of Barmouth at Atrangarai in Ramanathapuram District. Tenders called for.

7.9.19. Construction of Groynes and Landing facilities to prevent further erosion at Fish Landing Centre at Periyathalai in Thoothukudi District

The Government has accorded administrative sanction of Rs.29.89 Crore for the Construction of Groynes and Landing facilities to prevent sea erosion at Fish Landing Centre at Periyathalai in Thoothukudi District under NABARD-RIDF.

7.9.20. Construction of Northern Breakwater and Dredging of Barmouth for improvement of Fish Landing Centre at Nagore Village in Nagapattinam District.

The Government has accorded administrative sanction of Rs.19.87 Crore for the Construction of Northern Breakwater and Dredging of Barmouth and improvement of Fish Landing Centre at Nagore Village in Nagapattinam District under NABARD-RIDF.

7.9.21. Construction of Fish Landing Centre at Puthenthurai in Kanniyakumari District.

The Government has accorded administrative sanction of Rs.4.32 Crore for the Construction of Fish Landing Centre at Puthenthurai in Kanniyakumari District under NABARD-RIDF.

7.9.22. Providing approach road to Erayumanthurai side of Thengapattanam Fishing Harbour.

The Government has accorded administrative sanction of Rs.1.71 Crore for Providing approach road to Erayumanthurai side of Thengapattanam Fishing Harbour under NABARD-RIDF.

7.9.23. Construction of Protection wall to prevent sea erosion in Pamban Village, Ramanathapuram District

The Government has accorded administrative sanction of Rs.1.87 Crore for Construction of Protection wall to prevent sea

erosion in Pamban Village, Ramanathapuram District under NABARD-RIDF.

7.9.24. Renovation of Fish seed farm at Pilavakkal in Virudhunagar District.

The Government has accorded administrative sanction of Rs.1.81 Crore for Renovation of Fish seed farm at Pilavakkal Village in Virudhunagar District under NABARD-RIDF.

7.9.25. Renovation of existing farms and Construction of Training centre for Ornamental fish at Manimangalam in Kancheepuram District.

The Government has accorded administrative sanction of Rs.2.85 Crore for renovation of existing farms and Construction of Training centre for Ornamental fish at Manimangalam in Kancheepuram District under NABARD-RIDF.

7.9.26. Providing Infrastructure facilities at Kalimangundu village in Ramanathapuram District.

The Government has accorded administrative sanction of Rs.1.63 Crore for providing Infrastructure facilities like Auction Hall, Net Mending Shed and Cement Concrete Road at Kalimangundu Village in Ramanathapuram District to handle the fish catches in a hygienic manner, transporting and Marketing the fishes for the welfare of the fishers. Tenders have been called for.

7.9.27. Construction of Fish Drying Platform at Pazhayar Fishing Harbour in Nagapattinam District.

The Government has accorded administrative sanction of Rs.1.17 Crore for the Construction of Fish Drying Platform at Pazhayar Fishing Harbour in Nagapattinam District to facilitate the fisher women engaged in dry fishing activities in an hygienic condition. Tenders have been called for.

7.9.28. Fishermen Housing Scheme

The Government of Tamil Nadu has sanctioned a sum of Rs.85 Crore under Prime Minister Awaas Yojana (PMAY) scheme to construct 5000 houses to the Inland and Marine fishermen. 3098 fisherfolk have been benefitted so far under this scheme.

This scheme meant for housing to fisherfolk will be further extended to 2020-21 also.

7.9.29 Construction of New office building to accommodate the office of the Assistant Director of Fisheries at Mandapam in Ramanathapuram District

The Government have accorded administrative approval for a sum of Rs.78.00 Lakh for the construction of new office building to accommodate the office of the Assistant Director of Fisheries at Mandapam in Ramanathapuram District during the year 2019-20 under State scheme. Work order issued.

7.9.30. Construction of new integrated office building in Madurai District to accommodate the office of the Deputy Director of Fisheries and Assistant Director of Fisheries, Madurai

The Government have accorded administrative approval for a sum of Rs.1.22 Crore for the construction of new integrated office building at Pechiamman padithurai to accommodate the office of the Deputy Director of Fisheries, Madurai and Assistant Director of Fisheries, Madurai during the year 2019-20 under State scheme. Work order issued.

7.10. Development of Inland Fisheries

Aquaculture is a promising sector providing employment opportunity besides providing nutritional security to the ever-growing population. The main objectives of inland fisheries and aquaculture are:

- To increase the overall inland fish production of the State.
- To increase the fish seed production and to meet the growing demand.
- To provide quality fish seed to fish farmers.
- Horizontal and vertical expansion of fish culture activity.
- Quantitative and qualitative appraisal of the inland fishery resources and their potential.
- Enhancing the productivity and tripling the fish production.
- Tapping the untapped potential of aquaculture to contribute to food and nutritional security.
- Additional employment opportunities in rural sector through aquaculture marketing, trade and export of fish and value-added fishery products.

- To enhance capacity building and to execute the programme on Skill Development and Fisheries Education (at school level)
- Fisheries resource conservation, management and development through reforming and strict enforcement of relevant Acts, Rules and Regulations, leasing policy and preventing illegal entry of exotic species.
- To ensure food and nutritional security by increasing the per capita availability of quality fish.

7.10.1 Inland Fisheries Policy

To provide protein rich food to the rural population, ensure food security and to achieve the above objectives, inland fisheries policy for Tamil Nadu has been framed and is under the consideration of the Government. The inland fisheries policy envisages, development, management, conservation and sustainable

utilization of inland resources for improving livelihoods, generating employment, food & nutritional security and economic prosperity.

7.10.2. Strategies and Initiatives in Inland Fisheries

Though Tamil Nadu has 3.83 Lakh ha. of inland effective water spread area amenable for Fisheries development, these water bodies mainly depend on the seasonal rains. Poor and erratic rainfall, short retention period of water bodies, mismatch between breeding season of fishes and water availability for quality fish seed production, non-availability of low cost and quality feed are the factors limiting the inland fish production in the State.

In order to overcome these limitations, the following initiatives have been taken up by the Fisheries Department.

- Cage culture demonstration in irrigation tanks to increase the inland fish production and fish

seed rearing in fixed cages to increase fish seed availability.

- Initiation of fish seed stocking in all potential water bodies through various schemes and also by co-ordination with other water bodies owning departments.
- Skill development trainings to fish farmers on advanced fish culture technologies and training to the officials of the Department on latest advancements in inland fisheries in India and abroad.
- Integrating fish culture in farm ponds / multipurpose farm ponds with agriculture and livestock to provide additional income to the farmers.
- Promotion of culture technology for fast growing fishes viz., Amur Carp, Jayanthi Rohu, Genetically Improved Farmed Tilapia (GIFT) and Pangasius.

- Creating job opportunities to people by promoting fish seed rearing clusters, culture of edible and ornamental fishes.

The following special initiatives have also been taken up by the Government:

- The Department has established 4 aqua labs in Tamil Nadu with facilities to analyze water and soil quality parameters and disease diagnostic facilities. The aqua labs caters to the needs of fish farmers of 18 districts of Tamil Nadu and also helps to create data base of fish farms, to provide technical services to the fish farmers on pond management, water quality analysis and health monitoring and to provide technical guidance on best management practices and advanced technology transfer.
- A fish feed mill unit has been established in Thanjavur district and is being operated by TNFDC to cater the quality fish feed

requirements of Government fish farms and private farmers.

- Pure-line brood stock facilities in Mettur and Bhavanisagar Government fish farms are being established for improving the quality of fish seed produced and reared in Government fish farms.
- Promotion of Re-circulatory Aquaculture System (RAS) based fish culture to mitigate the water scarcity. The RAS technology adopts minimal usage of water and reuse of the water and is most suitable practice for intensive fish culture. Steps are being taken for promotion of RAS in Tamil Nadu by providing necessary hand hold support and technical guidance to the interested fish farmers of the State.

7.10.3. District Fish Farmers Development Agencies (DFFDA)

The Government of Tamil Nadu formed District Fish Farmers Development Agencies (DFFDA) in 31 districts, except Chennai, to popularize fish culture and to generate employment opportunities in rural areas. These DFFDA are functioning under the Chairmanship of the respective District Collectors.

The main activities of DFFDA are providing technical guidance and encouraging farmers to take up fish culture by extending subsidy assistance, imparting training and extension support. Registration of inland fish hatcheries, nurseries and grow out farms are also being carried out by the DFFDA to regularize the inland fisheries sector and to provide subsidy assistance to farmers under various schemes.

7.10.4. Reservoir Fisheries

In Tamil Nadu, there are 62 reservoirs comprising major, medium and small reservoirs which are under the control of the Fisheries Department. Among these, 54 reservoirs are under the control of Fisheries Department and 8 reservoirs are under the control of Tamil Nadu Fisheries Development Corporation Limited (TNFDC) for reservoir fisheries management to augment the inland fish production in the state.

- The objective is to increase the fish production and revenue of the inland fishers who depend on these reservoirs for their livelihood.
- Majority of the 54 reservoirs managed by the Fisheries Department are being leased out.
- During 2019-20, 12 reservoirs are under lease. From 2012-13 to 2019-20, a total lease revenue of Rs.44.97 Crore has been

collected and remitted into Government account. Action is being taken to lease out the remaining reservoirs during 2020-21.

The Department of Fisheries has also taken initiatives to bring in potential reservoirs under scientific fish culture.

7.10.5. Fish Seed Production by induced breeding

In Tamil Nadu, 10 Government & 1 TNFDC owned fish seed production centres are being operated successfully by the Department of Fisheries. The details of Government fish seed production centres are given below:

Table: 5

Government fish seed production centres

Sl. No	Government fish seed production centres	Seeds produced	District
1	Manimuthar	Carps	Tirunelveli
2	Karanthai	Carps	Thanjavur

Sl. No	Government fish seed production centres	Seeds produced	District
3	Thatankulam	Carps	Thanjavur
4	Nallikkottai	Carps	Thiruvarur
5	Thirukampuliyur	Carps	Karur
6	Bhavanisagar	Carps	Erode
7	Mettur Dam	Carps	Salem
8	Krishnagiri	Amur carp and GIF Tilapia	Krishnagiri
9	Poondi	Common carp	Thiruvallur
10	Chembarampakkam	Magur	Kanchipuram
11	Sathanur	Carps	Thiruvannamalai

The Government has taken various measures to strengthen the infrastructure facilities in the Government fish farms in recent years. During the year 2019-20, the Department of Fisheries has produced 53.57 Crore of early fry and supplied to various agencies. The Government is also encouraging private farmers to establish fish seed production centres by providing subsidy.

The Government has taken a step ahead for promotion of fast growing short seasonal fish varieties in Tamil Nadu by establishing a state level GIF Tilapia hatchery. Tamil Nadu is the pioneering state in the country to establish a GIF Tilapia hatchery by the state Fisheries Department getting permission from Government of India and signing a technical MoU with Rajiv Gandhi Center for Aquaculture. The GIF Tilapia hatchery functioning in Government fish farm, Krishnagiri with a capacity to produce 15 Lakh GIF Tilapia seeds/ year, is producing and supplying quality GIF Tilapia seeds to the farmers of our State as well as to neighbouring states. The Government is also establishing another GIFT hatchery at Manjalar Government fish farm at Theni district under World Bank funded TN-IAM Project.

7.10.6. Fish seed rearing centres:

In Tamil Nadu, 37 Government fish seed rearing centres are functioning under Department of Fisheries and 5 fish seed rearing centers are functioning under

TNFDC. A total of 7.08 Crore quality fish fingerlings of various fish species have been reared and supplied to various agencies during 2019-20. The seeds supplied are being stocked in reservoirs, irrigation tanks and in fish farms of private farmers leading to increase in inland fish production of the state. The details of Government fish seed rearing centres are given below:-

Table: 6
Government fish seed rearing centres

Sl. No	Fish seed rearing centres	District
Fish seed rearing farms under Department of Fisheries		
1	Pechiparai	Kanniyakumari
2	Chittar-I	Kanniyakumari
3	Chittar -II	Kanniyakumari
4	Manimuthar	Tirunelveli
5	Gadana	Tenkasi
6	Vaigai Dam	Theni

Sl. No	Fish seed rearing centres	District
Fish seed rearing farms under Department of Fisheries		
7	Manjalar Dam	Theni
8	Managiri	Sivagangai
9	Piravulur	Sivagangai
10	Pilavakkal	Virudhunagar
11	Anaipatti	Dindigul
12	Sathaiyar	Madurai
13	Thattamanaipatti	Pudukkottai
14	Kurungalur	Pudukkottai
15	Karuvidaicherry	Pudukkottai
16	Neithalur	Thanjavur
17	Agarapettai	Thanjavur
18	Karanthai-Mallichetti Theru	Thanjavur
19	Thirumangalakottai	Thanjavur
20	Nallikkottai	Thiruvarur
21	Asoor	Trichy

Sl. No	Fish seed rearing centres	District
Fish seed rearing farms under Department of Fisheries		
22	Kulithalai	Trichy
23	Thirukampuliyur	Karur
24	Bhavanisagar	Erode
25	Mettur Dam	Salem
26	Anaimaduvu	Salem
27	Hogenakkal	Dharmapuri
28	Chinnar	Dharmapuri
29	Krishnagiri	Krishnagiri
30	Pambar	Krishnagiri
31	Kelavarampalli	Krishnagiri
32	Mordhana	Vellore
33	Vidur	Villupuram
34	Lalpet	Cuddalore
35	Poondi	Thiruvallur
36	Chembarampakkam	Kancheepuram

Sl. No	Fish seed rearing centres	District
Fish seed rearing farms under Department of Fisheries		
37	Athur	Chengalpattu
Fish seed rearing farms under TNFDC		
38	Palar Porandalar	Dindigul
39	Amaravathy	Thirupur
40	Thirumurthy	Thirupur
41	Aliyar	Coimbatore
42	Sathanur	Thiruvannamalai

The Government is also encouraging private farmers to establish fish seed rearing centres by providing subsidy. To ensure the availability of fish seeds for stocking in irrigational tanks on receipt of water during North East Monsoon, fish seed rearing in cages is also promoted by the Government.

Further, in order to improve the fish seed quality and to increase the fish seed production in an unit area, intensification of fish seed rearing using aeration and probiotics has been taken up

successfully in Government fish seed rearing centre at Lalpet in Cuddalore district. Also, establishment of intensive fish seed rearing facilities are under progress in Government fish seed rearing centers viz: Thattamanaipatti in Pudukkottai district, Chinnar in Dharmapuri district, Mettur in Salem district, Krishnagiri fish farm in Krishnagiri District and Bhavanisagar fish farm in Erode district. By establishing these facilities, the Government will be rearing more number of seeds per unit area and supplying quality fish seeds to the fish farmers.

7.10.7. Capacity building of officials of Department of Fisheries

In order to adopt recent global advancements in aquaculture, the Government has taken measures for capacity building of officials, through exposure visits to 25 officials of Department of Fisheries to Philippines and Thailand during 2019-20 under the World Bank funded TN-IAM Project. The officials have gained hands on experience in various reputed fisheries institutions

viz. South East Asian Fisheries Development Center (SEAFDEC), Department of Fisheries, Royal Government of Thailand and Asian Institute of Technology, Bangkok, Thailand doing pioneer research in the field of fish culture.

The training cum exposure visit of Fisheries Department officials in Philippines and Thailand has helped the officials to acquire knowledge on the advancements in fish seed production and fish culture technology and the knowledge gained will help in development of fisheries sector in our state.

7.10.8. Improvements to Government fish farms

Government fish farm improvement works carried out at Bhavanisagar in Erode district and at Athur in Kanchipuram districts. The Government has sanctioned a sum of Rs.2 Crore under NADP and the works are completed and fish seed production activities are undertaken successfully.

Provision of additional water supply arrangements and intensification of fish seed rearing in Government fish farm at Chinnar in Dharmapuri district and Thattamanaipatti in Pudukottai district is being made under NADP for the year 2019-20 and an amount of Rs.0.55 Crore has been sanctioned by the Government. The works are under progress.

Intensive fish seed rearing with aeration and water quality maintenance using probiotics in Government fish seed farms are being taken up at Mettur, Krishnagiri and Bhavanisagar to enhance the fish seed production in an unit area. Under NADP-RAAFTAR for the year 2019-20, an amount of Rs.0.45 Crore has been sanctioned by the Government and works are under progress.

7.10.9. Tamil Nadu Irrigated Agriculture Modernization Project (TN-IAMP)

Tamil Nadu Irrigated Agriculture Modernization Project (TN-IAMP) funded by the

World Bank is being implemented in 66 sub-basins of Tamil Nadu. Implementation of this scheme will enable effective water usage and increasing unit productivity of water resources, enhance farmed fish production thereby increasing farmers income. Under this project, the World Bank has sanctioned Rs.39.50 Crore for implementing the Inland Fisheries development activities in phased manner for which administrative sanction was given by the Government.

Under the scheme, for the year 2018-19 (Phase-I), Rs.15.52 Crore was allocated out of which Rs.10.06 Crore was incurred as expenditure for Development of pure-line brood stock and maintenance centre at Bhavinasagar and Mettur, Establishment of GIF Tilapia hatchery at Manjalar, Renovation of Government fish seed farm at Lalpet and Agaram in Cuddalore district, Fish culture in Irrigational

tanks (3830 ha), Aquaculture in farm ponds (170 Nos), Earthen fish seed rearing cum culture farms (14 Units), Fish seed rearing in cages (21 Units), Fish culture in cages (9 Units), Supply of fishing implements to fishermen (170 Units) and Establishment of fish Kiosks (2 units).

During the year 2019-20, in Phase-I and Phase-II sub-basins, the following fisheries activities are implemented to the tune of Rs.16.50 Crore.

Table: 7

TN-IAM PROJECT 2019-20

Sl.No	Activities	Units
1	Direct stocking of fish seeds in long and short seasonal tanks	14,625 ha.
2	Aquaculture in farm ponds	393 Nos
3	Fishing implements	270 Nos

Sl.No	Activities	Units
4	Cage farming of fishes	6 Units
5	Fish seed rearing in cages	41 Units
6	Earthen fish seed rearing and culture farm	32 Units
7	Modern Fish Kiosk	12 Units
8	Overseas Training to technical staff of the department	25 officials

Under this Project, the Department of Fisheries has sent one batch of 13 officials to Philippines from 29.7.19 to 3.8.19 and another batch of 12 officials to Thailand from 5.8.19 to 12.8.19 through South East Asian Fisheries Development Centre (SEAFDEC) to acquire knowledge on the advancements in fish seed production and fish culture technology and the knowledge gained will help in development of fisheries sector in our State. The Director of Fisheries along with the Additional Director of

Fisheries, Ramanathapuram have also visited Philippines and Thailand amidst the training programme of 25 officials to have an orientation on the latest technologies in the field of fish seed production, fish culture, harvesting and marketing linkages adopted in Thailand and Philippines.

7.10.10 Pilot project on Ornamental Fish Culture

National Fisheries Development Board has sanctioned Rs.533.19 Lakh to implement a pilot project on "Development of Ornamental Fisheries" with the components viz. Establishment of Backyard Unit, Medium Backyard Unit, Aquarium Fabrication, Capacity Building Training and Aquarium Keeping in Schools and Colleges.

Under this project, capacity building programme on ornamental fish culture was conducted in 5 districts to improve the livelihood of the fishers. 34 large size and 37 small size aquarium tanks have been setup in various

schools and colleges of the State to create awareness among the College and School students on the culture of ornamental fishes in tanks. Construction of backyard rearing unit, medium scale rearing unit, integrated ornamental fish culture unit and aquarium fabrication cum retail unit are under progress.

7.11. Skill Development and Capacity Building

7.11.1 Maritime Education for Fisher Youth

The Government, with the intention of improving skills and creating employment opportunities to the fisher youth is extending financial assistance to the children of fishermen families at Rs.50,000/- per student for undergoing 6 specific courses on Maritime Education notified by the Government. An amount of Rs.13.25 Lakh was released to 42 fisher youth under the scheme during 2019-20.

This scheme will be continued during the year 2020-21 also.

7.11.2 Fisher Youth Certificate Course

In accordance with the announcement made by the Hon'ble Chief Minister of Tamil Nadu under rule 110, "Imparting special training to the fisher youth to assist them in joining Indian Navy and Indian Coast Guard as an Employment Opportunity", the Government has sanctioned an amount of Rs.1.04 Crore.

The special coaching is being imparted to the fisher youth in coordination with Coastal Security Group. So far, training has been imparted to 145 fisher youth from Cuddalore, Ramanathapuram, Kanniyakumari, Chennai and Thoothukudi Region. This year, it has been proposed to continue this training programme and 155 Fisher youth would be benefitted under this scheme.

The Department is imparting 'Beach Life Guard' training to Fisher Youth to enhance their skill on rescue operation in sea. So far, 38 fisher youth have been trained under this program.

The scheme will also continue for the Financial Year 2020-21.

7.11.3 All India Civil Service Special Coaching to Fisher Youth

The Department of Fisheries is providing 6 months special coaching to 20 fisher youth every year to enable them to excel in competitive exams for joining in the Indian Civil Services since 2017. The training is being given by Anna Institute of Management (All India Civil Service Coaching Centre). Two batches of training have been completed. This year also fisher youth have been selected for the training programme and training is in progress. The training expenditure is met from the CSR fund of the Tamil Nadu Fisheries Development Corporation.

7.11.4 Recognition of Prior Learning (RPL):

The Department of Fisheries, Government of Tamil Nadu is imparting skill development training programme for 3000 Marine and Inland fisherfolk to create job opportunities under the category of Recognition of Prior Learning (RPL) through Agriculture Skill Council of India (ASCI) for the job roles, Marine capture fishermen cum primary processor and Inland capture fishermen cum primary processor. Tamil Nadu Skill Development Corporation (TNSDC) has accorded financial sanction to a tune of Rs.30 Lakh to impart training, assessment and certification for 3000 fisherfolk.

So far, 2100 fisherfolk have been imparted training on the job roles of Marine capture fishermen cum primary processor and Inland capture fishermen cum primary processor.

7.12. Kisan Credit Cards (KCC) to Fish Farmers and Fishers

In pursuance to the Government of India announcement, the Government have taken necessary steps to extend the facility of Kisan Credit Card (KCC) in fisheries sector to help fishers meet their working capital needs. The KCC facility will help fishers to meet their short-term credit requirements of farming of fish, shrimp, other aquatic organisms and capture of fish.

Under Kisan Credit Card (KCC) facility, the eligible fishers /fish farmers have the credit limit of Rs. 2 Lakh to meet their working capital requirements for fisheries activities. Interest subvention is available for fisher /fish farmers @ 2% per annum at the time of disbursement of loan and additional interest subvention @ 3% per annum in case of prompt repayment as Prompt Repayment Incentive.

In order to extend KCC facility to the needy fisherfolk and fish farmer, Fisheries Department has taken earnest steps by convening Special District Level Technical Committee and State level Technical Committee meetings to fix the scale of finance for working capital requirements. The approved SLTC recommendations on scale of finance for fisheries were forwarded to bankers through State Level Bankers Committee.

In Tamil Nadu, so far 15,891 applications have been received from fishers/ fish farmers and 14,369 applications have been forwarded to various banks and distribution of KCC is under progress.

7.13. Extension activities

The Fisheries Department is equipped with an Extension and Training wing to disseminate the welfare schemes of the Government and to transfer the research findings effectively to the fisher, fish farmers and other stakeholders.

The Fisheries Department participates in various exhibitions, tourism and trade fairs. Awareness campaign on fishery resource management, sea safety measures, hygienic handling of fish, cleanliness in Fishing Harbours / Fish Landing Centers, plastic threats to the environment are being organized regularly. Fishermen grievance day and Fish farmers meet are also being conducted periodically. Annual days like National Fish farmers day, World Fisheries day, World Ocean day, Maritime day etc., are being celebrated by conducting various competitions for school/college students, awareness rallies and medical camps in fishing hamlets. Quarterly newsletter '**Meenvala Kalanjiyam**' in Tamil is being published with information on various Government schemes, success stories of fish farmers and recent updates in fisheries sector.

7.14. Tamil Nadu Marine Fisherfolk Census

The Department of Fisheries is conducting decennial census exclusively for fisheries sector. The last Tamil Nadu Marine fisherfolk census was under taken during the Year 2010 and the Government has decided to conduct Marine fisherfolk census during this year to understand the present status of fisheries sector in the State so as to formulate policies and welfare schemes for the betterment of fishers.

7.15 Study on Socio-economic status of Fisherfolk in Tamil Nadu

The Government plays an important role in improving the socio - economic conditions of fisherfolk by implementing various schemes and developing infrastructure facilities all along Tamil Nadu. To study the improvement of living standards of Fisherfolk that have been achieved through various schemes, to assess the impact of various schemes on the socio economic status of

fisherfolk and also to study the areas for further intervention, the Government has sanctioned Rs.50 Lakh for the same. This study will support Government in planning, making policy decisions, devising schemes, providing infrastructure facilities, skill development, and frame a road map for the Fisheries sector of Tamil Nadu.

7.16. The Third India International Seaweed Conference 2020

Tamil Nadu is a pioneering State towards introduction of new livelihood activities for the fisherfolk. One such activity is the introduction of seaweed farming to coastal fishermen and fisherwomen. Seaweed farming has emerged as a major alternate livelihood activity in the coastal areas in Ramanathapuram, Pudukottai, Thanjavur and Thoothukudi Districts. Fishers particularly fisherwomen are actively engaged in seaweed farming in these districts and this activity empowers fisherwomen of the coastal areas.

The Government of Tamil Nadu, and Indian Chamber of Commerce along with Central Salt Marine Chemical Research Institute (CSMCRI) had organized the 3rd India International Seaweed Expo & Summit during 30th and 31st January, 2020 at National Institute of Ocean Technology (NIOT), Chennai with the objective to expand the seaweed sector & its allied industries in our State.

During this event, eight MoU's worth Rs.57.70 Crore have been signed by this department with 8 international and national companies engaged in various seaweed products with the intention of providing marketing and value addition to the seaweed produced in Tamil Nadu and thereby better income to the coastal fishers engaged in this livelihood activity. A separate policy for seaweed farming and natural seaweed collection will be formulated during 2020-21.

7.17 Fisheries Cooperative Societies

The Fisheries Cooperative Societies play a pivotal role in the upliftment of fishermen and fisherwomen in the State. The Department is executing various welfare schemes to fishermen / fisherwomen through Fisheries Cooperative Societies. About 7.17 Lakh fishermen / fisherwomen have been enrolled as members in 1,418 Primary Fishermen / Fisherwomen Cooperative Societies, 12 District Cooperative Federations and 1 Apex Cooperative Federation. Fishermen Cooperative Societies are operating 51 full time and 15 part time fair price shops.

The details of number of cooperative societies and their numbers are given in the following table:

Table: 8**Members of Fisheries Cooperative Societies**

Society	No. of Societies	Members enrolled
Primary Cooperative Societies		
Marine Fishermen Cooperative Societies	558	3,56,992
Marine Fisherwomen Cooperative Societies	461	2,60,732
Inland Fishermen Cooperative Societies	300	82,986
Inland Fisherwomen Cooperative Societies	72	7883
Other types	27	6791
Total number of societies and members enrolled	1,418	7,15,384
District Fishermen Cooperative Federation	12	998
Tamil Nadu State Apex Fisheries Cooperative Federation	1	822
TOTAL	1,431	7,17,204

8. TAMIL NADU STATE APEX FISHERIES COOPERATIVE FEDERATION LIMITED (TAFCOFED)

Tamil Nadu State Apex Fisheries Cooperative Federation Ltd., (TAFCOFED) was registered under Tamil Nadu Cooperative Societies Act, 1983 and functioning since 19.10.1992 with its headquarters at Chennai. At present, 484 Marine Fishermen Cooperative Societies, 155 Inland Fishermen Cooperative Societies, 174 Fisherwomen Cooperative Societies and 9 District Fishermen Cooperative Federations have been enrolled as members in TAFCOFED with a total share capital of Rs.91.80 Lakh.

The Director of Fisheries is the Functional Registrar of the Apex Federation and it is administered by Managing Director in the cadre of Additional Director of Fisheries. TAFCOFED has five Project Offices at Kanchipuram, Thiruvallur, Nagapattinam, Ramanathapuram, Thoothukudi and Nagercoil.

The important schemes being implemented by Tamil Nadu State Apex Fisheries Cooperative Federation Ltd., are as follows:

8.1 Supply of Subsidized Tax free Industrial Kerosene to Motorised Fishing Crafts

During 2019-20, TAFCOFED has supplied 4,656 KL of subsidized Industrial Kerosene to the traditional motorised fishing crafts in Thoothukudi and Tirunelveli Districts through 13 primary Fishermen Cooperative Societies and earned revenue of Rs.30.57 Lakh. (upto January 2020).

8.2 Supply of Sales Tax exempted High Speed Diesel to Fishing Crafts

During 2019-20, TAFCOFED has supplied 18,193 KL of tax exempted diesel to Mechanised and Motorised fishing boats through 14 diesel bunks established in coastal districts and earned a revenue of Rs.3.99 Crore. (upto January, 2020).

8.3 Supply of Insulated Ice Boxes to Traditional Fishermen

During 2019 - 20, TAFCOFED has supplied 66 insulated ice boxes to traditional /artisanal fishermen under National Agricultural Development Programme (NADP) at 50% subsidy assistance.

8.4 Modern Fish Stalls

In order to supply good quality fish to general public at a reasonable price, TAFCOFED is operating Modern fish stall at Ramanathapuram, Paramakudi, Neyveli, Kanniyakumari, Madurai and Chennai and earned revenue of Rs.6.58 Lakh.

8.5 Integrated Cooperative Development Project (ICDP)

Year - II

The Government has sanctioned Rs.3.91 Crore under ICDP for infrastructure development in the Second year. TAFCOFED has received

Rs.3.35 Crore towards construction of ice plant at Thoothukudi, Thengapattinam, Colachel and revolving fund assistance for procurement of diesel, kerosene and out board motors / in board engines.

Year - III

Further, Government has sanctioned Rs.2.00 Crore for the Establishment of Ice Plant at Thoothukudi and Nagapattinam in the third year. Rs.1 Crore was received so far for the construction of ice plants and work is in progress.

8.6 Implementation of Centralized Insurance Scheme for Traditional Country Boats

In order to achieve 100% insurance coverage for traditional boats (both motorized and non motorized crafts) and to have a minimum possible premium and also to have better sum assurance, it was decided to centrally insure all registered traditional crafts. TAFCOFED

will facilitate the fishermen to insure and also liaise with insurance companies to process the claims and ensure the fishermen get suitable claim in time for the damages caused. TAFCOFED has finalized the insurance companies, the premium and coverage details. Under the centralized insurance scheme, the traditional boats will be insured from the year 2020.

8.7 Micro Credit to Fisherwomen for Sea Weed Farming

Seaweed culture has been emerged as a major alternative livelihood income generating activity particularly in Ramanathapuram, Pudukottai and Thoothukudi districts. The seaweed farming is intensive in Ramanathapuram district with more than 2000 families, particularly fisherwomen depend on this as livelihood source. Presently fisherwomen depend on credit from local money lenders and procurement agents at higher interest rates for

their farming which often lead to reduction in the selling price. To help the fisherwomen, TAFCOFED made intervention by providing micro credit at a lower interest rate which enable the fisherwomen free from depending on money lenders and ensure better price for their produce. Initially TAFCOFED has provided Rs.50 Lakh as micro credit to 1000 fisherwomen at the rate of Rs.5000/ fisherwomen. This facility will be extended in the coming years also.

8.8 Extension Work

TAFCOFED is publishing a quarterly newsletter "**Meenvala Kalanjiyam**" in Tamil, with information on various Government schemes, success stories of fish farmers and recent updates in fisheries sector.

8.9 Establishment of Cooperative Stores in FLC/FH

Tamil Nadu State Apex Fisheries Cooperative Federation Limited has established

cooperative stores at FLC/FH at a cost of Rs.15 Lakh each in Thengapattinam, Colachel, Tuticorin and Chinnamuttom at a total cost of Rs.60.00 Lakh for supply of gas cylinder, fishing nets and other essential commodities to the fishermen who operate fishing boats from these FH/FLCs. Fishermen can access their daily needs of fishing at the harbour premises itself.

8.10 Financial Performance

During the year 2019-20, TAFCOFED has made a turnover of Rs. 182.63 Crore and earned a net profit (unaudited) of Rs. 2.30 Crore.

9. Tamil Nadu Fishermen Welfare Board (TNFWB)

Tamil Nadu Fishermen Welfare Board (TNFWB) was established in 2007, with a view to ensure social security and wellbeing of fishers and labourers engaged in fishing and its allied activities. TNFWB is headed by Minister for

Fisheries as the Chairman and the Director of Fisheries as Member Secretary. The Board consists of members nominated from time to time by the Government of Tamil Nadu.

A total of 4.82 Lakh members have been enrolled in Tamil Nadu Fishermen Welfare Board.

Collection of contributions is being made through various receipts from the members of Tamil Nadu Fishermen Welfare Board, diesel bunks operated by TNFDC and TAFCOFED. The member contribution is Rs.20/- per member and other receipts being 7% of fishery lease amount and Rs.2/- per kg of fish sale from Mettur Dam. A sum of Rs.23.49 Crore has been collected as contribution from 1.4.2008 to 29.02.2020.

The welfare schemes being implemented by the TNFWB are detailed in Table 9.

Table:9**List of Welfare Schemes in TNFWB**

Sl.No.	Details of Relief Assistance	Relief / Assistance (Amount in Rs)
1	Accident Relief	
	a) Death due to Accident	2,00,000
	b) Loss of both hands	1,00,000
	c) Loss of both legs	1,00,000
	d) Loss of one hand and one leg	1,00,000
	e) Loss of sight in both eyes	1,00,000
	f) Loss of one hand or one leg	1,00,000
	g) Loss of limbs due to Major injuries other than the above items	50,000
2	Death during fishing or after fishing due to reasons other than accidental death	2,00,000
3	Fishermen missing while fishing	2,00,000
4	Natural Death	15,000

Sl.No.	Details of Relief Assistance	Relief / Assistance (Amount in Rs)			
5	Funeral Expenses	2,500			
6	Assistance for Education to son and daughter of the members	Day scholar		Hosteller	
		Boys	Girls	Boys	Girls
	a) Pass in 10 th Std	1,250	1,500	1,250	1,500
	b) Pass in 12 th Std	1,750	2,000	1,750	2,000
	c) ITI and Polytechnic	1,250	1,750	1,450	1,950
	d) Under Graduate Degree	1,750	2,250	2,000	2,500
	e) Post Graduate Degree	2,250	2,750	3,250	3,750
	f) Under Graduate Professional Courses (Law, Engineering, Medicine, etc.)	2,250	2,750	4,250	4,750

Sl.No.	Details of Relief Assistance			Relief / Assistance (Amount in Rs)	
	g) Post Graduate Professional Courses	4,250	4,750	6,250	6,750
7	Marriage Assistance			Male	Female
	a) Marriage Assistance to Member			3,000	5,000
	b) Marriage Assistance to son / daughter of a Member			3,000	5,000
8	a) Delivery @ Rs.1,000/- per month for 6 months			6,000	
	b) Miscarriage			3,000	
	c) Termination of Pregnancy			3,000	

9.1 Online service delivery

- All the schemes implemented by Tamil Nadu Fishermen Welfare Board (TNFWB) is being brought under one umbrella and are effected through the web portal www.tnfwb.tn.gov.in All the Assistant Director of Fisheries have been provided with User ID for accessing the

web portal. This enables the Assistant Director of Fisheries to upload the details of the beneficiaries directly. This procedure reduces time by usage of forms, verification of documents and other procedures and also enable quick and easy transfer of applications. Moreover, the benefits are directly transferred to the beneficiaries' bank account through NEFT. Since the schemes under Tamil Nadu Fishermen Welfare Board (TNFWB) is implemented through online, enable the beneficiary to view the status of application in a transparent manner.

- During the year 2019-20, TNFWB has settled 2,863 claims amounting to Rs.3.38 Crore under various welfare schemes through National Electronic Fund Transfer (NEFT).
- The TNFWB will bear the education fee of five students (wards of members) who study B.F.Sc. degree or B.Tech. (Fisheries

Engineering) degree in Tamil Nadu Dr.J.Jayalalithaa Fisheries University. So far, 9 students from fishermen community have been provided with the education fees. In 2019-20, a sum of Rs.5,60,125/- has been borne by the TNFWB. This assistance will be extended in 2020-21 also.

10. Tamil Nadu Fisheries Development Corporation Limited (TNFDC)

Tamil Nadu Fisheries Development Corporation Limited (TNFDC), a Public Sector undertaking registered under Companies Act in 1974.

The TNFDC through various commercial activities such as Fresh fish marketing, Sea Food Courts, Diesel / Kerosene sale, Reservoir fisheries, etc., has made a turnover of Rs.572.41 Crore and expected to earn a profit of Rs.13 Crore for the financial year 2019-20. It is targeted to earn Rs.14 Crore as profit for the year 2020-21 with an anticipated turnover of Rs.580 Crore.

The Director of Fisheries is the Managing Director of the Tamil Nadu Fisheries Development Corporation, an ex-officio post. The field activities of the Corporation are managed by General Manager, Senior Managers, Managers, Deputy Managers and Assistant Managers totaling 100 permanent employees and around 270 outsourced employees are managing its activities. The Corporation is in the process of recruiting more staff to expand its business activities.

TNFDC is undertaking reservoir fisheries in 8 reservoirs by adopting scientific method in stocking of advanced fish fingerlings and producing approximately 1,000 tons of inland fishes every year.

TNFDC is having a total fish seed rearing area of 3.83 hectares in 5 fish farms at Sathanur, Aliyar, Amaravathy, Thirumoorthy and Palar - Porandalar Reservoirs. Quality fish seeds produced by the TNFDC are stocked in the

reservoirs managed by the TNFDC, besides supplying to private fish farms. TNFDC has also established ornamental fish production centers at Aliyar and Thirumoorthy Nagar.

Quality fresh fish and value-added sea food products are being marketed at a reasonable price to public through its chain of retail fish stalls and mobile units in the state. Efforts are being taken to expand the fish marketing network by establishing more modern and mobile fish retail outlets in different cities.

The Corporation is operating 31 diesel outlets and 10 kerosene outlets in the fishing harbours and fish landing centres located all along the coastal area in the State to supply tax exempted high-speed diesel/kerosene to the motorised traditional and mechanised fishing crafts. TNFDC is establishing more diesel outlets, wherever new fishing harbour and fish landing centres are established.

10.1 Management of Chetpet Eco-Park

The operation and maintenance of the Chetpet Eco Park is being under taken by TNFDC. The Eco-Park with the Boating, Angling, Multi-Level Car Parking (MLCP), Children Park, Recreation Centre, Food Court, Walking and Jogging Tracks, Children Play Area, Multimedia, Amphi-theatre, etc., is attracting a huge number of footfalls. An "Aquarium-cum-Aquatic Virtual Reality Centre" has also been established at a cost of Rs.6.93 Crore as an additional attraction to Public. On an average of 2 Lakh nos. of visitors are visiting the Eco Park annually. Efforts have been taken to introduce additional recreational facilities in the Eco Park.

10.2. Establishment of Centralized Kitchen for Sea Food Products and Training Centre

TNFDC has established a Centralized Kitchen with training facilities for Women Self Help Group for the production & marketing of ready to cook

and ready to eat value added fishery products at Royapuram, Chennai at an estimated cost of Rs.3.04 Crore. Training is being given to the Self-Help Group Women using the facilities at the Centralized Kitchen for the production of value-added fish delicacies.

10.3 Establishment of Online Fish Marketing Facilities at Chennai

TNFDC is making sincere efforts to create awareness on the positive health aspects of sea food consumption. TNFDC has also established online fish marketing facility for the convenience of customers in Chennai marketing unit. Based on the good responses from the General Public, the TNFDC has revamped the Online Website with additional user-friendly features along with Mobile App applications.

10.4 New Schemes

10.4.1 Operation of Fish Feed Mill

The TNFDC has taken over the fish feed manufacturing unit established by the

Department of Fisheries, Government of Tamil Nadu at Achampatti in Thanjavur and commenced production operations from 23.8.2018. So far 170 tons of fish feed have been produced and supplied to the Department fish farms and private fish farms.

10.4.2 Modern Sea Food Restaurant at Teynampet

The TNFDC Sea Food Court at Teynampet, Chennai has been modernized with Sit & Dine facilities.

10.4.3. Branding of TNFDC Products

The TNFDC in order to popularize its activities and schemes among the general public has developed a new brand logo with caption of “**IDHU NAMMA OORU MEENGAL**” and also launched a corporate film along with promotional activities in social media.

During 2018-19, the TNFDC paid a sum of Rs.2.57 Crore to the State Government as

dividend. During 2018-19, Rs.1.00 Crore was paid as TNFDC's contribution to the Hon'ble Chief Minister's Public Relief Fund.

TNFDC paid a sum of Rs. 1.10 Crore for the year 2018-19, as its contribution to Tamil Nadu Fishermen Welfare Board.

Further, the TNFDC has allocated a sum of Rs.24.76 Lakh as its Corporate Social Responsibility (CSR) Fund for the year 2019-20.

11. Tamil Nadu Dr. J Jayalalithaa Fisheries University

Tamil Nadu Fisheries University was established as per Tamil Nadu Fisheries University Act 2012, on 19.06.2012 at Nagapattinam, to impart professional fisheries education, conduct research and training for enhancing fish productivity and utilization in the state, by following State Agricultural University (SAU) pattern and syllabi. The University has been renamed as Tamil Nadu Dr. J Jayalalithaa Fisheries University (TNJFU) as per G.O. (Ms.) No.21, Animal Husbandry, Dairying and Fisheries Department dated: 16.02.2018.

11.1. Vision

"Harnessing the Science of Fisheries for Food, Nutrition and Livelihood" is the Vision of the University.

11.2. Mandate

Teaching, research and extension in fisheries science is the mandate of the University.

11.3. Mission

- To impart skill based professional education in different Faculties viz., Fisheries Sciences, Fisheries Engineering, Basic Sciences and Food Science & Nutrition as the University may determine
- To make available wide range of higher education opportunities for the fisheries professionals
- To conduct organized research with the objective of developing cutting edge technologies in Fisheries Sciences
- To provide effective extension services using conventional and advanced state-of-the-art dissemination tools

- To facilitate the incubation ecosystem in alliance with industry and academic partners to develop translational and transformational technologies
- To offer Vocational/Para-professional fisheries education to the needy fisherfolk, fish farmers, unemployed youth in the State to enhance entrepreneurial skills in fisheries sector

11.4. Staff Strength

The sanctioned staff strength of Tamil Nadu Dr. J Jayalalithaa Fisheries University is given below in Table 10:

Table: 10

Sl. No.	Name of the Post	Staff Strength
1.	Vice-Chancellor	1
2.	Registrar	1
3.	University Officer	13
4.	Professor	7
5.	Associate Professor	34

Sl. No.	Name of the Post	Staff Strength
6.	Assistant Professor	113
7.	Assistant Librarian	3
8.	Assistant Director of Physical Education	1
9.	Non-teaching staff	271
TOTAL		444

11.5. Academic activities

The Fisheries University which was established by the late former Chief Minister, Dr. J Jayalalithaa, in 2012 at Nagapattinam has been well recognized in fisheries education both at National and International levels. Dr. M.G.R. Fisheries College and Research Institute, Ponneri got its ICAR accreditation in the year 2019.

- a. As the growth of aquaculture is registering the higher CAGR (Compound Annual Growth Rate) when compared to agriculture and allied sectors, it is essential to produce

fisheries graduates at least 10% of the total agri-graduates produced in the country. TNJFU is right on target to accomplish this national and state's task.

- b. Fourteen of University students topped in the All India PG Entrance Examination conducted by ICAR and a graduate of University bagged the 'Best Fisheries Graduate of the Year' award from the Professional Fisheries Graduate Forum (PFGF). University intends to continue this initiative as this has ensured competitive spirit among the students.

11.6. Education institutions and teaching infrastructures

11.6.1. Constituent Units of TNJFU

The University at present has four Faculties. All these faculties' together offer 7 Professional degree programs such as B.F.Sc., B.Tech. (Fisheries Engineering), B.Tech. (Biotechnology),

B.Tech. (Food Technology), B.Tech. (Energy & Environmental Engineering), B.Tech. (Fisheries Nautical Technology) and B.B.A. (Fisheries Business Management) and 4 Paraprofessional degree programmes such as B.Voc. (Industrial Fish Processing Technology), B.Voc.(Industrial Aquaculture), B.Voc. (Industrial Fishing Technology) and B.Voc. (Aquatic Animal Health Management) through 11 professional colleges and 4 paraprofessional colleges. TNJFU altogether has 45 constituent units including Centres and Referral Labs. Together 461 students were admitted in these UG programmes and 90 students were passed out during 2019-20. 11 M.F.Sc programmes, two M.Tech programmes and one MBA program are also offered. 12 Ph.D. programmes are also offered. 37 students to the Master degree program and 13 students in Ph.D., programmes were admitted. 34 M.F.Sc and 5 Ph.D. students were passed out during 2019-20.

11.6.2. New Infrastructure Facilities for Education

The Hon'ble Chief Minister inaugurated 7 new buildings at a total cost of Rs.47.5 Crore during 2019-20, viz., library block, class room and seminar hall in TNJFU campus at Nagapattinam; Administrative block for College of Fisheries Engineering at Nagapattinam; Academic block for Fisheries Training Institute at Mandapam, Ramanathapuram District; Sales cum display stalls for Aquatic Rainbow Technology Park, Madhavaram, Chennai; Additional Academic infrastructure for Institute of Post graduate Studies at Vaniyanchavadi, Chennai and Administrative block for Dr.M.G.R. Fisheries College and Research Institute, Thalainyayiru, Nagapattinam District.

11.6.3. TNJFU's Technical Directorates

There are 5 technical Directorates viz., Directorate of Research, Directorate of Extension

Education, Directorate of Sustainable Aquaculture (DSA) with 7 Centres, Directorate of Incubation & Vocational Training in Aquaculture (DIVA) with 3 Centres and Directorate of Incubation & Vocational Training in Fisheries (DIVF) with 3 Centres.

11.6.4. Major Academic Achievements of TNJFU

The Gross Student Enrollment Ratio (GER) of TNJFU is the highest compared to other Fisheries Universities and Fisheries Colleges in the country. TNJFU is offering the maximum number of UG, PG and Ph.D programmes among the Fisheries Universities (11-UG; 14-PG; 11-Ph.D). TNJFU is producing engineering graduates with specialization in fisheries. Innovative Technology Parks have been created at various places.

11.6.5. Academic Programmes offered

TNJFU has been functioning in its own building in the new campus since September

2018. The dimension of expansion was increased in volume and scale.

TNJFU has introduced 4 UGC approved paraprofessional vocational degree programmes. Among the Fisheries Universities, TNJFU is the first to introduce the Para-professional courses to cater to the requirement of the fisheries and aquaculture sectors.

The enrollment rate in all these colleges has tripled in the past two years and currently there are 1124 students in the university. The faculty strength of the university also rose in line with the increase in courses and student's strength and currently TNJFU has 106 teaching faculty on roll against the sanctioned strength of 171. TNJFU is able to attract talented and dedicated researchers and teachers from Tamil Nadu and from some of the best universities of India.

11.6.6. New Endowment Award:

Ten new Endowment Awards, in addition to the existing 40 endowment awards for the academic excellence of the students were instituted so far to encourage the students and recognize the academic merit in various fisheries disciplines.

11.7. Research Activities

- **Research:**

Research activities of the university are guided by the 4P's Cell (Papers, Projects, Products & Patents) formed in our University which has been active in this year too. Faculty members of TNJFU have continued to conduct significant research and published their papers in esteemed referred journals. Publication of scientific research articles from the University has been showing an upward trend over the years with 132 research papers and technical reports in this year.

The research achievements are being given increased importance in the career advancement and promotion of the faculty.

- **Technologies and Patents:**

TNJFU has a total of 10 Patents under various levels of processing. On patenting, our University is playing a major initiative. Reports for 4 patents have been submitted and University will obtain patents for these technologies in a few months. Couple of new patents has also been registered this year.

- **Research Infrastructure Created:**

A Referral Lab for 'Fish Nutrition and Feed Analysis' at IFPGS, OMR Campus and a Referral Lab for 'Aquatic Animal Health' at Madhavaram Campus were created. RAS Research Facility developed at Madhavaram Campus is a unique facility. Mobile Aqua Labs (2 nos.) have been introduced at Madhavaram & Thanjavur Campuses and

'Outdoor Biofloc Production Park' a first of its kind has also developed at Madhavaram Campus.

a. On Going Schemes:

The following 3 new NADP schemes to the tune of Rs.5.20 Crore have been sanctioned during the current year:

- i. Development and transfer of Seaweed Farming Technology as an Alternative Employment option for the Coastal Fisherfolk in Mandapam, Ramanathapuram District (Rs.2.51 Crore)
- ii. Establishment of Aquaculture Service Centre in Cauvery Delta Region (Rs.1.38 Crore)
- iii. Establishment of Aqua-Agriculture Integrated Systems for inland farmers in Erode District (Rs.1.30 Crore)

The following 3 NFDB activities were sanctioned:

- i. Three Aqua-one-centers at Thanjavur, Parakkai and Bhavanisagar are being established (Rs.60 Lakh)
- ii. Upscaling of Biofloc production Technology for developing Eco-Feed for Vannamei shrimp culture (Rs.50 Lakh)
- iii. Establishment of demonstration units of Hatchery, Nursery and Grow out systems for incubatees in ARTP using RAS facility at Madhavaram (Rs. 50 Lakh)

The following activities are undertaken with the support of DBT, DST-SERB and FSSAI Schemes:

- i. Healthy Shrimp and 'GIF' Tilapia production through bio-floc based

- farming system: Development of technology and standard operating procedure (Rs. 57.93 Lakh)
- ii. Bio-prospecting for anti-osteoporotic collagen peptides derived from fish bones (Rs.36.07 Lakh)
 - iii. Evolving artificial fish bait for long line fishing using biopolymers and bio attractants derived from marine fish processing waste (Rs. 44.56 Lakh)
 - iv. Production of Eicosapentaenoic acid (EPA) from marine diatom *Phaeodactylum tricornutum* isolated from the coastal waters of Gulf of Mannar (Rs.41.86 Lakh)
 - v. Re-emergence of *Vibrio vulnificus* risk in seafood safety in response to climate changes (Rs.39.67 Lakh)

- vi. Monitoring of Fish and Shellfish species along the Indian Coast and possible mitigation measures (Rs.9.52 Lakh)

The following are the Institute-International Industry projects operated currently:

- i. Effect of a Lysophospholipid based nutrient absorption enhancer in improving the performance of *Penaeus vannamei*
- ii. Effect of supplementing prototypes (immunomodulators) on the growth performance and immune responses of *Penaeus vannamei*
- iii. Effect of Growth Plus® and Lipto fry® as Functional Feed Supplement for the improved growth performance of *Penaeus vannamei*

- iv. Evaluation of the effects of Phytase Supplementation on growth and feed utilization in Nile Tilapia (*Oreochromis niloticus*)
- v. Determination of the efficacy of Activo® liquid and BgMOS® in comparison to a competitive product in improving performance parameters in shrimp

11.8. Extension Education

University has 7 Aquaculture Quality Testing Labs, 3 Mobile Aqua Labs, 4 Molecular diagnostic Labs, 3 Food products quality testing labs and 1 Feed quality testing lab to cater to the need of the farmers and fishers. Through these facilities 514 fish farmers and 16 seafood exporters were benefitted so far.

The following are some of the facilities created with the help of the Government.

- i. Incubator/SPV model infrastructure created for stakeholders
- ii. Fish products' outlet 'Kayalaham' introduced
- iii. Model marine cage farming initiated
- iv. MoUs signed with international universities to undertake students exchange and collaborative research in fisheries science and to encourage UG students to have Overseas Internship Programme.

11.9. Digital, Green & Clean Campus Initiatives

University is taking several measures towards ensuring and improving the quality of campus environment year after year. Digital campus, Clean campus and Green campus initiatives are being undertaken in all the constituent units of this University. In line with the emphasis given by the Govt. of Tamil Nadu on

improving the quality of environment in the Campuses, TNJFU Headquarters building is now fully having solar power backup. The Bhavanisagar Centre for Sustainable Aquaculture farm has been fully energized with the solar power back-up and the buildings are partially supported with solar power. Such initiatives are in progress in all the major campuses. TNJFU also will get a wind power backup system soon to make it a perfect Green Campus. Newly built University Library building is a green building designed in such a way to provide natural lighting inside the building for the readers during day time.

11.10. International & National Meets

TNJFU continues to receive International recognition in the field of Aquaculture and now this university hosted a mega International Conference cum Tradeshow with the support of the Government on Asia-Pacific Aquaculture-2019 (APA'19) on the theme "Aquaculture for Health,

Wealth and Happiness” which was organized jointly with the World Aquaculture Society-Asia-Pacific Chapter. APA’19 event was inaugurated by our Hon’ble Chancellor in the presence of Hon’ble Minister for Fisheries and Personnel & Administrative Reforms and the Principal Secretary to Government, Animal Husbandry, Dairying and Fisheries Department. 3,500 participants from more than 70 countries attended this conference.

11.11. 6th CONVOCATION

In TNJFU’s 6th Convocation, 111 graduates were awarded their degrees in person which include 65 B.F.Sc., 19 B.Tech (Fisheries Engineering), 22 M.F.Sc., and 5 Ph.D. degree. A total of 22 under graduates and post graduates received their degrees in absentia.

11.12. Technologies developed by TNJFU

Technology development is the regular pursuit of the University in all areas of Fisheries

Science. The following are the key technologies which have been developed and are being transferred to the stakeholders from the University:

- a) Under Blue Revolution Scheme of the Government of India, the University disseminated the technologies through training to 8,152 beneficiaries including farmers, fishermen and extension workers and fisheries officials.
- b) Skill development modules like aquaculture, live feed production, ornamental fish culture, biofloc technology, cage farming, shrimp farming, aquatic animal health management, deep sea fishing, vessel maintenance and value-added products were provided.
- c) 50 farmers have been supported with cages for open sea cage farming.

- d) Based on biofloc technology three products viz., a biofloc inoculum, 'BIO-INO'; feed / nutritive additives, 'BIO-SAC' and biofloc based shrimp feed, 'Nutrifloc' were developed.
- e) Technologies for induced breeding and mass production of indigenous ornamental fishes viz., *Danio dangila*, *Dwakinsia filamentosa* and *Puntius sophore* were developed for the first time in India.
- f) Four new equipments, viz. Fish De-Scaling Machine, Fish Filleting Machine, Fish Slicing Machine and Fish De-Capitation Machine were developed by Engineering Faculty of the University. Biofloc producing photo bioreactor and raceway ponds were developed.
- g) A FQMC Rapid Fluorescent Formalin Kit for testing fish contaminated with formalin was developed.

11.13. Sustainable Development Goals

The University will keenly focus on to sustain the quality of education provided in various UG, PG and Ph.D. programmes by recruiting quality teachers and to admit students for PG. and Ph.D. through rigorous screening; to create incubator facilities for skill development and to evolve start-up initiatives to produce skill manpower through academic and vocational channels; to strengthen the current R&D infrastructure to help the faculty and the students research team to bring out quality technologies for adoption by the stakeholders; to give more emphasis for utilizing the sea judiciously by promoting marine cage farming in coastal waters & deep sea fishing in off-shore waters; to take initiatives to popularize quality tested innovative fish products in the state to increase the per capita fish consumption of Tamil Nadu state; to undertake International collaboration on thrust areas of research front such as Recirculatory Aquaculture System (RAS) and Integrated Aquaponics Systems to evolve viable indigenous technologies for adoption.

University's enduring mission, "Harnessing the science of fisheries in the State for food, nutrition and livelihood" forms the bedrock of strategy. University is working to adapt and strengthen its capacity in this challenging economic and competitive environment. University ensures to offer high-quality education to all who wish to realize their ambitions and fulfill their potential. The staff of the University are working strenuously towards achieving the goal outlined by the University and the Government of Tamil Nadu to provide quality education to the students and also for improving the living conditions of the poor and downtrodden in our society through fisheries and aquaculture technologies. The aim is to ensure sustained daily income for the fishers and to provide protein rich healthy food to the people, and our activities are focused towards this goal in a holistic manner through education and training.

12. Major Achievements of Fisheries Department during the Year 2019-20

12.1 Fishermen Welfare

- With the unrelenting and persistent efforts of the Government of Tamil Nadu, 215 fishermen apprehended by Sri Lankan Navy were released and repatriated and 36 salvageable fishing boats were brought back.
- Relief assistance under various welfare schemes totaling to a sum of Rs.296.85 Crore was disbursed to fishers/ families of 13 coastal districts.
- As part of e-governance, to ensure transparency in the implementation of welfare schemes, the Government is implementing online enrollment of beneficiaries through Common Service Centers (CSC).

- For the year 2019-20, a sum of Rs.11.10 Lakh has been released as daily relief to the 23 fishermen families of missing fishermen.
- Under the flagship scheme of diversification of trawlers in Palk Bay region to deep sea fishing 2,000 deep sea fishing boats will be constructed at an estimated cost of Rs.1,600 Crore. Construction of 22 deep sea fishing boats have been completed and launched.
- A total of 160 Satellite phones, 200 NaVIC and 80 NAVTEX Communication equipments were distributed to 80 clusters of boats engaged in deep sea fishing. Besides, 21 satellite phones were also distributed at district and State level to monitor the operation of deep sea fishing boats.
- Under the scheme on 'Providing Seamless Communication and Networking facilities' 15,004 numbers of 5 watt VHF sets have been provided to motorized fishing crafts free of cost and 2,535

numbers of 25 watt VHF boat mounted sets were provided to the mechanized fishing crafts at 75% subsidy. Totally 17,539 numbers of VHF sets have been distributed to the fishermen to ensure their safety at sea.

- 507 mechanized fishing boats of Tamil Nadu from Chennai, Cuddalore, Nagapattinam, Thoothukudi and Kanniyakumari districts have been fitted with satellite-based transponders for monitoring of the fishing vessels and to render assistance at the time of distress in deep sea up to 200 Nautical Miles. Also, recording the information of the Mechanised fishing boats including the details from the transponders which have to be incorporated in hand set based **“Thoondil”** app has been accorded by the Government.
- The Government sanctioned an amount of Rs.1.04 Crore for “Imparting special training to the 12th passed fisher youth to assist them

in joining Indian Navy and Indian Coast Guard as an alternative livelihood and employment opportunity". Training has been imparted to 145 Fisher Youth from Chennai, Cuddalore, Ramanathapuram, Thoothukudi and Kanniyakumari Region.

- The Tamil Nadu Fisheries Development Corporation Limited has made a turnover of Rs.592.98 Crore and earned a net profit of Rs.13 Crore for the financial year 2019-20. It is targeted to earn Rs.14 Crore as profit for the year 2020-21.
- The Tamil Nadu State Apex Fisheries Cooperative Federation has made a turnover of Rs.182.63 Crore and earned a net profit of Rs.2.30 Crore for the financial year 2019-20.
- The State Government has hosted the 3rd India International Expo & Summit on Sea Weed Farming on 30th and 31st January, 2020 at Chennai in collaboration with Indian

Chamber of Commerce (ICC) and Central Salt and Marine Chemicals Research Institute (CSMCRI), in which 8 Memorandum of Understandings (MoUs) worth Rs.57.70 Crore were signed with private companies for investment in this sector.

12.2 Infrastructural facilities

- Providing Finger Jetty at Chennai Fishing Harbour at Royapuram in Chennai district was completed at a cost of Rs. 5.00 Crore
- Development of Fish Landing Centre at Kurumbanai in Kanniyakumari District was completed at a cost of Rs. 11.00 Crore
- Development of Fish Landing Centre at Pallamthurai in Kanniyakumari District was completed at a cost of Rs. 4.00 Crore
- Construction of Fish Landing Centre at Chinnangudi in Nagapattinam District was completed at a cost of Rs. 5.50 Crore

- Improvements of Fish Landing Centre at Sulerikattukuppam in Kancheepuram District was completed at a cost of Rs. 4.95 Crore
- Construction of Fish Landing Centre at Periyamangodu in Thiruvallur District was completed at a cost of Rs.4.38 Crore
- Construction of Fishing Harbour at Poompuhar in Nagapattinam District was completed at a cost of Rs. 178 Crore
- Construction of Fish Landing Centre at Pozhikarai in Kanniyakumari District was completed at a cost of Rs. 4 Crore
- Construction of Fish Landing Centre at Kesavanputhenthurai in Kanniyakumari District was completed at a cost of Rs. 4 Crore.

13. Climate Resilient Fisheries

Fisheries sector have been profoundly affected by global climate change. Climate change

is directly affecting the fisheries and aquaculture sector by modulation of physiology, behavior, distribution and migration pattern, reproductive capacity and mortality of fishes which influence the livelihood of fisherfolk.

To build resilience and promote effective adaptation to climate change in the fishery and aquaculture sectors, various steps have been taken by the Government. For the enhancement of fishery resources, deployment of artificial reefs in inshore waters, ranching of commercially important fishes are in practice. For shore protection and safe berthing of fishing crafts, construction of Fishing Harbours, Groynes, RMS wall in coastal districts are in vogue. Adoption of code of conduct for responsible fishing are also in practice. Aqua farmers are encouraged to culture fast growing, disease resistant species. Various awareness programmes among the public on the impacts on climate change are also being conducted throughout the State.

14. Way Forward

The fisheries sector is envisioned as a future source of growth in the Indian economy. Fisheries sector is seeing a new spectrum of light in the national arena, with the introduction of new policies under each sub sector viz., National Marine Policy, National Inland Fisheries and Aquaculture Policy, National Mariculture Policy. Our State is committed to implement these policies to utilize the potential in all sectors in a sustainable manner and utilize the untapped resources.

Foreseeing this and in line with the newly formed Fisheries Ministry by the Government of India, the State strives hard to make a breakthrough in the development of fisheries and its growth in a sustainable manner. The Government of India, aims to raise fish production to 200 Lakh tons by 2022-23 and raise fishery exports to Rs.1 Lakh Crore by 2024-25. In tune

with this, the State Government is focused to achieve a fish production of 10 Lakh tons from the present production of 6.88 Lakh tons thereby, plans to double the exports from the present 1.28 Lakh MT to 2.50 Lakh MT in the next five years in a sustainable manner.

Tamil Nadu is one among the few states to introduce sustainable fisheries management in the marine and inland sector. The introduction of deepsea fishing vessels to tap the commercially important high valued fishes has paved way for diversifying the fishing activity and has increased revenue to fishers.

On the lines of the Code of Conduct of Responsible Fisheries (CCRF), brought by FAO to promote sustainable fishing practices, our state has been implementing the Tamil Nadu Marine Fishing Regulation Act (TNMFRA), 1983 and has been suitably revised with a slew of technological and regulatory measures. An enforcement wing

established under this department will aid in implementing regulations and assist in conservation of marine fishery wealth in our State.

The introduction of fast-growing GIFT and establishment of the only Government hatchery among the Indian states is a pride to our State. Seasonal water bodies and farmers in water starved areas are benefitted by growing GIFT. Non land-based culture practices such as seed rearing in cages and cage culture in reservoirs has led to increased fish production in limited space. The technological options in this domain include several components such as recirculatory aquaculture systems, integrated multi-trophic aquaculture, sea cage farming and off shore mariculture.

Mariculture is gaining popularity worldwide. Visualizing this, the state has promoted Seaweed culture, Integrated Mariculture, Cage culture

activities to increase fish production in a sustainable manner. These activities conserve the natural fishery wealth and provides assured returns to the coastal fishers.

The Government is spearheading to undertake new initiatives and has planned an all-round development through sustainable management and conservation of marine fishery resources, increasing the fish production, value addition through fish processing and marketing in coastal areas, creating new business avenues and entrepreneurship in the aquaculture and seaweed sector. Fisheries development through Sagar Mithras and Fish Farmer Producer Organization are the priorities for the forth coming years which involves coastal and rural youth, leading to employment generation in blue economy.

The State has a vibrant system in inland aquaculture practices, usage of advanced fishing techniques, communications skills at sea, trained

fishers on usage of safety equipments during distress and a well-established Control Room to ensure safety of fishers at sea.

The future source of food will entirely depend on the seas and blue economy will play a major role in our State's development. Fishing and fishermen communities are closely aligned with farming and are crucial to the development of our state. Every drop of water we drink, every breath we take remind us that we are connected to the sea. Fish has again found a prime spot and has given the fishery sector a new boost to the development of our state.

15. Budget Allocation for the Year 2020-21

For the year 2020-21, a sum of Rs.1,229.85 Crore has been provided in the budget. Out of this, the projected revenue expenditure is Rs.558.14 Crore and the capital expenditure is Rs.671.70 Crore.

The budget allocation for the Fisheries sector has been substantially increased over the decade. The budget allocation made in the last ten years has been furnished as follows:

Table: 11

(Rs.in Crore)

Year	Plan Allotment	Non Plan Allotment	Total Allotment
2010-2011	163.06	30.27	193.33
2011-2012	339.28	60.40	399.68
2012-2013	379.18	38.04	417.22
2013-2014	425.70	41.74	467.44
2014-2015	464.68	47.16	511.84
2015-2016	677.17	51.51	728.68
2016-2017	678.72	65.07	743.79

Year	Plan Allotment	Non Plan Allotment	Total Allotment
2017-2018	706.52	61.80	768.32
2018-2019	946.65	69.88	1016.53
2019-2020	867.79	60.06	927.85
2020-2021	1145.98	83.80	1229.84

16. Conclusion

The Government provides utmost importance for protecting the traditional fishing rights of our fishermen and has also introduced many need-based fishermen welfare/development schemes to ensure social security and safety of fishers in the State. Introduction of e-governance initiatives has enabled the fisher folk to access the Government welfare schemes with ease.

The Fisheries sector of Tamil Nadu has transformed from artisanal fishing to modern fishing with the advent of technology and Best Management Practices (BMP). All requisite measures are taken by the Government to

strengthen the fishery infrastructure, improving rural economy through integrating fish culture with agriculture/livestock, seaweed culture, marine cage culture, bivalve culture and freshwater aquaculture. Government is also implementing various alternate livelihood programmes aiming to enhance fishers income and to bring in overall development of fisheries and its allied sector so as to achieve an all-inclusive growth of the State.

The Government has committed to protect, conserve and for judicious usage the precious fisheries wealth through effective enforcement of Marine Fishing Regulation Act, Co-management initiatives, stock enhancement measures such as sea ranching and creation of artificial reef ecosystems in near shore areas, etc.

Fisheries sector of Tamil Nadu has gained limelight and exposure in the National and International arena due to the Government's

untiring efforts taken in the field of deep sea fishing, development of world class infrastructures, communication systems post harvest facilities, eco-friendly capture fishing and aquaculture practices of finfish, shell fish, ornamental fish culture, coastal-tourism, etc. Under the guidance of Hon'ble Chief Minister of Tamil Nadu following the vision and mission of Hon'ble Puratchi Thalaivi Amma, the Government will continue to take all requisite steps for the overall inclusive development of fisheries sector in the State by leap and bounds in the coming years.

D. JAYAKUMAR
Minister for Fisheries, Personnel
and Administrative Reforms