



HANDBOOK ON FISHERIES STATISTICS

2020

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



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गिरिराज सिंह
GIRIRAJ SINGH



मत्स्यपालन, पशुपालन एवं डेयरी मंत्री
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MINISTER FOR FISHERIES,
ANIMAL HUSBANDRY & DAIRYING
GOVERNMENT OF INDIA

MESSAGE

Fisheries sector plays an important role in the Indian economy. It contributes to the national income, exports, food and nutritional security and in employment generation. The Fisheries sector provides livelihood to more than 2.8 Crores Fishers and Fish farmers at the primary level and several more along the Fisheries value chain. This sector is also a principal source of livelihood for a large section of economically underprivileged population of the country, especially in the coastal areas. Considering the pivotal importance of the sector, the government has recently rolled out the ambitious scheme Pradhan Mantri Matsya Sampada Yojana (PMMSY). The scheme focuses on the doubling of fisher's income through the variety of interventions and addresses the challenges beset in the sector.

The fisheries sector in the country continues to be among the most important and fastest growing agriculture allied sector in this country. It has been observed that the sector is gradually diversifying towards high value enterprises including ambitious targets. It is evident to mention the contribution of fisheries sector to the GDP. This is due to a sustained annual growth rate for the last five decades and recorded highest as compared to the agricultural sector. The growing production of fish and employment generation, suggests that fisheries sector is booming and contributing to the economic growth of the nation.

Department has compiled the handbook on Fisheries with the latest data related to various domain of Fisheries sector mainly, Fish Production and Productivity, Disposition of Fish, Consumption of Fish, Fisheries Economy, Expenditure on Fisheries sector, Export, Fishermen Population, Fisheries Resources, Fisheries Welfare, Fisheries Institutes, International Scenario, Post-harvest Infrastructure and Fisheries Development. I am delighted to release the Handbook on Fisheries Statistics, 2020 which would be valuable resource for different stake holders of the Sector for planning and policy making.

My compliments to Department of Fisheries of my Ministry to Compile the Handbook on Fisheries Statistics-2020 in a short period of 8 months under the guidance of Secretary (Fisheries) and wish the sector would grow higher by referring this book from time to time.

(GIRIRAJ SINGH)

प्रताप चन्द्र षडङ्गी
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Pratap Chandra Sarangi



सत्यमेव जयते



एक कदम स्वच्छता की ओर

MESSAGE

राज्य मंत्री
सूक्ष्म, लघु और मध्यम उद्यम और
मत्स्य पालन, पशुपालन एवं डेयरी
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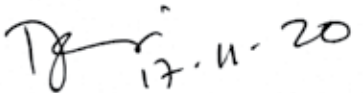
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India as a maritime country has wide water resources laying both in inland and marine sector which are being utilized for capture and culture fisheries. The fisheries development activities primarily aims at increased fish production to meet the nutritious food requirement along with the improvement in the socio-economic conditions of millions of fishers/ fish farmers and to mobilize the export market for accelerating the economy of the country.

Fisheries is a promising sector playing an important role for development of economic ambience in the country. The sector has exhibited strong growth of about 8% per year on the average with aquaculture growing at an annual average of more than 10%. The sector has been showing a steady growth in the total Gross Value-Added accounts for about 7.28% share of Agriculture GDP. The export of Marine products stood at 12.9 lakh metric tons and valued at Rs. 46,662.85 crores (6.68 billion USD) during 2019-20.

About 17% of agriculture exports of our country are fish and fish products. The Country has a long coastline of about 8,118 km and 2.02 million sq. km. of EEZ. The vast resources both marine and inland are indicative of the immersive growth and potential of the sector.

In this regard, the Handbook on Fisheries statistics 2020 will play a major role to get all the information related to fisheries at one place. I find that the Handbook is comprehensive and has a data on various domain of Fisheries sector of the country. I am confident that this booklet will be of immense value to the millions of Fishers and other stake holders in the sector. I would also like to extend my thanks to Dr. Rajeev Ranjan, Secretary (Fisheries) for this great work did by his team.



(Pratap Chandra Sarangi)

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FOREWORD

The fourteenth edition of the 'Handbook on Fisheries Statistics, 2020' contains the latest information on various domains of Fisheries sector namely, fish production and productivity, disposition of fish catch, consumption of fish, fisheries economy, expenditure on fisheries sector, exports, fishers population, fisheries resources, fishers welfare, fisheries institutes, international scenario, post-harvest infrastructure and fisheries development.

We all are aware about the importance of the fisheries sector in the socio-economic development and as a source of livelihood for around 2.8 crore number of fishers, fish farmers, fish workers and fish vendors at the primary level and several crores along the value chain. The sector also contributed Rs.46,663 crores through exports during 2019-20. The vast resources, both marine and inland are indicative of the immense potential of the sector. The country is well on its way to harness the potential of fisheries as can be seen from the fact that fish production increased from the level of 0.75 MMT (million metric tonnes) in 1950-51 to 14.2 MMT in 2019-20.

Sound data is a key pre-requisite for sound policy formulation and evidence-based decision making. With the fisheries sector growing manifold in the last 4-5 decades, mechanisms for data collection and its collation has lagged behind. While data on marine fish landings is collected regularly following internationally accepted methodologies and protocols, the same is not happening in other sectors like inland fisheries. Except for the five-yearly census carried out for the marine fisheries sector, similar information is not available for inland fisheries, including aquaculture. Bearing this in mind and acknowledging the fact that the availability of validated data continues to be one of the major challenges in the development framework, policy initiatives focusing on creating mechanisms for data collection that ensures adequate coverage of the various facets of the sector, timely and reliable data collection, smooth and unhindered access to data etc. are being taken by the Department of Fisheries.

Over the years, there has been a gradual but definitive shift in the fish production from the marine fisheries sector to inland fisheries sector primarily due to the rapid growth of inland aquaculture. It is imperative that the data base pertaining to inland fisheries and aquaculture resources and their fish production is strengthened. Accordingly, the Government of India is working on 'Strengthening of Database and Information Network for the Fisheries Sector' with the objectives to (i) improve the database on inland and marine fisheries resources and fish production using sound statistical and scientific methodology; (ii) improve the use of Geographical Information System (GIS) in the States/UTs and by other concerned implementing agencies; and (iii) register all fishing vessels in the country. The salient features are to improve the efficiency and quality of data as well as reduction in time lag in preparation and submission of survey reports; estimates of fish production from both inland and marine resources of the country; and create comprehensive database on the fishery sector so as to facilitate proper planning both at Centre as well as State/UT level.

Similarly, the statistics on marine fish landings has been collected by the Department of Fisheries of the respective coastal State Governments as well as the CMFRI, Kochi and its centre located in different coastal states of the country. The Department of Fisheries of the respective coastal State Governments need to give more attention on data gathering, improving data quality and address delay in providing the requisite information. The Fishery Survey of India (FSI) and the Central Marine Fisheries Research Institute (CMFRI) with funding assistance from the Department of Fisheries have been undertaking marine fisheries census for the main land and two Island territories.

Publication of Handbook on Fisheries Statistics is in the process of improvement with addition of fisheries related information year after year incorporating appropriate details. While this has been a useful exercise, the same needs to be further streamlined with inclusion of additional parameters, especially on the socio-economic attributes of marine fishing communities to make it comprehensive.

The use of GIS for mapping existing coastal aquaculture sites including potential areas for aquaculture as well as mariculture is another essential activity to be carried out involving States/UTs and relevant agencies in country.

It is desirable to have a uniform system for registration of all types of fishing vessels irrespective of their size and tonnage, in lieu of different registration regimes adopted by coastal States/UTs under the ReALCraft Schemes. The ReALCraft database being implemented in nine coastal States and four UTs

needs to be further upgraded and strengthened. There is need for establishing requisite infrastructure facilities for creation of a centralized database in the Department of Fisheries.

The Department of Fisheries, Government of India has recently launched a new flagship scheme the Pradhan Mantri Matsya Sampada Yojana (PMMSY) at an estimated investment of Rs.20,050 crores with an array of diverse interventions along the fisheries value chain from production to consumption. PMMSY is by far the largest scheme in the history of fisheries sector of our country, and envisages an investment of Rs.12,340 crore for taking up Beneficiary oriented activities and Rs.7,710 crores towards infrastructure and regulatory framework.

Fisheries documentation, survey and strengthening of fisheries data base both marine and inland are some of the key activities envisaged under PMMSY. A sub-component called 'Fish data collection, fisher's survey and strengthening of fisheries data base' is included under the Central sector component of PMMSY with a dedicated outlay of Rs.100 crores over five years (2020-21 to 2024-25). Under this funding support would be extended for survey and census of inland and marine fishers, resource / fish stock assessment (including seaweeds), documentation etc. In addition, specific studies aimed at validation of marine fisheries stocks for their conservation, management and productive utilization and documentation of impact of fishing activities on other marine animals are also envisaged.

I would like to thank the Fisheries Departments of all the States / UTs, CSO, NSSO, DoAC&FW, MPEDA, Fisheries institutes of DoF, ICAR and NFDB for their support and contribution extended for preparation of this Handbook. I would also wish to place on record my appreciation and efforts made by all the officers and staff of the Department of Fisheries, especially the Fisheries Statistics Unit for bringing out this publication. I hope this publication would be useful to Planners, Policy makers, Researchers, Stakeholders and other related users.

R.Ranjan

(Rajeev Ranjan)

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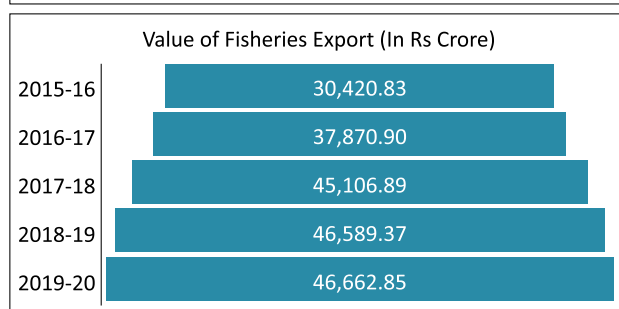
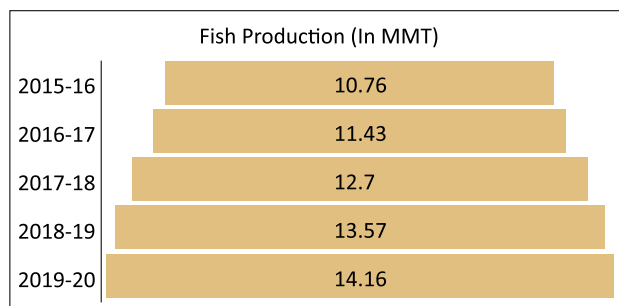
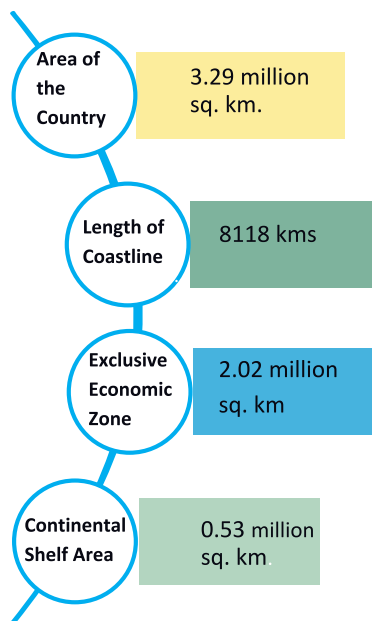
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SUMMARY AT A GLANCE



Marine Fish Production:2019-20 3.72 MMT.	Inland Fish Production: 2019-20 10.43 MMT.	Total Expenditure for development of Fisheries Sector: 2019-20 ₹ 64025.86 Lakh
Contribution of Fisheries sector in Indian Economy (GVA): 2018-19 ₹ 2,12,915 Crore	Percentage Contribution of Fisheries sector in India Economy: 2018-19 1.24%	Percentage Contribution of Economy Fisheries sector in India Agriculture Sector: 2018-19 7.28%
Total value of Fisheries Export:2019-20 ₹ 46,662.85 Crore	Total Quantity of Fisheries Export:2019-20 12,89,651 Tons	Total Quantity of world Fish Production 178.5 MMT
Consumption of Fish: 2019-20 (Top Five States) Tripura Kerala Manipur Odisha Assam	Post-Harvest Infrastructure :2019-20 Total Fish landing centres - 1548 Major Fishing Harbours commissioned-7 Minor Fishing Harbours commissioned- 62	Fisheries Welfare: 2019-20 Number of houses sanctioned to Fishermen – 4504 Number of Fishermen Insured - 3,586,721 Relief provided to Fishermen under SCR – 765,194

CHAPTER 1

FISH PRODUCTION IN INDIA



Table 1.1: Fish Production in India for the period 1980-81 to 2019-20

Year	Fish production (In Lakh Tonnes)			Annual Average Growth Rate (Percent)		
	Marine	Inland	Total	Marine	Inland	All India
1980-81	15.55	8.87	24.42	4.22	4.6	4.36
1981-82	14.45	9.99	24.44	-7.07	12.63	0.08
1982-83	14.27	9.4	23.67	-1.25	-5.91	-3.15
1983-84	15.19	9.87	25.06	6.45	5	5.87
1984-85	16.98	11.03	28.01	11.78	11.75	11.77
1985-86	17.16	11.6	28.76	1.06	5.17	2.68
1986-87	17.13	12.29	29.42	-0.17	5.95	2.29
1987-88	16.58	13.01	29.59	-3.21	5.86	0.58
1988-89	18.17	13.35	31.52	9.59	2.61	6.52
1989-90	22.75	14.02	36.77	25.21	5.02	16.66
1990-91	23	15.36	38.36	1.1	9.56	4.32
1991-92	24.47	17.1	41.57	6.39	11.33	8.37
1992-93	25.76	17.89	43.65	5.27	4.62	5
1993-94	26.49	19.95	46.44	2.83	11.51	6.39
1994-95	26.92	20.97	47.89	1.62	5.11	3.12
1995-96	27.07	22.42	49.49	0.56	6.91	3.34
1996-97	29.67	23.81	53.48	9.6	6.2	8.06
1997-98	29.5	24.38	53.88	-0.57	2.39	0.75
1998-99	26.96	26.02	52.98	-8.61	6.73	-1.67
1999-00	28.52	28.23	56.75	5.79	8.49	7.12
2000-01	28.11	28.45	56.56	-1.44	0.78	-0.33
2001-02	28.3	31.26	59.56	0.68	9.88	5.3
2002-03	29.9	32.1	62	5.65	2.69	4.1
2003-04	29.41	34.58	63.99	-1.64	7.73	3.21
2004-05	27.79	35.26	63.05	-5.51	1.97	-1.47
2005-06	28.16	37.56	65.72	1.33	6.52	4.23
2006-07	30.24	38.45	68.69	7.39	2.37	4.52
2007-08	29.2	42.07	71.27	-3.44	9.41	3.76
2008-09	29.78	46.38	76.16	1.99	10.24	6.86
2009-10	31.04	48.94	79.98	4.23	5.52	5.02
2010-11	32.5	49.81	82.31	4.7	1.78	2.91
2011-12	33.72	52.94	86.66	3.75	6.28	5.28
2012-13	33.21	57.19	90.4	-1.51	8.03	4.32
2013-14	34.43	61.36	95.79	3.67	7.29	5.96
2014-15	35.69	66.91	102.6	3.66	9.04	7.11
2015-16	36	71.62	107.62	0.87	7.04	4.89
2016-17	36.25	78.06	114.31	1.14	8.63	6.12
2017-18	37.56	89.48	127.04	3.61	14.62	11.13
2018-19	38.53	97.2	135.73	2.58	8.62	6.84
2019-20	37.27	104.37	141.64	-3.2	7.37	4.35

Source: Department of Fisheries, States Government / UTs Administration

Fig 1: Marine Fish Production: 2019-20 (In Lakh Tonnes)

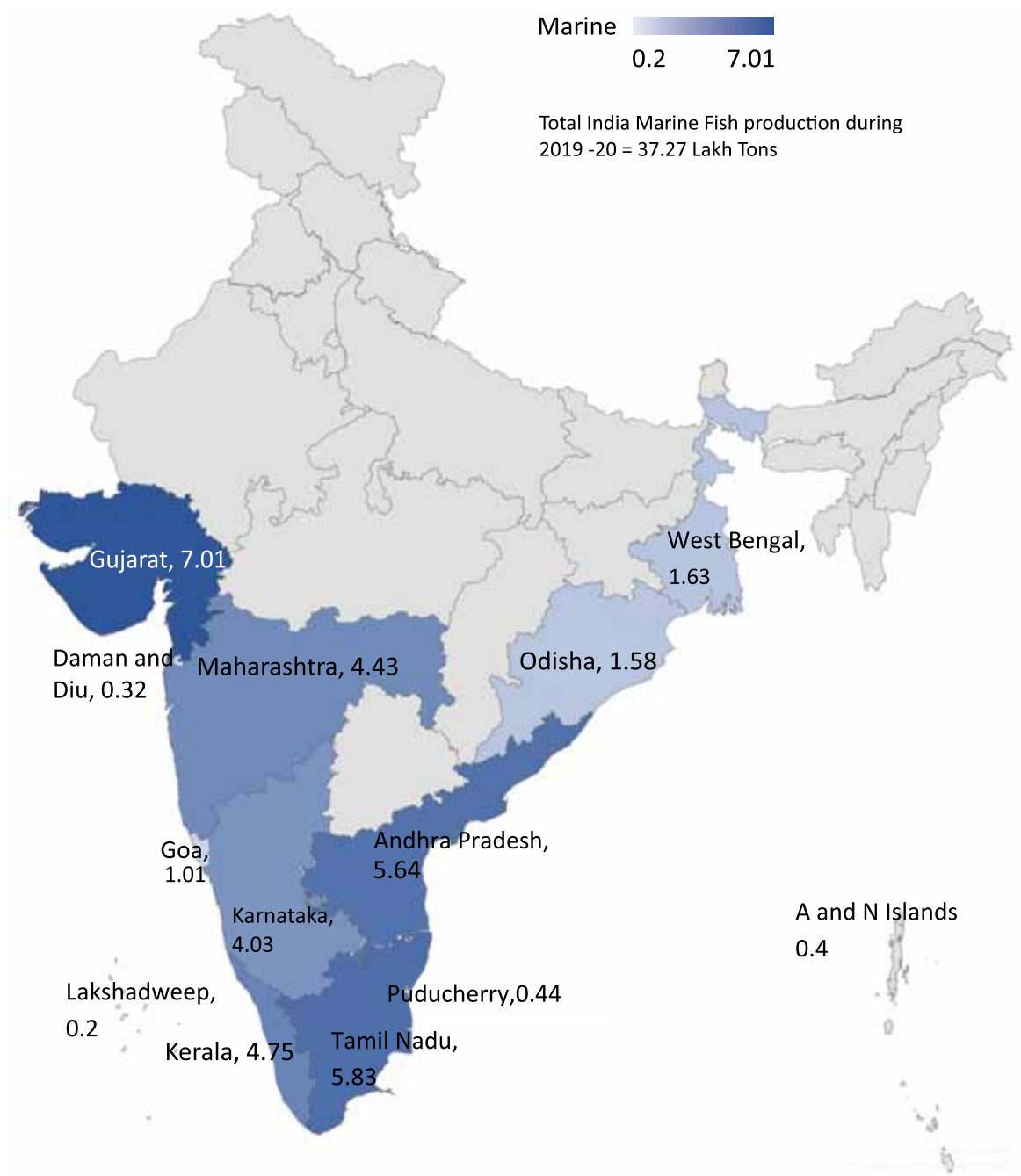
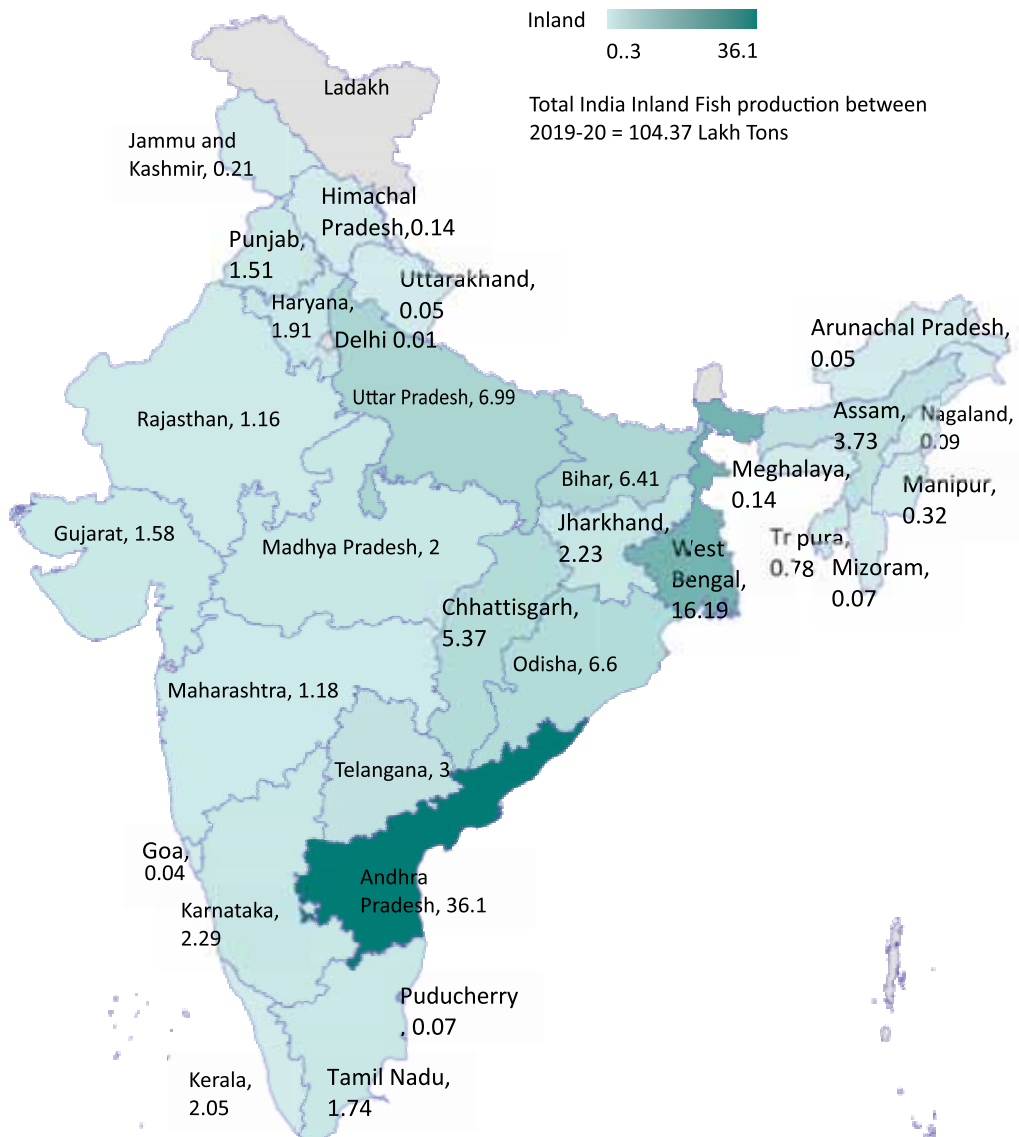


Fig 2: Inland Fish Production: 2019-20 (In Lakh Tonnes)



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Table 1.2: State-wise Fish Production, India (In Lakh Tonnes)

State/UT's	2015-16		2016-17		2017-18		2018-19		2019-20	
	Inland	Marine	Inland	Marine	Inland	Marine	Inland	Marine	Inland	Marine
Andhra Pradesh	18.32	5.2	21.86	5.8	28.45	6.05	33.91	6	36.1	5.64
Arunachal Pradesh	0.04	0	0.04	0	0.04	0	0.05	0	0.05	0
Assam	2.94	0	3.07	0	3.27	0	3.31	0	3.73	0
Bihar	5.07	0	5.09	0	5.88	0	6.02	0	6.41	0
Chhattisgarh	3.42	0	3.77	0	4.57	0	4.89	0	5.72	0
Goa	0.05	1.07	0.04	1.14	0.06	1.18	0.05	1.15	0.04	1.01
Gujarat	1.12	6.97	1.17	6.99	1.38	7.01	1.42	6.99	1.58	7.01
Haryana	1.21	0	1.44	0	1.9	0	1.8	0	1.91	0
Himachal Pradesh	0.12	0	0.13	0	0.13	0	0.13	0	0.14	0
Jharkhand	1.16	0	1.45	0	1.9	0	2.08	0	2.23	0
Karnataka	1.69	4.12	1.59	3.99	1.88	4.14	1.98	3.9	2.29	4.03
Kerala	2.11	5.17	1.61	4.31	1.89	4.84	1.92	6.09	2.05	4.75
Madhya Pradesh	1.15	0	1.39	0	1.43	0	1.73	0	2	0
Maharashtra	1.46	4.34	2	4.63	1.31	4.75	1	4.68	1.18	4.43
Manipur	0.32	0	0.32	0	0.33	0	0.32	0	0.32	0
Meghalaya	0.11	0	0.12	0	0.12	0	0.13	0	0.14	0
Mizoram	0.07	0	0.08	0	0.08	0	0.07	0	0.07	0
Nagaland	0.08	0	0.09	0	0.09	0	0.09	0	0.09	0
Odisha	3.77	1.45	4.55	1.53	5.34	1.51	6	1.59	6.6	1.58
Punjab	1.2	0	1.33	0	1.37	0	1.35	0	1.51	0
Rajasthan	0.42	0	0.5	0	0.54	0	0.55	0	1.16	0
Sikkim	0	0	0	0	0	0	0	0	0	0
Tamil Nadu	2.43	4.67	1.97	4.72	1.85	4.97	1.7	5.2	1.74	5.83
Telangana	2.37	0	1.99	0	2.7	0	2.84	0	3	0
Tripura	0.69	0	0.72	0	0.77	0	0.7	0	0.78	0
Uttar Pradesh	5.05	0	6.18	0	6.29	0	6.62	0	6.99	0
Uttarakhand	0.04	0	0.04	0	0.05	0	0.05	0	0.05	0
West Bengal	14.93	1.78	15.25	1.77	15.57	1.85	16.19	1.63	16.19	1.63
A and N Islands	0	0.37	0	0.39	0	0.39	0	0.4	0	0.4
Chandigarh	0	0	0	0	0	0	0.01	0	0.01	0
D & Nagar Haveli and Daman and Diu	0	0.23	0.01	0.23	0	0.24	0	0.28	0	0.32
Delhi	0.01	0	0.01	0	0.01	0	0	0	0.01	0
Jammu & Kashmir	0.2	0	0.2	0	0.21	0	0.21	0	0.21	0
Ladakh	-	-	-	-	-	-	-	-	0	0
Lakshadweep	0	0.16	0	0.3	0	0.21	0	0.22	0	0.2
Puducherry	0.07	0.47	0.04	0.46	0.07	0.42	0.07	0.4	0.07	0.44
India	71.62	36	78.06	36.25	89.48	37.56	97.2	38.53	104.37	37.27

Source: Department of Fisheries, States Government / UTs Administration

Table 1.3: Species-wise Inland Fish landings by States and Union Territories: 2019-20 (In Lakh Tonnes)

States/UT's	Major Carps (Catla, Rohu, Marigal)	Minor Carps	Exotic Carps	Murrels (Ophio- cephalus spp.)	Catfishes (Wallago attu, pangasius)	Other fresh water fishes	Total
Andhra Pradesh	19.98	0	2.19	0.58	2.1	11.26	36.11
Arunachal Pradesh	0.01	0	0.02	0	0	0.02	0.05
Assam	1.44	0.48	0.27	0.25	0.4	0.89	3.73
Bihar	3.14	1.41	0.13	0.45	0.06	1.22	6.41
Chhattisgarh	4.32	0.05	0.52	0.01	0.43	0.39	5.72
Goa	0	0	0	0	0	0.04	0.04
Gujarat	0.41	0.01	0	0.02	0.06	1.08	1.58
Haryana	1.17	0.02	0.66	0	0.03	0.02	1.9
Himachal Pradesh	0.13	0	0	0	0	0.01	0.14
Jharkhand	1.83	0.02	0.2	0	0.18	0	2.23
Karnataka	1.04	0.17	0.78	0	0.02	0.28	2.29
Kerala	0.1	0	0.01	0	0.02	1.92	2.05
Madhya Pradesh	1.54	0.1	0.29	0	0.06	0.01	2
Maharashtra	0.78	0	0.12	0	0	0.28	1.18
Manipur	0.1	0.01	0.2	0	0	0.01	0.32
Meghalaya	0.06	0.02	0.05	0	0	0.01	0.14
Mizoram	0.03	0	0.04	0	0	0	0.07
Nagaland	0.05	0	0.04	0	0	0	0.09
Odisha	3.96	0.4	0.79	0.04	0.11	1.3	6.6
Punjab	0.85	0.02	0.61	0	0.02	0.01	1.51
Rajasthan	0.42	0.1	0.04	0	0.02	0.58	1.16
Sikkim	0	0	0	0	0	0	0
Tamil Nadu	0.54	0	0.21	0.03	0.05	0.91	1.74
Telangana	1.45	0.16	0.4	0.38	0.2	0.41	3
Tripura	0.51	0.08	0.17	0	0.01	0.01	0.78
Uttar Pradesh*	5.61	1.27	-	0	0.08	0.03	6.99
Uttarakhand	0.02	0	0.01	0	0.01	0.01	0.05
West Bengal	9.96	0.55	1.93	0.25	0.44	3.06	16.19
A and N Islands	0	0	0	0	0	0	0
Chandigarh	0	0	0	0	0	0.01	0.01
Daman and Diu, D & N haveli	0	0	0	0	0	0	0
Delhi	0.01	0	0	0	0	0	0.01
Jammu & Kashmir	0.01	0.01	0.12	0	0.01	0.06	0.21
Ladakh	0	0	0	0	0	0	0
Lakshadweep	0	0	0	0	0	0	0
Puducherry	0.03	0.01	0.01	0	0.01	0.01	0.07
Total	59.5	4.89	9.81	2.01	4.32	23.84	104.37

Source: Department of Fisheries, States Government / UTs Administration

*Uttar Pradesh: 561000 (Including Exotic Carps)

**Table 1.4: Species-wise Marine fish Landings by Coastal States and Union Territories: 2019-20 (In Lakh Tonnes)
(East Coast)**

Species	Andhra Pradesh	Odisha	Tamil Nadu	West Bengal	A and N Islands	Puducherry	Total
Sharks (Selachimorpha)	0.18	0.02	0	0	0	0	0.2
Skates/Guitarfish (Rajidae)	0.14	0.01	0.04	0.09	0.02	0	0.3
Rays (Batoidea)	0.09	0.01	0	0	0	0.01	0.11
Eels (Anguilliformes)	0.08	0.03	0.08	0	0	0	0.19
Catfishes (Siluriformes)	0.21	0.12	0.01	0.2	0	0.01	0.55
<i>Indian Oil sardine (Sardinella longiceps)</i>	0.3	0.07	0.06	0.05	0.04	0.05	0.57
<i>Other sardines (Sardinella fimbriata and others)</i>	0.17	0.04	0.3	0	0	0.03	0.54
<i>Hilsa shad (Tenualosa ilisha)</i>	0.08	0.04	0.44	0.2	0	0	0.76
Other shads (Alosinae)	0.03	0.04	0	0	0	0	0.07
Coilia (Coilia spp)	0.03	0	0	0	0	0	0.03
Setipinna (Setipinna spp)	0.03	0	0	0	0	0	0.03
Stolephorus (Stolephorus spp)	0.08	0	0	0	0	0	0.08
Thryssa (Thryssa spp)	0.05	0.03	0.23	0	0	0	0.31
Wolf herring (Chirocentrus spp.)	0.01	0.02	0.04	0	0	0	0.07
Other clupeids	0.45	0.1	0.26	0	0	0.01	0.82
<i>BOMBAY DUCK (Harpadon nehereus)</i>	0.04	0.02	0	0	0	0	0.06
LIZARD FISHES (Synodontidae)	0.03	0	0.06	0	0	0.01	0.1
HALF BEAKS&FULL BEAKS (Hemiramphidae & Belonidae)	0.01	0	0.06	0	0	0	0.07
FLYING FISHES (Exocoetidae)	0.01	0	0.11	0	0	0.01	0.13
<i>Rock cods (Lotella rhacina)</i>	0.03	0	0	0	0	0	0.03
Snappers (Lutjanidae)	0.01	0.01	0	0	0.05	0	0.07
Pig-face bream (Lethrinidae)	0.03	0	0.14	0	0	0	0.17
Threadfin bream (Nemipteridae)	0.09	0.02	0.09	0	0	0.01	0.21
Grouper (Epinephelinae)	0.09	0	0	0	0	0	0.09
<i>Cobia (Rachycentron canadum)</i>	0	0	0.01	0	0	0	0.01
<i>Seabass (Lates calcarifer)</i>	0	0	0	0	0	0.01	0.01
Other perches & perch like	0.07	0.02	0.26	0.09	0	0.01	0.45
GOATFISHES (Mullidae)	0.09	0	0.15	0	0	0	0.24
THREADFINS (Polynemidae)	0.08	0.03	0.05	0	0	0.01	0.17
CROAKERS (Sciaenidae)	0.08	0.05	0.15	0.12	0.01	0	0.41
RIBBON FISHES (Trachipteridae)	0.12	0.05	0.09	0	0	0.01	0.27
Horse Mackerel (Caranx & Trichiurus)	0.01	0.01	0.25	0.2	0	0.01	0.48
Scads (Decapterus spp.)	0.01	0	0	0	0	0	0.01
<i>Leather-jackets (Oligoplites saurus)</i>	0.01	0	0	0	0	0	0.01
Pompano (Trachynotus spp.)	0	0.01	0.02	0	0	0	0.03

Table 1.4: Species-wise Marine fish Landings by Coastal States and Union Territories: 2019-20 (In Lakh Tonnes)
(East Coast)

Species	Andhra Pradesh	Odisha	Tamil Nadu	West Bengal	A and N Islands	Puducherry	Total
Other carangids	0	0	0	0.1	0.03	0	0.13
SILVERBELLIES (Gerridae)	0.01	0.01	0.3	0	0.03	0.02	0.37
BIG-JAWED JUMPER (<i>Lactarius lactarius</i>)	0	0	0.07	0	0	0	0.07
Black pomfret (<i>Parastromatius niger</i>)	0.28	0.04	0.01	0	0	0.01	0.34
Silver pomfret (<i>Pampus argenteus</i>)	0.15	0.03	0.01	0	0	0	0.19
Indian mackerel (<i>Rastrelliger kanagurta</i>)	0.19	0.06	0.24	0.08	0	0.02	0.59
Other mackerels	0.13	0.01	0	0	0.03	0	0.17
Scomberomorus spp.	0	0.04	0.1	0	0.01	0.01	0.16
Acanthocybium solandri	0	0	0	0	0	0	0
Kawa kawa (<i>Euthynnus affinis</i>)	0	0.01	0.26	0	0.02	0	0.29
Frigate tuna (<i>Auxis</i> spp)	0.01	0	0	0	0	0	0.01
Skipjack tuna (<i>Katsuwonus pelamis</i>)	0.03	0	0	0	0	0	0.03
Longtail tuna (<i>Thunnus tonggol</i>)	0.01	0	0	0	0	0.01	0.02
Yellowfin tuna (<i>Thunnus albacares</i>)	0.12	0	0	0	0	0	0.12
Other tunnies	0.11	0	0	0	0	0	0.11
BILL FISHES (Xiphiidae)	0	0	0	0	0	0	0
BARRACUDAS (<i>Sphyraena</i> spp)	-	0	0.08	0	0.01	0.01	0.1
MULLETS (Mugilidae)	0.12	0.06	0.03	0.1	0.01	0.04	0.36
UNICORN COD (<i>Bregmaceros maclellandii</i>)	-	0	0	0	0	0	0
Halibut (<i>Hippoglossus</i> spp)	0.04	0	0	0	0	0	0.04
Flounders (Pleuronectoidei)	-	0	0	0	0	0	0
Soles (Soleidae)	-	0.02	0.07	0	0	0.01	0.1
Penaeid prawns (Penaeidae)	1.08	0.4	0.02	0.07	0	0.03	1.6
Non-penaeid prawns (Sergestidae)	0.18	0.04	0.38	0.03	0	0	0.63
Lobsters (Nephropidae)	0.01	0	0.03	0	0	0	0.04
Crabs (Brachyura)	0.05	0.05	0.01	0	0.01	0.01	0.13
Stomatopods (Stomatopoda)	0	0.02	0.17	0	0	0	0.19
Bivalves (Bivalvia)	0	0	0.08	0	0	0	0.08
Gastropods (Gastropoda)	0	0	0	0	0	0	0
Squids (Decapodiformes)	0.01	0.04	0	0	0	0.01	0.06
Cuttlefish (Sepida)	0.01	0	0.11	0	0	0	0.12
Octopus (Octopoda)	0	0	0.11	0	0	0	0.11
MISCELLANEOUS	0.36	0	0.85	0.3	0.13	0.07	1.71
Overall Total	5.64	1.58	5.83	1.63	0.4	0.44	15.52

Source: Department of Fisheries, States Government / UTs Administration

**Table 1.4: Species-wise Marine fish Landings by Coastal States and Union Territories: 2019-20 (In Lakh Tonnes)
(West Coast)**

Species	Goa	Gujarat	Karnataka	Kerala	Maharashtra	D&Diu, D&N Haveli	Lakshadweep	Total
Sharks (Selachimorpha)	0.01	0.09	0.01	0.01	0.08	0	0	0.2
Skates/Guitarfish (Rajidae)	0	0	0	0	0	0	0	0
Rays (Batoidea)	0	0	0	0.01	0	0	0	0.01
Eels (Anguilliformes)	0	0.03	0.01	0.01	0.02	0	0	0.07
Catfishes (Siluriformes)	0.01	0.27	0.03	0	0.09	0.01	0	0.41
<i>Indian Oil sardine (Sardinella longiceps)</i>	0.05	0	0.16	0.45	0.11	0	0	0.77
Other sardines (Sardinella fimbriata and others)	0.04	0	0.1	0.33	0	0	0	0.47
<i>Hilsa shad (Tenualosa ilisha)</i>	0	0.02	0.01	0	0.03	0	0	0.06
Other shads (Alosinae)	0	0	0.02	0	0.27	0	0	0.29
Coilia (Coilia spp)	0	0.22	0.03	0	0	0.02	0	0.27
Setipinna (Setipinna spp)	0	0	0.05	0	0	0	0	0.05
Stolephorus (Stolephorus spp)	0	0	0	0.58	0	0	0	0.58
Thryssa (Thryssa spp)	0	0	0.02	0.07	0.05	0	0	0.14
Wolf herring (Chirocentrus spp.)	0	0	0.02	0	0.04	0	0	0.06
Other clupeids	0	0.12	0.17	0.06	0.01	0	0	0.36
<i>BOMBAY DUCK (Harpadon nehereus)</i>	0	0.89	0	0	0.32	0	0	1.21
LIZARD FISHES (Synodontidae)	0	0	0.12	0.17	0.04	0	0	0.33
HALF BEAKS&FULL BEAKS (Hemiramphidae & Belonidae)	0	0	0.01	0.01	0	0	0	0.02
FLYING FISHES (Exocoetidae)	0	0	0	0	0	0	0	0
<i>Rock cods (Lotella rhacina)</i>	0	0	0	0.03	0	0	0	0.03
Snappers (Lutjanidae)	0	0	0.07	0.01	0	0	0	0.08
Pig-face bream (Lethrinidae)	0	0	0.05	0	0.03	0	0	0.08
Threadfin bream (Nemipteridae)	0	0	0.32	0.28	0	0	0	0.6
Grouper (Epinephelinae)	0.01	0	0	0	0.01	0	0	0.02
<i>Cobia (Rachycentron canadum)</i>	0	0	0	0	0	0	0	0
<i>Seabass (Lates calcarifer)</i>	0	0	0	0	0	0	0	0
Other perches & perch	0	0.11	0.28	0.08	0	0	0	0.47
GOATFISHES (Mullidae)	0	0	0	0	0.11	0	0	0.11
THREADFINS (Polynemidae)	0.01	0.04	0	0	0.03	0	0	0.08
CROAKERS (Sciaenidae)	0.02	1.33	0.08	0.05	0.05	0.02	0	1.55
RIBBON FISHE (Trachipteridae)	0.01	0.5	0.18	0.05	0.27	0.18	0	1.19
Horse Mackerel (Caranx & Trichiurus)	0.01	0	0.07	0.02	0.11	0	0	0.21
Scads (Decapterus spp.)	0	0	0.2	0.16	0	0	0	0.36
Leather-jackets (Oligoplites saurus)	0.01	0.07	0.01	0	0	0.02	0	0.11
Pompano (Trachynotus spp.)	0	0	0	0	0	0	0	0

Table 1.4: Species-wise Marine fish Landings by Coastal States and Union Territories: 2019-20 (In Lakh Tonnes)
(West Coast)

Species	Goa	Gujarat	Karnataka	Kerala	Maharashtra	D&Diu, D&N Haveli	Lakshadweep	Total
Other carangids ()	0.02	0.13	0.08	0.23	0	0	0	0.46
SILVERBELLIES (Gerridae)	0.04	0.09	0.07	0.03	0	0	0	0.23
BIG-JAWED JUMPER <i>Lactarius lactarius</i>)	0.01	0	0.06	0.01	0.04	0	0	0.12
Black pomfret (<i>Parastromatius niger</i>)	0	0.04	0.04	0.01	0.02	0.01	0	0.12
Silver pomfret (<i>Pampus argenteus</i>)	0.01	0.11	0.03	0.01	0.18	0.01	0	0.35
Indian mackerel (<i>Rastrelliger kanagurta</i>)	0.26	0	0.5	0.36	0.22	0	0	1.34
Other mackerels	0	0	0.07	0	0	0	0	0.07
<i>Scomberomorus</i> spp.	0.02	0.12	0.04	0.04	0.11	0	0	0.33
<i>Acanthocybium solandri</i>	0	0	0	0	0	0	0	0
Kawa kawa (<i>Euthynnus affinis</i>)	0	0	0.11	0.05	0.14	0	0.01	0.31
Frigate tuna (<i>Auxis</i> spp)	0.08	0	0	0	0	0	0.01	0.09
Skipjack tuna (<i>Katsuwonus pelamis</i>)	0	0	0	0.04	0	0	0.08	0.12
Longtail tuna (<i>Thunnus tonggol</i>)	0	0	0	0	0	0	0	0
Yellowfin tuna (<i>Thunnus albacares</i>)	0	0.07	0	0.07	0	0	0.05	0.19
Other tunnies	0	0	0	0	0	0	0.01	0.01
BILL FISHES (<i>Xiphiidae</i>)	0	0	0.01	0.04	0	0	0	0.05
BARRACUDAS (<i>Sphyraena</i> spp)	0	0	0.05	0.03	0.05	0	0	0.13
MULLETS (<i>Mugilidae</i>)	0	0.06	0	0	0	0	0	0.06
UNICORN COD (<i>Bregmaceros maclellandii</i>)	0	0	0.13	0	0	0	0	0.13
Halibut (<i>Hippoglossus</i> spp)	0	0	0.03	0	0	0	0	0.03
Flounders (<i>Pleuronectoidei</i>)	0	0	0.02	0	0	0	0	0.02
Soles (<i>Soleidae</i>)	0.01	0.11	0.05	0.14	0.09	0	0	0.4
Penaeid prawns (<i>Penaeidae</i>)	0.05	0.12	0.22	0.4	0.43	0	0	1.22
Non-penaeid prawns (<i>Sergestidae</i>)	0	0.41	0	0.03	0.49	0	0	0.93
Lobsters (<i>Nephropidae</i>)	0	0.02	0	0	0.01	0	0	0.03
Crabs (<i>Brachyura</i>)	0.01	0.06	0.03	0.05	0.04	0	0	0.19
Stomatopods (<i>Stomatopoda</i>)	0	0	0.19	0	0	0	0	0.19
Bivalves (<i>Bivalvia</i>)	0	0	0	0	0	0	0	0
Gastropods (<i>Gastropoda</i>)	0	0	0	0.02	0	0	0	0.02
Squids (<i>Decapodiformes</i>)	0.02	0	0.17	0.18	0	0.03	0	0.4
Cuttlefish (<i>Sepida</i>)	0	0.36	0.07	0.12	0.32	0.01	0	0.88
Octopus (<i>Octopoda</i>)	0	0	0.02	0.05	0	0	0	0.07
MISCELLANEOUS	0.3	1.62	0.02	0.46	0.62	0.01	0.04	3.07
Overall Total	1.01	7.01	4.03	4.75	4.43	0.32	0.2	21.75

Source: Department of Fisheries, State Govt./ UT's Administration

Table 1.5: Preserved and Processed Commodities by states/Union Territories: 2019-20 (In Lakh Tonnes)

States/UT's	Tuna Frozen	Marine Fish Frozen	Fish Dried, Un-salted	Fish Dried & Salted or smoked	Shark fins, Dried, Salted etc	Frozen Whole cooked Lobster	Shrimp & Prawn Frozen	Dried Prawn/ Shrimp	Frozen Cut-fish fillets	Fish meals soluble
Andhra Pradesh	0.01	0.05	0	0	0	0	3.35	0	0.01	0
Arunachal Pradesh	0	0	0	0	0	0	0	0	0	0
Assam	0	0	0	0	0	0	0	0	0	0
Bihar	0	0	0	0	0	0	0	0	0	0
Chhattisgarh	0	0	0	0.01	0	0	0	0	0	0
Goa	0	0	0	0	0	0	0	0	0	0
Gujarat	0	1.32	2.2	1.36	0	0	0.06	0	0	0
Haryana	0	0	0	0	0	0	0	0	0	0
Himachal Pradesh	0	0	0	0	0	0	0	0	0	0
Jharkhand	0	0	0	0	0	0	0	0	0	0
Karnataka	0.03	0.32	0.08	0.19	0	0	0.04	0	0	0.06
Kerala	0	0.6	0.13	0.52	0	0	0.64	0.01	0	0
Madhya Pradesh	0	0	0	0	0	0	0	0	0	0
Maharashtra	0	1.04	0.10	0.04	0	0.21	0	0.04	0.06	0
Manipur	0	0	0	0	0	0	0	0	0	0
Meghalaya	0	0	0	0	0	0	0	0	0	0
Mizoram	0	0	0	0	0	0	0	0	0	0
Nagaland	0	0	0	0.01	0	0	0	0	0	0
Odisha	0	0.01	0	0	0	0	0.65	0	0	0
Punjab	0	0	0	0	0	0	0	0	0	0
Rajasthan	0	0	0	0	0	0	0	0	0	0
Sikkim	0	0	0	0	0	0	0	0	0	0
Tamil Nadu	0.11	0.47	0	0	0	0	0.8	0	0.04	0
Telangana	0	0	0.09	0	0	0	0	0	0	0
Tripura	0	0	0	0	0	0	0	0	0	0
Uttar Pradesh	0	0	0	0	0	0	0	0	0	0
Uttarakhand	0	0	0	0	0	0	0	0	0	0
West Bengal	0	0.05	0.04	0	0.07	0	0.77	0	0.05	0
A and N Islands	0	0.02	0	0	0	0	0	0	0	0
Chandigarh	0	0	0	0	0	0	0	0	0	0
Daman and Diu, D & Nagar Haveli	0	0.22	0	0	0	0	0.01	0	0	0
Delhi	0	0	0	0	0	0	0	0	0	0
Jammu & Kashmir	0	0	0	0	0	0	0	0	0	0
Ladakh	0	0	0	0	0	0	0	0	0	0
Lakshadweep	0.01	0	0	0.01	0	0	0	0	0	0
Puducherry	0	0.01	0	0	0	0	0	0	0	0
Total	0.16	4.11	2.64	2.14	0.07	0.21	6.32	0.05	0.16	0.06

Table 1.5: Preserved and Processed Commodities by states/Union Territories: 2019-20 (In Lakh Tonnes)

States/UT's	Frozen Squids	Dried Squids	Yellow-fin tuna, frozen	Mackerels, frozen	Fish, salted & dried	Lobsters, Whole, frozen	Jellyfish, dried, salted or in brine	Miscellaneous	Overall Total
Andhra Pradesh	0	0	0	0	0	0	0	0.07	3.49
Arunachal Pradesh	0	0	0	0	0	0	0	0	0
Assam	0	0	0	0	0	0	0	0	0
Bihar	0	0	0	0	0	0	0	0	0
Chhattisgarh	0	0	0	0	0	0	0	0	0.01
Goa	0	0	0	0	0	0	0	0	0
Gujarat	0	0	0	0	0	0	0	0.56	5.5
Haryana	0	0	0	0	0	0	0	0	0
Himachal Pradesh	0	0	0	0	0	0	0	0	0
Jharkhand	0	0	0	0	0	0	0	0	0
Karnataka	0.08	0	0	0.18	0.01	0	0	0	0.99
Kerala	0	0	0	0	0	0	0	0	1.9
Madhya Pradesh	0	0	0	0	0	0	0	0	0
Maharashtra	0.16	0	0	0	0	0	0	0	1.65
Manipur	0	0	0	0	0	0	0	0	0
Meghalaya	0	0	0	0	0	0	0	0	0
Mizoram	0	0	0	0	0	0	0	0	0
Nagaland	0	0	0	0	0	0	0	0	0.01
Odisha	0	0	0	0	0	0	0	0	0.66
Punjab	0	0	0	0	0	0	0	0	0
Rajasthan	0	0	0	0	0	0	0	0	0
Sikkim	0	0	0	0	0	0	0	0	0
Tamil Nadu	0.05	0	0	0	0.36	0	0	0.12	1.95
Telangana	0	0	0	0	0	0	0	0	0.09
Tripura	0	0	0	0	0	0	0	0	0
Uttar Pradesh	0	0	0	0	0	0	0	0	0
Uttarakhand	0	0	0	0	0	0	0	0	0
West Bengal	0	0	0	0	0	0	0	0.14	1.12
A and N Islands	0	0	0	0	0.07	0	0	0	0.09
Chandigarh	0	0	0	0	0	0	0	0	0
Daman and Diu, D & Nagar Haveli	0.03	0	0	0	0	0	0	0	0.26
Jammu & Kashmir	0	0	0	0	0	0	0	0	0
Delhi	0	0	0	0	0	0	0	0	0
Ladakh	0	0	0	0	0	0	0	0	0
Lakshadweep	0	0	0	0	0	0	0	0	0.02
Puducherry	0	0	0	0	0.01	0	0	0	0.02
Total	0.32	0	0	0.18	0.45	0	0	0.89	17.76

Source: Department of Fisheries, States Government / UTs Administration

Table 1.6 : Year-wise Fish Seed Production in India		
S.N.	Year	Production (Lakhs fry)
1	1985-86	63,220
2	1986-87	76,010
3	1987-88	86,080
4	1988-89	93,250
5	1989-90	96,910
6	1990-91	1,03,320
7	1991-92	1,22,030
8	1992-93	1,25,000
9	1993-94	1,42,390
10	1994-95	1,45,440
11	1995-96	1,50,070
12	1996-97	1,58,520
13	1997-98	1,59,040
14	1998-99	1,51,560
15	1999-00	1,65,890
16	2000-01	1,56,080
17	2001-02	1,57,580
18	2002-03	1,63,330
19	2003-04	1,92,310
20	2004-05	2,07,910
21	2005-06	2,19,880
22	2006-07	2,36,480
23	2007-08	2,41,440
24	2008-09	3,21,770
25	2009-10	2,93,130
26	2010-11	3,41,095
27	2011-12	3,65,651
28	2012-13	3,49,202
29	2013-14	4,14,484
30	2014-15	3,93,487
31	2015-16	3,54,350
32	2016-17	3,57,439
33	2017-18	4,44,207
34	2018-19	4,81,974
35	2019-20	5,21,706

Source: Director of Fisheries, State Govt. / UT's Administration

Fig 3: Total Fish Seed Production, India (Lakhs Fry)

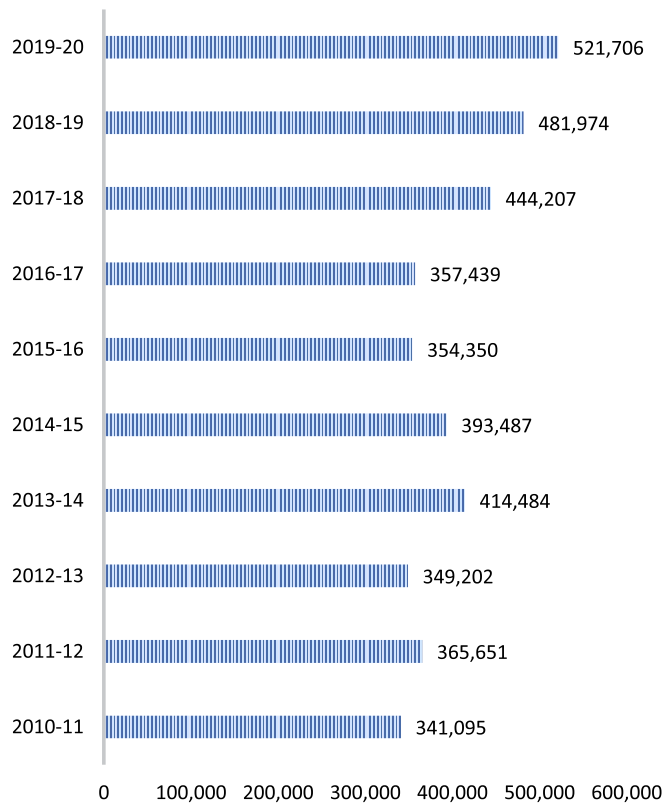


Table 1.7 : State-wise Fish Seed Production in India (lakhs Fry)

State/Union Territory	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Andhra Pradesh	7097	7923	8845	8842	5358	38065
Arunachal Pradesh	55	65	70	0	0	190
Assam	56780	67580	80000	98930	95190	398480
Bihar	5241	7932.2	9206	9286.5	13727.18	45392.88
Chhattisgarh	14917.2	19750.4	22186	25131.8	27386.8	109372.2
Goa	8	6	7	6	3	30
Gujarat	2845.2	5529.3	1852.3	6340.5	26083.7	42651
Haryana	6140.2	7046	4776.8	4229.6	4538.06	27630.66
Himachal Pradesh	599.2	625	47	18.3	6.8	1296.3
Jharkhand	17023.9	41501	103349.1	103629	105692.4	371195.4
Karnataka	5915.2	4998.8	2481.1	6298	5816.5	25509.6
Kerala	1668.8	1770.9	1730.4	944.42	1282	7396.52
Madhya Pradesh	9520.5	11113	11172.3	13729.83	14592.09	60127.72
Maharashtra	989.6	1895.5	6250	2810.87	13662.7	25608.67
Manipur	2190	2150	2500	4060.8	2494.8	13395.6
Meghalaya	110.7	75.6	97	0	3	286.3
Mizoram	300	310	426	406.6	400	1842.6
Nagaland	478	480	481	760	795	2994
Odisha	8985.3	7782.8	8077.4	8962.4	9471.6	43279.5
Punjab	2347.5	2375	2779.8	2977.4	2642.35	13122.05
Rajasthan	8718.4	10988.6	10653	10329.3	12264.1	52953.4
Sikkim	20.2	23.2	6.5	16.25	16.25	82.4
Tamil Nadu	4156.6	5732	5572.8	13008.7	19426.88	47896.98
Telangana	381.9	1876	4179	6500	5500	18436.9
Tripura	2987.6	3137	4350	0	0	10474.6
Uttarakhand	629	746.5	678.8	655.6	289.6	2999.5
Uttar Pradesh	18299.3	27535.6	27128.7	29342.1	30287.8	132593.5
West Bengal	175210	115700	124550	124550	124550	664560
A & N Islands	107.4	12.8	14.7	0	0	134.9
Chandigarh	8	8	8	0.8	0.8	25.6
Daman and Diu and Dadra & Nagar Haveli	0	0	0	0	0	0
Delhi	0	0	20	2	15	37
Jammu & Kashmir	620	770	712	205.6	209.7	2517.3
Ladakh	0	0	0	0	0	0
Lakshadweep	0	0	0	0	0	0
Puducherry	0	0	0	0	0	0
INDIA	354350.7	357439.2	444207.7	481974.4	521706.1	2159678.1

Source: Director of Fisheries, States Government / UTs Administration

CHAPTER 2

DISPOSITION OF FISH



Fig 4. Total of Disposition of Fish Catch, 2019-20 (In Lakh Tonnes): Top ten

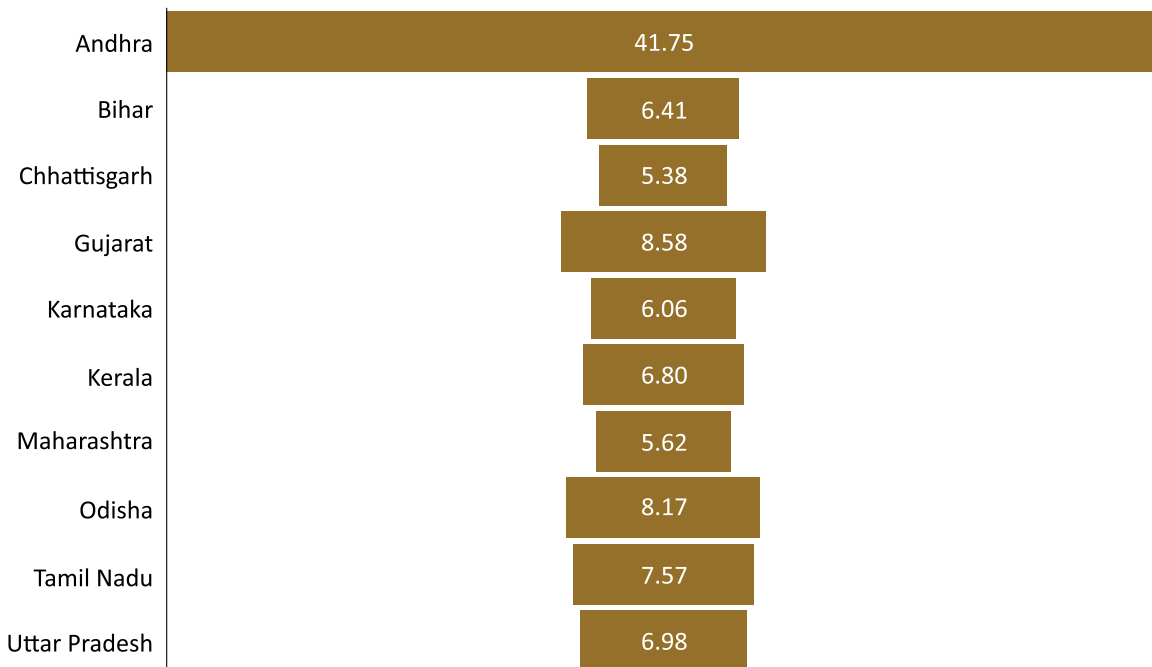


Fig 5. Year-wise Disposition of Fish Catch (In Lakh Tonnes)

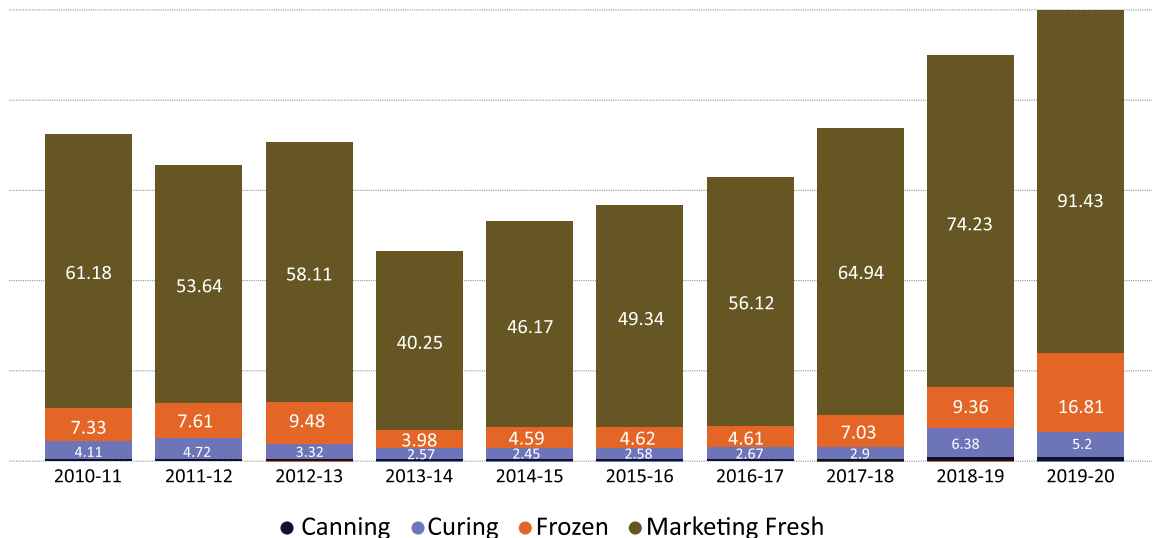


Table 2.1: Year-wise Disposition of Fish Catch (In Lakh Tonnes)

Year	Marketing Fresh	Fro-zen	Curing	Can-ning	Reduc-tion	Miscella-neous	Offal for Reduction	Unspeci-fied	Others	Total
1991-92	27.06	2.65	6.13	0.3	3.33	0.47	0.47	0	0	40.41
1992-93	27.98	2.84	5.9	0.25	3.55	0.7	0.47	0	0	41.69
1993-94	31.05	3.09	6.44	0.09	3.72	0.16	0.87	0	0	45.42
1994-95	32.5	3.1	6.51	0.12	3.97	0.39	0.74	0	0	47.33
1995-96	34.27	3.2	6.32	0.13	3.58	0.38	0.4	0	0	48.28
1996-97	37.84	3.92	6.39	0.11	3.13	0.22	0.39	0	0	52
1997-98	38.74	4.21	6.02	0.14	3.45	0.18	1.02	0	0	53.76
1998-99	38.66	3.9	5.68	0.12	3.03	0.19	0.83	0	0	52.41
1999-00	42.06	2.84	4.21	0.17	2.96	0.53	0.09	0.7	0.29	53.85
2000-01	42.87	2.76	3.39	0.5	3.17	0.01	0.34	0.69	2.36	56.09
2001-02	47.77	2.64	3.46	0.53	3.08	0.16	0.43	0.72	0.47	59.26
2002-03	47.89	3.32	3.88	0.23	2.65	0.42	0.01	0.16	0.16	58.72
2003-02	48.28	3.07	3.63	0.36	2.77	0.4	0.01	0.12	0.16	58.8
2004-05	52.83	3.85	3.3	0.45	2.69	0.01	0.4	0.16	0.17	63.86
2005-04	54.68	3.9	3.3	0.24	2.84	0.34	0.01	0.17	0.26	65.74
2006-07	55.59	3.96	3.44	0.24	2.95	0.36	0.01	0.14	0.15	66.84
2007-08	60.37	4.24	3.67	0.25	3.34	0.14	0.01	0.16	0.15	72.33
2008-09	58.04	3.78	3.35	0.31	3.13	0.45	0.01	0.17	0.15	69.39
2009-10	59.55	4.35	3.47	0.33	2.91	0.61	0	0.19	0.47	71.88
2010-11	61.18	7.33	4.11	0.47	2.83	0.74	0.01	1.37	1.83	79.87
2011-12	53.64	7.61	4.72	0.39	2.98	0	73	0.63	1.71	144.68
2012-13	58.11	9.48	3.32	0.42	3.01	0	1.51	0.71	1.68	78.24
2013-14	40.25	3.98	2.52	0.44	3.24	0	0.76	0.2	2	53.39
2014-15	46.17	4.59	2.45	0.43	3.33	0	0.9	0.21	2.18	60.26
2015-16	49.34	4.62	2.58	0.52	3.21	0	1.06	0.22	0.2	61.75
2016-17	56.12	4.61	2.67	0.5	3.25	0	1.2	0.29	2.4	71.04
2017-18	64.94	7.03	2.9	0.36	3.33	0	1.89	0.38	2.39	83.22
2018-19	74.23	9.36	6.38	1.02	3.28	2.28	0	0.05	1.43	98.03
2019-20	91.43	16.81	5.2	0.36	3.38	3.04	0.08	0.05	1.44	121.79

Source: Department of Fisheries, States Government / UTs Administration

Table 2.2: Disposition of Fish Catch, 2019-20 (Quantity in Lakh Tonnes)

States/UT's	Marketing Fresh	Frozen	Cur-ing	Can-nig	Reduc-tion	Miscella-neous	Offal for Reduction	Unspeci-fied	Oth-ers	Total
Andhra Pradesh	28.22	10.34	0.88	0.13	0.22	1.86	0.08	0	0	41.73
Arunachal Pradesh	0.05	0	0	0	0	0	0	0	0	0.05
Assam	3.44	0	0	0	0	0	0	0	0.01	3.45
Bihar	5.17	0	0	0	0	0	0	0	1.24	6.41
Chhattisgarh	5.38	0	0	0	0	0	0	0	0	5.38
Goa	0.77	0	0.04	0.03	0	0.02	0	0	0	0.86
Gujarat	2.67	1.72	1.71	0	2.48	0	0	0	0	8.58
Haryana	1.73	0	0	0	0	0	0	0	0	1.73
Himachal Pradesh	0.14	0	0	0	0	0	0	0	0	0.14
Jharkhand	2.23	0	0	0	0	0	0	0	0	2.23
Karnataka	4.72	0.69	0.41	0.15	0.03	0.03	0	0	0.03	6.06
Kerala	4.98	1.27	0	0	0	0.55	0	0	0	6.8
Madhya Pradesh	2.01	0	0	0	0	0	0	0	0	2.01
Maharashtra	4.91	0	0.62	0.05	0.04	0	0	0	0	5.62
Manipur	0.21	0.01	0.04	0	0	0.02	0	0.01	0.01	0.3
Meghalaya	0.14	0	0	0	0	0	0	0	0	0.14
Mizoram	0.07	0	0	0	0	0	0	0	0	0.07
Nagaland	0.08	0	0.01	0	0	0	0	0	0	0.09
Odisha	6.78	0.87	0.52	0	0	0	0	0	0	8.17
Punjab	1.06	0.45	0	0	0	0	0	0	0	1.51
Rajasthan	0.55	0	0	0	0	0	0	0	0.03	0.58
Sikkim	0.01	0	0	0	0	0	0	0	0	0.01
Tamil Nadu	4.88	1.42	0.92	0	0.08	0.23	0	0.04	0	7.57
Telangana	2.65	0	0	0	0	0.32	0	0	0.11	3.08
Tripura	0.77	0	0	0	0	0	0	0	0	0.77
Uttar Pradesh	6.98	0	0	0	0	0	0	0	0	6.98
Uttarakhand	0.05	0	0	0	0	0	0	0	0	0.05
West Bengal	16.19	0.37	0	0	0.53	0.06	0	0	0	17.15
A and N Islands	0.33	0.01	0.06	0	0	0	0	0	0	0.4
Chandigarh	0	0	0	0	0	0	0	0	0	0
Daman and Diu, Dardar & Nagar Haveli	0.29	0.03	0	0	0	0	0	0	0	0.32
Delhi	0.01	0	0	0	0	0	0	0	0	0.01
Jammu & Kashmir	0.21	0	0	0	0	0	0	0	0	0.21
Ladakh	0	0	0	0	0	0	0	0	0	0
Lakshadweep	0.16	0.01	0.02	0	0	0	0	0	0	0.19
Puducherry	0.29	0.05	0.01	0	0	0	0	0	0.01	0.36
Total	91.43	16.81	5.2	0.36	3.38	3.04	0.08	0.05	1.44	121.79

Source: Department of Fisheries, States Government / UTs Administration
 NA: In Punjab all catch is market Fresh

CHAPTER 3

CONSUMPTION OF FISH

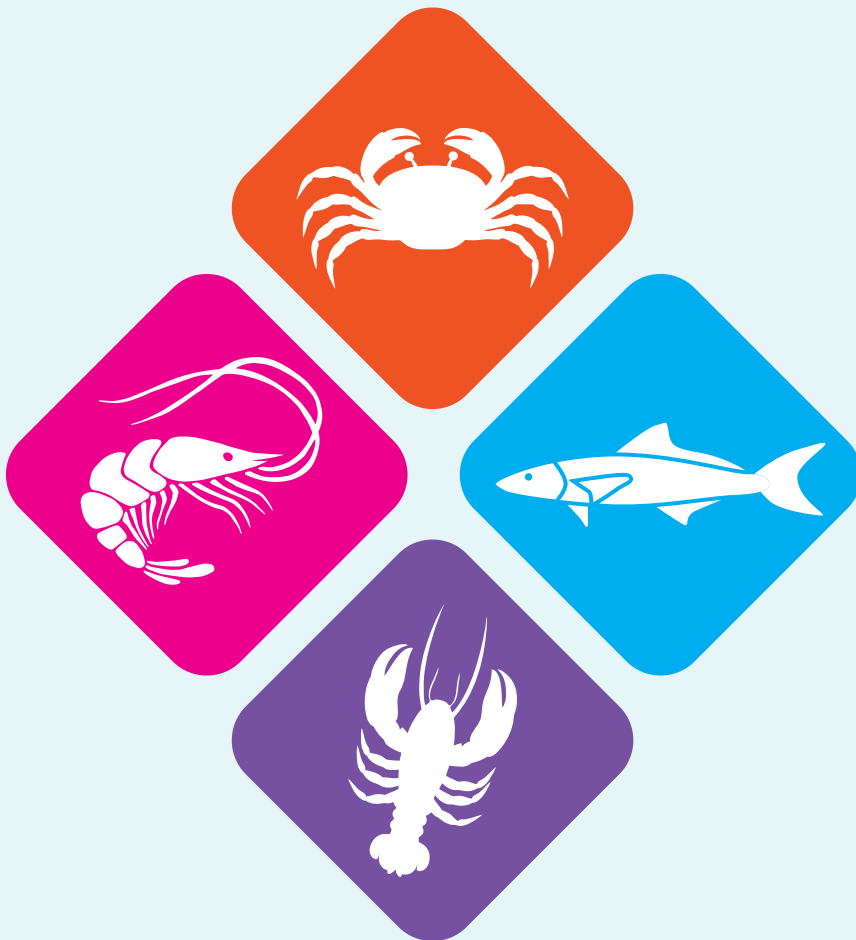
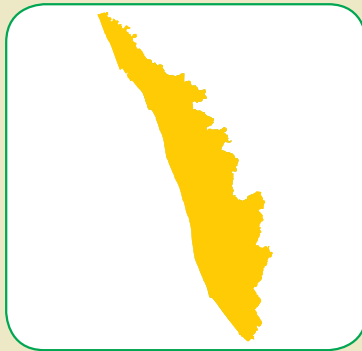


Fig 6. Top Fish Consumption States : 2019-20



Tripura
29.29 Kg
Per Capita/Per Year



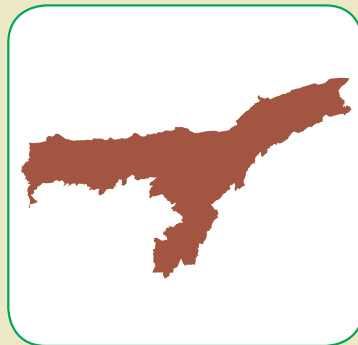
Kerala
19.41 Kg
Per Capita/Per Year



Manipur
14.1 Kg
Per Capita/Per Year



Odisha
13.79 Kg
Per Capita/Per Year



Assam
11.72 Kg
Per Capita/Per Year

Table 3.1 State-wise Fish Consumption Data (Per Capita/Year/Kg): 2019-20

S. N.	States/UT's	Yearly Fish Consumption (Per Capita/Kg.)2019-20
1	Andhra Pradesh	8.07
2	Arunachal Pradesh	3.52
3	Assam	11.72
4	Bihar	8.82
5	Chhattisgarh	4.66
6	Goa	NA
7	Gujarat	9.55
8	Haryana*	NA
9	Himachal Pradesh	2.16
10	Jharkhand	10.32
11	Karnataka	7.56
12	Kerala	19.41
13	Madhya Pradesh	2.76
14	Maharashtra	3.02
15	Manipur	14.1
16	Meghalaya	10.98
17	Mizoram	5.54
18	Nagaland	6.68
19	Odisha	13.79
20	Punjab	0.4
21	Rajasthan	0.01
22	Sikkim	1.16
23	Tamil Nadu	9.6
24	Telangana	8.87
25	Tripura	29.29
26	Uttarakhand	0.49
27	Uttar Pradesh	10.89
28	West Bengal	NA
29	A and N Islands	59.47
30	Chandigarh	NA
31	Daman and Diu, D & Nagar Haveli	NA
32	Delhi	NA
33	Jammu & Kashmir	3
34	Ladakh	NA
35	Lakshadweep	NA
36	Puducherry	30

Source: Department of Fisheries, States Government / UTs Administration

Table 3.2: Monthly Per Capita Consumption of Fish & Prawn (Quantity) by State/Uts (2011-12)

S.N.	States/Uts	Consumption	Per Capita Consumption (Both Quantity & Value)		Number of households reported Consumption per 1000 households	
			Rural	Urban	Rural	Urban
1	Andhra Pradesh	Quantity(KG)	0.153	0.108	174	112
		Value (Rs.)	12.29	8.8		
2	Arunachal Pradesh	Quantity(KG)	0.58	0.647	525	578
		Value (Rs.)	77.44	86.91		
3	Assam	Quantity(KG)	0.665	0.767	804	750
		Value (Rs.)	75.28	103.05		
4	Bihar	Quantity(KG)	0.239	0.187	299	226
		Value (Rs.)	22.08	18.68		
5	Chhattisgarh	Quantity(KG)	0.157	0.103	199	121
		Value (Rs.)	12.97	10.05		
6	Goa	Quantity(KG)	1.537	1.7	838	809
		Value (Rs.)	185.94	234.68		
7	Gujarat	Quantity(KG)	0.052	0.052	54	84
		Value (Rs.)	4.15	4.88		
8	Haryana	Quantity(KG)	0.002	0.017	3	17
		Value (Rs.)	0.2	2.47		
9	Himachal Pradesh	Quantity(KG)	0.005	0.031	6	17
		Value (Rs.)	0.73	3.31		
10	Jammu & Kashmir	Quantity(KG)	0.012	0.027	9	23
		Value (Rs.)	1.74	3.84		
11	Jharkhand	Quantity(KG)	0.142	0.149	195	147
		Value (Rs.)	13.28	15.88		
12	Karnataka	Quantity(KG)	0.163	0.117	115	81
		Value (Rs.)	10	10.12		
13	Kerala	Quantity(KG)	2.262	2.103	868	794
		Value (Rs.)	138.23	147.85		
14	Madhya Pradesh	Quantity(KG)	0.048	0.043	71	58
		Value (Rs.)	4.09	3.98		
15	Maharashtra	Quantity(KG)	0.09	0.175	125	188
		Value (Rs.)	8.68	23.63		
16	Manipur	Quantity(KG)	0.462	0.57	663	813
		Value (Rs.)	67.52	85.59		
17	Meghalaya	Quantity(KG)	0.403	0.517	690	643
		Value (Rs.)	56.75	73.45		
18	Mizoram	Quantity(KG)	0.176	0.203	193	236
		Value (Rs.)	24.72	29.27		
19	Nagaland	Quantity(KG)	0.285	0.482	229	424
		Value (Rs.)	31.78	53.54		

Table 3.2: Monthly Per Capita Consumption of Fish & Prawn (Quantity) by State/Uts (2011-12)

S.N.	States/Uts	Consumption	Per Capita Consumption (Both Quantity & Value)		Number of households reported Consumption per 1000 households	
			Rural	Urban	Rural	Urban
20	Odisha	Quantity(KG)	0.438	0.474	576	492
		Value (Rs.)	36.28	47.06		
21	Punjab	Quantity(KG)	0.001	0.004	3	5
		Value (Rs.)	0.18	0.55		
22	Rajasthan	Quantity(KG)	0.011	0.004	10	4
		Value (Rs.)	1.03	0.58		
23	Sikkim	Quantity(KG)	0.01	0.061	12	76
		Value (Rs.)	1.2	7.29		
24	Tamil Nadu	Quantity(KG)	0.257	0.292	218	265
		Value (Rs.)	23.41	29.05		
25	Telengana	Quantity(KG)	-	-	-	-
		Value (Rs.)	-	-		
26	Tripura	Quantity(KG)	1.069	1.478	963	933
		Value (Rs.)	132.17	202.09		
27	Uttarakhand	Quantity(KG)	0.053	0.076	36	62
		Value (Rs.)	4.81	7.34		
28	Uttar Pradesh	Quantity(KG)	0.072	0.035	103	49
		Value (Rs.)	5.87	3.28		
29	West Bengal	Quantity(KG)	0.805	1.032	831	792
		Value (Rs.)	77.67	130.46		
30	A and N Islands	Quantity(KG)	1.573	1.255	914	781
		Value (Rs.)	122.08	94.31		
31	Chandigarh	Quantity(KG)	0	0.005	0	6
		Value (Rs.)	0	0.6		
32	D&Nagar Haveli	Quantity(KG)	0.178	0.04	244	72
		Value (Rs.)	15.06	3.78		
33	Daman and Diu	Quantity(KG)	0.625	0.997	388	651
		Value (Rs.)	46.56	6.29		
34	Delhi	Quantity(KG)	0.026	0.037	58	51
		Value (Rs.)	2.36	4013		
35	Lakshadweep	Quantity(KG)	2.321	3.801	849	889
		Value (Rs.)	294.63	400.92		
36	Puducherry	Quantity(KG)	0.547	0.678	735	670
		Value (Rs.)	62.64	76.81		
India Value (Rs.)		Quantity(KG)	0.266	0.252	265	210
		22.77	26.73			

Source: National Sample Survey Organisation (NSSO), 2011-12

CHAPTER 4

FISHERIES ECONOMY



Table 4.1 Gross Value Added (Rs. in crore) by Economic Activity during the year 2011-12 to 2018-19

Current Basic Prices						
Years	Crops	Forestry and Logging	Fisheries	Livestock	Agriculture, forestry and fishing	National GVA
2011-12	9,82,151	1,24,436	68,027	3,27,334	15,01,948	81,06,946
2012-13	10,88,814	1,37,558	79,911	3,68,823	16,75,106	92,02,692
2013-14	12,48,776	1,56,674	98,190	4,22,733	19,26,373	1,03,63,153
2014-15	12,92,874	1,73,760	1,16,567	5,10,411	20,93,612	115,04,279
2015-16	13,27,992	1,84,411	1,32,720	5,82,410	22,27,533	1,25,74,499
2016-17	14,86,044	2,05,364	1,54,643	6,72,611	25,18,662	1,39,65,200
2017-18	16,06,057	2,19,109	1,86,561	7,85,180	27,96,907	1,55,13,122
2018-19	16,14,938	2,23,109	2,12,915	8,71,884	29,22,846	1,71,39,962
Constant Prices (2011-12)						
Years	Crops	Forestry and Logging	Fisheries	Livestock	Agriculture, forestry and fishing	National GVA
2011-12	9,82,151	1,24,436	68,027	3,27,334	15,01,948	81,06,946
2012-13	9,83,809	1,24,743	71,362	3,44,375	15,24,289	85,46,275
2013-14	10,37,060	1,32,093	76,487	3,63,558	16,09,198	90,63,649
2014-15	9,98,425	1,34,609	82,232	3,90,449	16,05,715	97,12,133
2015-16	9,69,344	1,36,960	90,205	4,19,637	16,16,146	1,04,91,870
2016-17	10,20,258	1,44,547	99,627	4,61,572	17,26,004	1,13,28,285
2017-18	10,64,796	1,53,451	1,14,248	4,95,834	18,28,329	1,20,74,413
2018-19	10,54,179	1,54,115	1,28,011	5,36,035	18,72,340	1,28,03,128

Source: Central Statistics Office, Ministry of Statistics & Programme Implementation, Government of India

Contribution in Agriculture economy by the Agriculture and allied sector

Fig 7 : Trend of Percentage Contribution of GVA due to Crops sector over the total GVA due to Agriculture sector (Current Price): All India



Fig 8 : Trend of Percentage Contribution of GVA due to Forestry and Logging sector over the total GVA due to Agriculture sector (Current Price): All India



Fig 9 : Trend of Percentage Contribution of GVA due to Livestock sector over the total GVA due to Agriculture sector (Current Price): All India

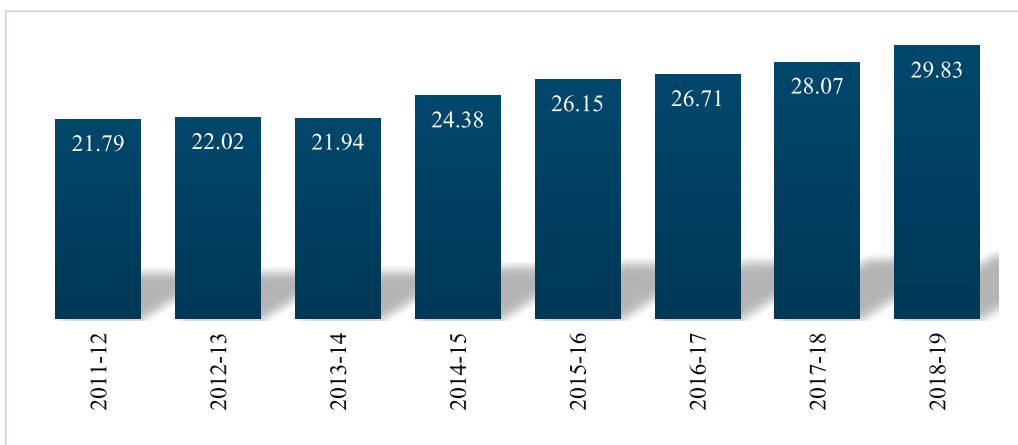


Fig 10 : Trend of Percentage Contribution of GVA due to Fisheries sector over the total GVA due to Agriculture sector (Current Price): All India

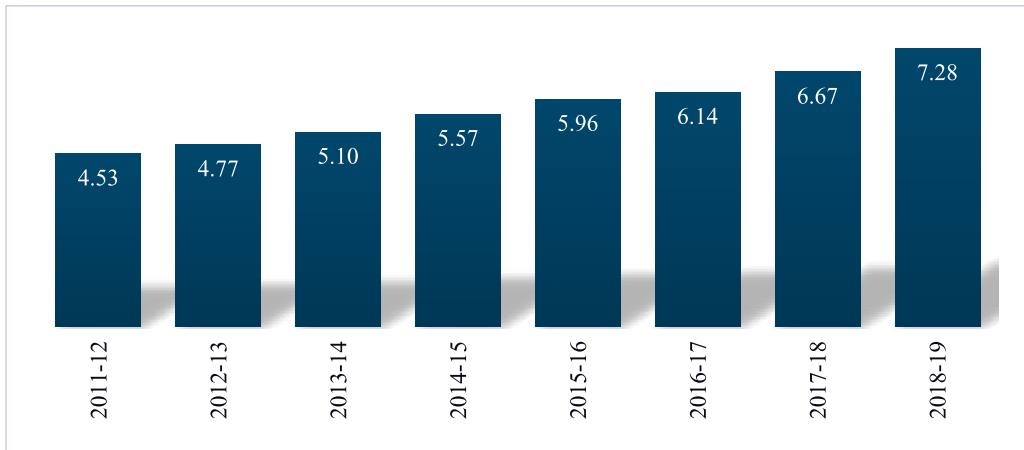


Fig 11 : Trend of Percentage Contribution of GVA due to Crops sector over the total GVA due to Agriculture sector (Constant price:2011-12): All India



Fig 12 : Trend of Percentage Contribution of GVA due to Forestry and Logging sector over the total GVA due to Agriculture sector (Constant price:2011-12): All India

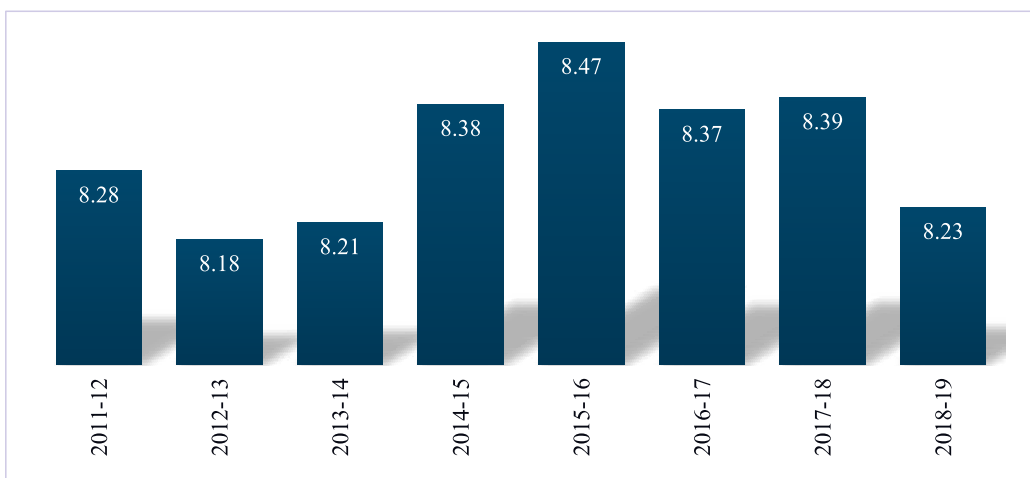


Fig 13 : Trend of Percentage Contribution of GVA due to Livestock sector over the total GVA due to Agriculture sector (Constant price:2011-12): All India

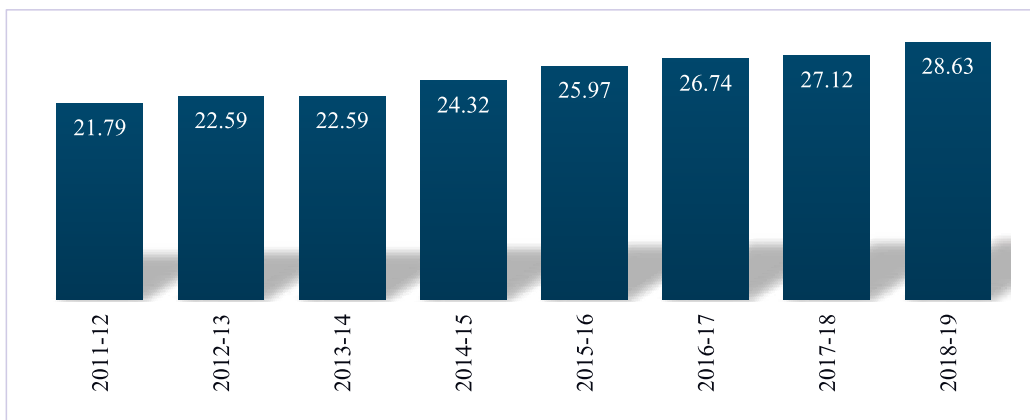
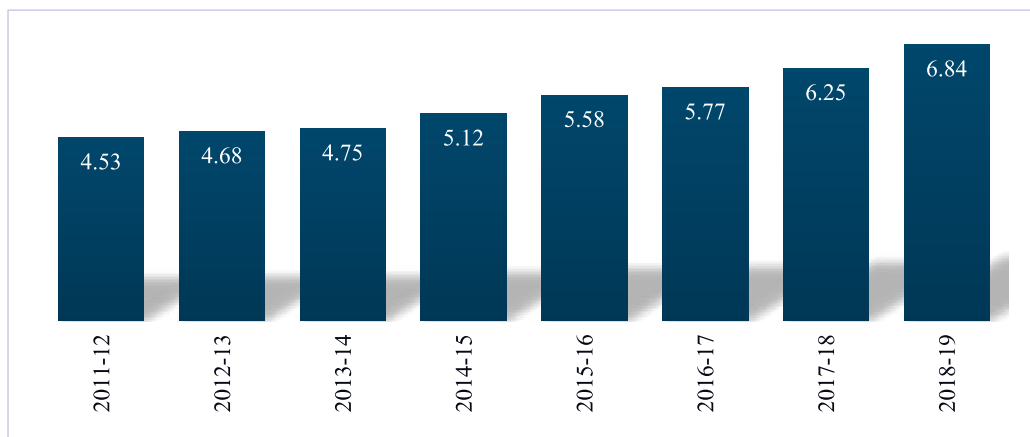


Fig 14 : Trend of Percentage Contribution of GVA due to Fisheries sector over the total GVA due to Agriculture sector (Constant price:2011-12): All India



Growth of economy of Agriculture and Allied sector

Fig 15 : Trend of Percentage Growth of GVA of Agriculture (Current Price): All India

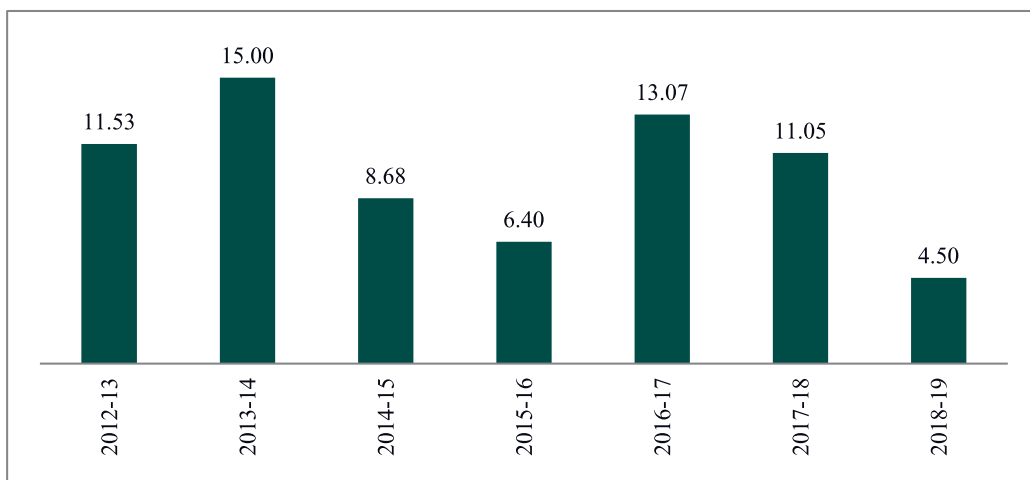


Fig 16 : Trend of Percentage Growth of GVA of Crops (Current Price): All India

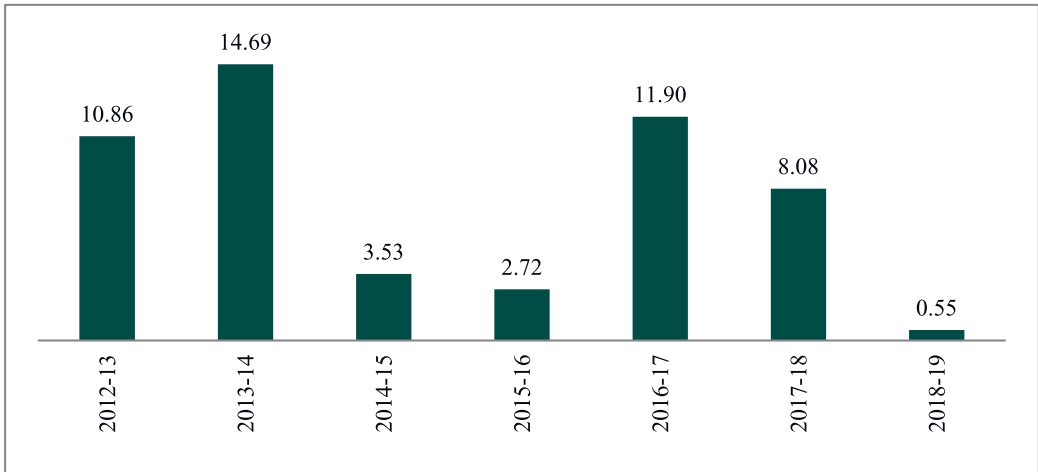


Fig 17 : Trend of Percentage Growth of GVA of Livestock (Current Price): All India

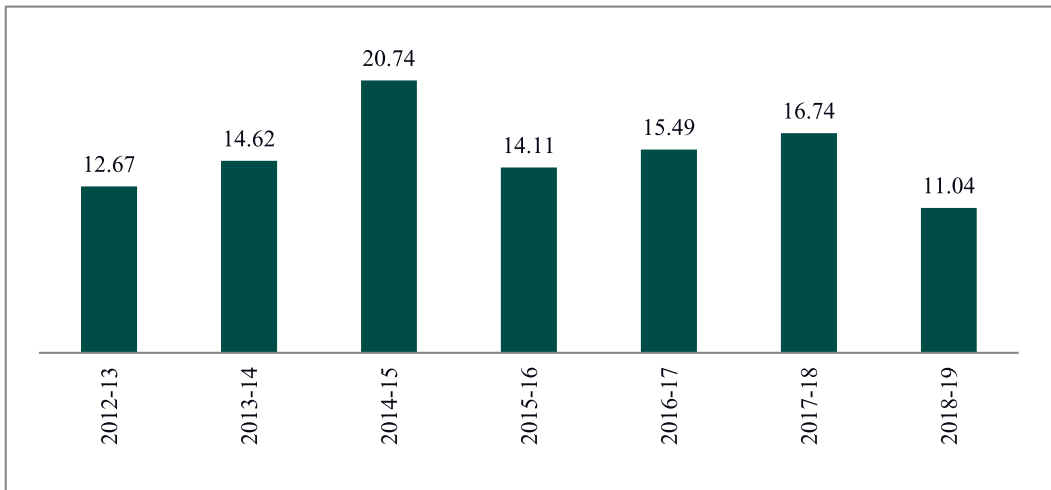


Fig 18 : Trend of Percentage Growth of GVA of Forestry and Logging (Current Price): All India

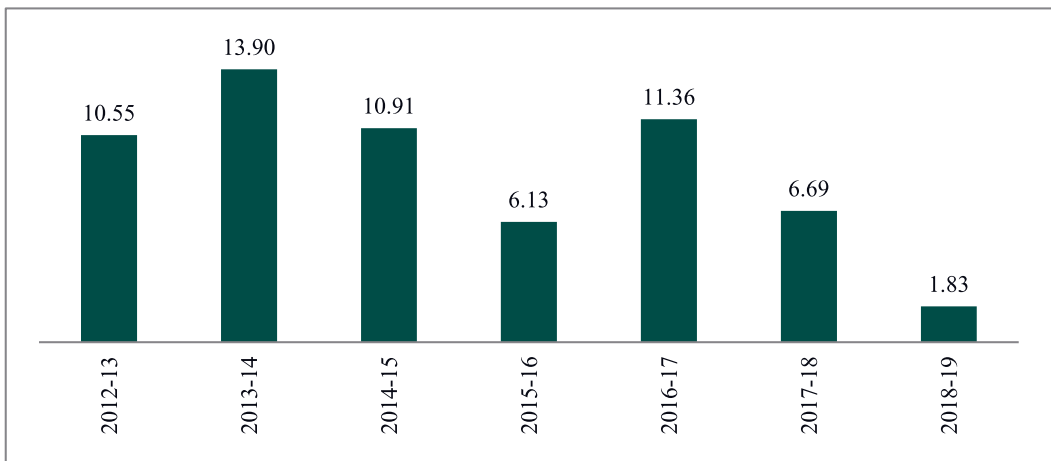


Fig 19 : Trend of Percentage Growth of GVA of Fisheries (Current Price): All India

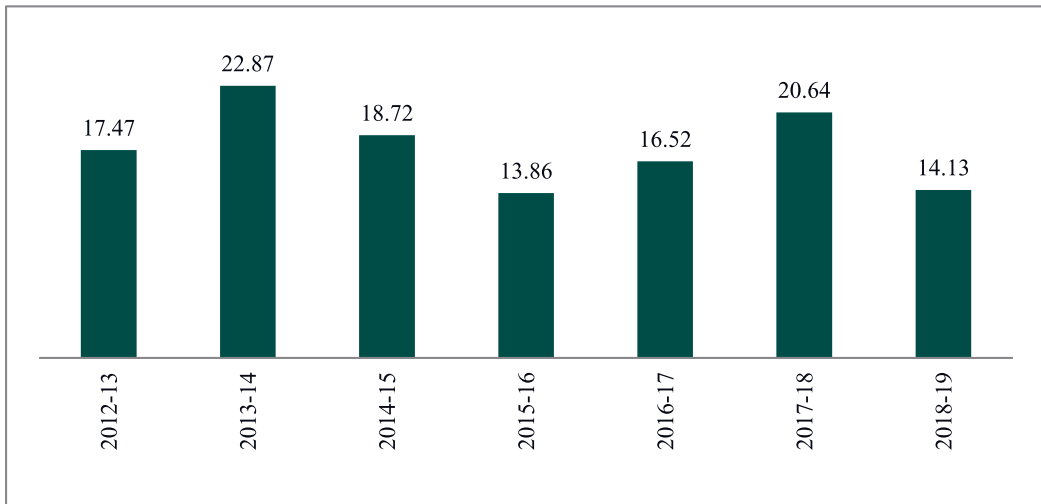


Fig 20 : Trend of Percentage Growth of GVA of Agriculture (Constant Price: 2011-12): All India

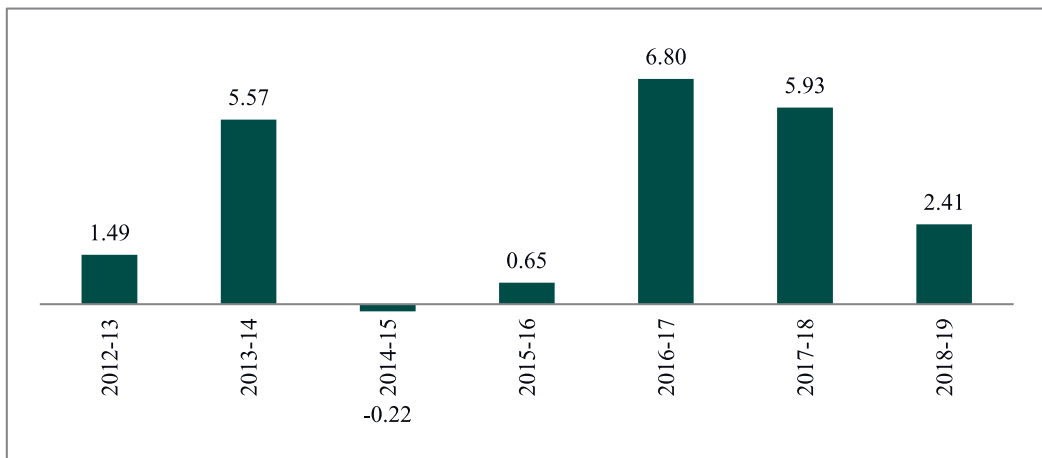


Fig 21 : Trend of Percentage Growth of GVA of Crops (Constant Price: 2011-12): All India

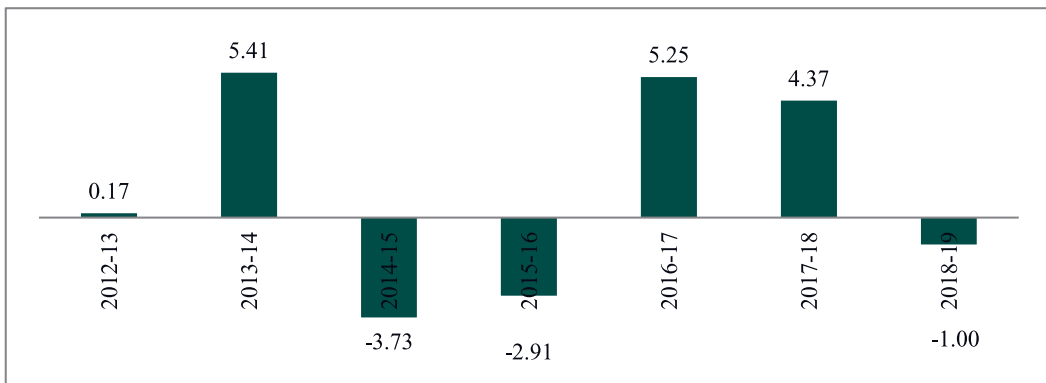


Fig 22 : Trend of Percentage Growth of GVA of Livestock (Constant Price: 2011-12): All India

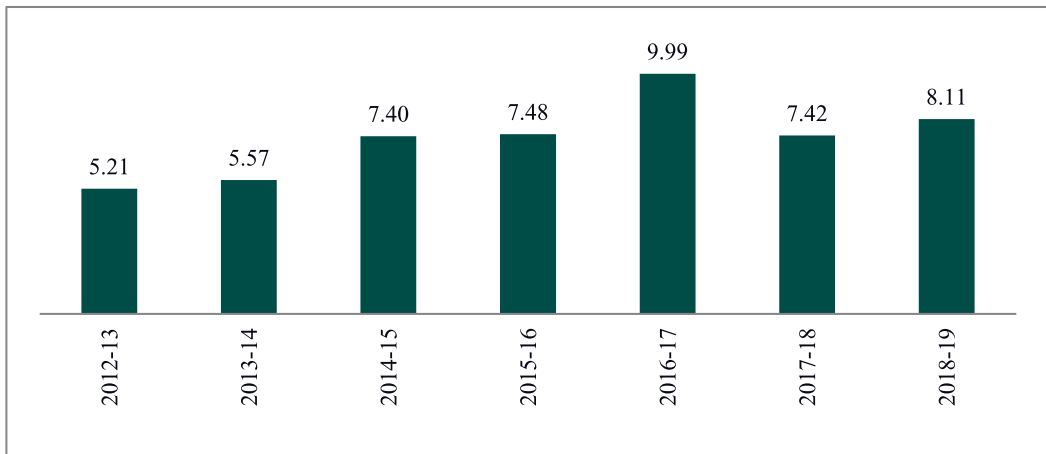


Fig 23 : Trend of Percentage Growth of GVA of Forestry and Logging (Constant Price: 2011-12): All India

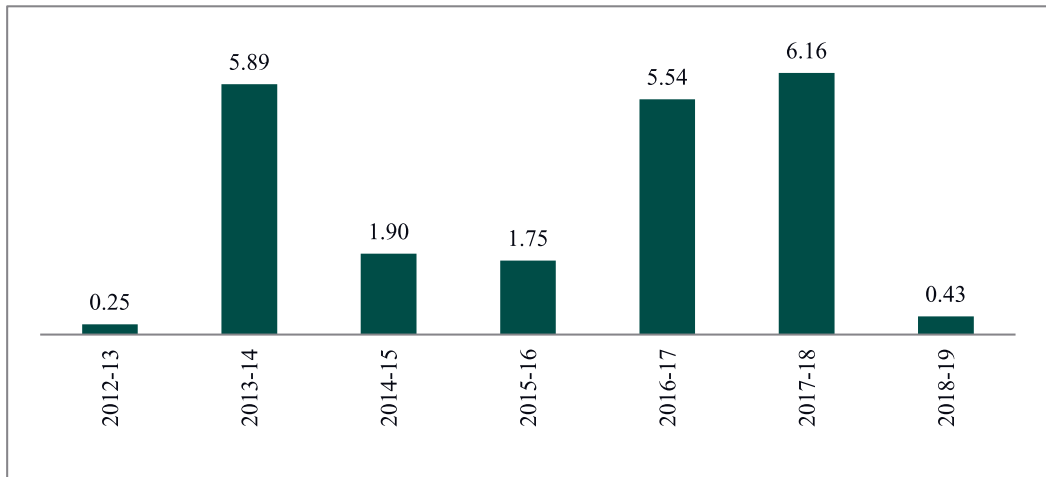


Fig 24 : Trend of Percentage Growth of GVA of Fisheries (Constant Price: 2011-12): All India



CHAPTER 5 FISHERIES EXPORT



Fig 25 :Trend of Export of Fish and Fish Products in US Dollar (\$: Million)

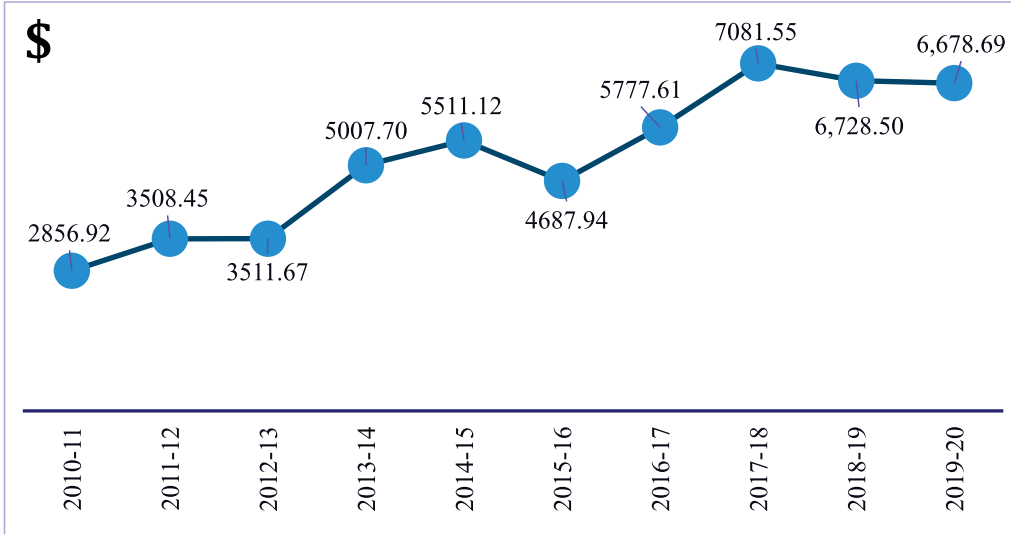


Fig 26: Trend of Export of Fish and Fish Products in Quantity (Lakh Tonnes)

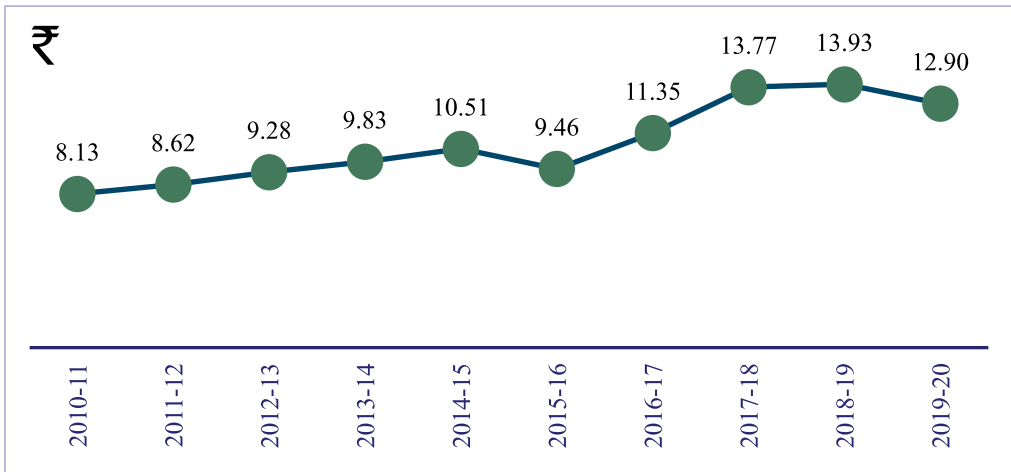


Fig 27: Trend of Export of Fish and Fish Products in Value (Rs. Crore)

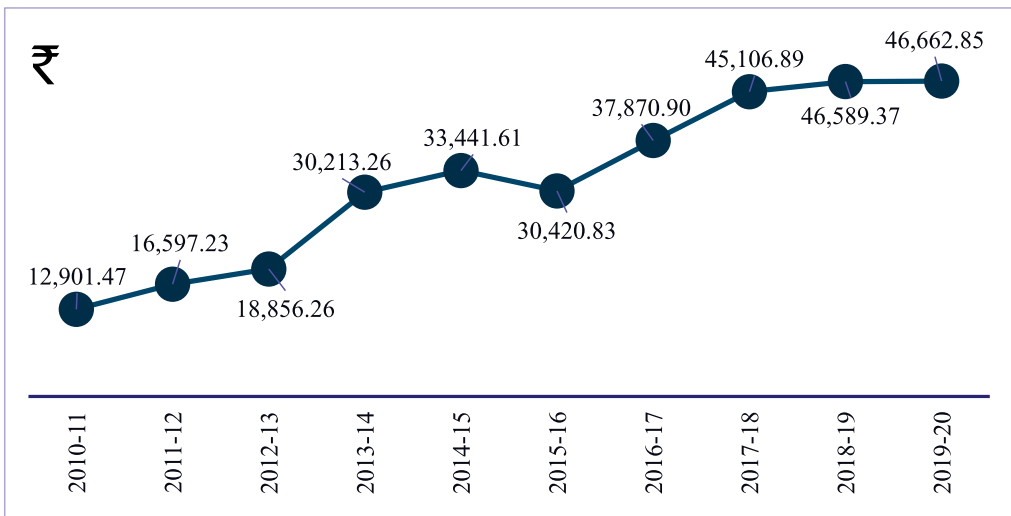


Fig 28: Market-wise export in value and quantity

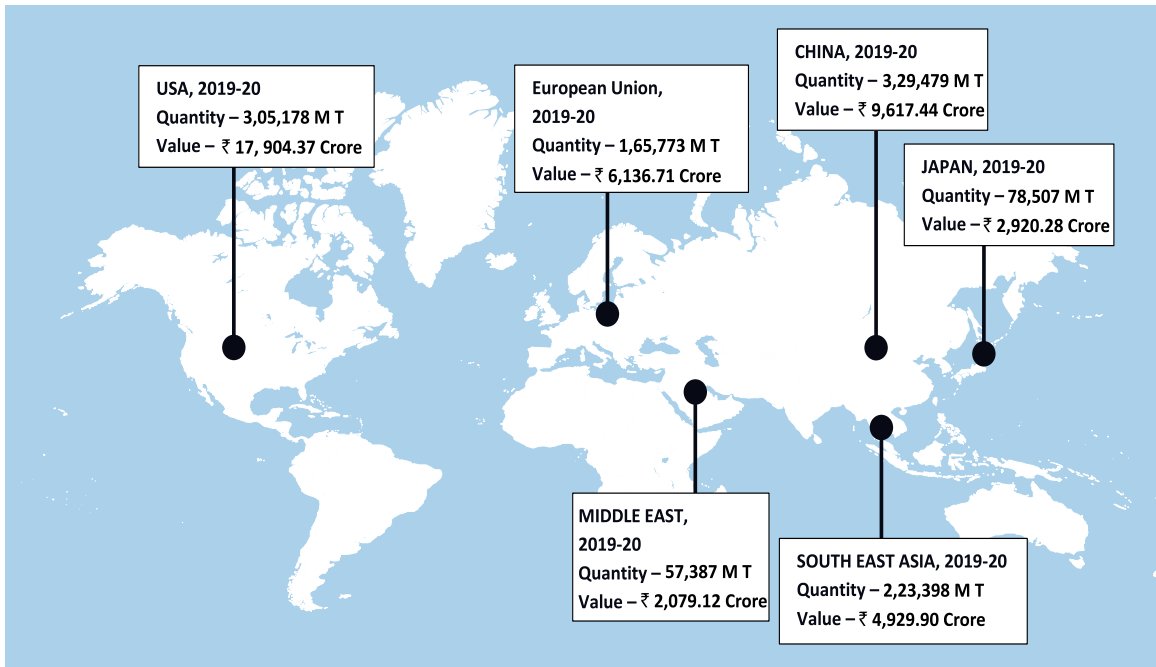


Table 5.1: Trend of Export of Fish and Fish Products:2019-20

Year	Quantity (Tonnes)	Value (₹ Crore)	US Dollar (\$: Million)	Unit value (Rs. /Tonnes)	Unit value Index	Annual growth rate (%)	
						Quantity	Value
2010-11	8,13,090.85	1,29,01.47	2,856.92	1,58,671.89	6,367.92	19.85	28.39
2011-12	8,62,021.41	1,65,97.23	3,508.45	1,92,538.46	7,727.08	6.02	28.65
2012-13	9,28,214.67	18,856.26	3,511.67	2,03,145.42	8,152.76	7.68	13.61
2013-14	9,83,755.56	30,213.26	5,007.70	3,07,121.60	12,325.60	5.98	60.23
2014-15	10,51,243.49	33,441.61	5,511.12	3,18,114.75	12,766.79	6.86	10.69
2015-16	9,45,891.90	30,420.83	4,687.94	3,21,609.99	12,907.06	-10.02	-9.03
2016-17	11,34,948.09	37,870.90	5,777.61	3,33,679.62	13,391.45	19.99	24.49
2017-18	13,77,243.70	45,106.89	7,081.55	3,27,515.69	13,144.07	21.35	19.11
2018-19	13,92,558.89	46,589.37	6,728.50	3,34,559.46	13,426.76	1.11	3.29
2019-20	12,89,650.90	46,662.85	6,678.69	3,61,825.42	14,521.01	-7.39	0.16

Source: Marine Products Export Development Authority, Kochi

Fig 29: Percentage share of Item-wise Export of Fisheries Products (Value)

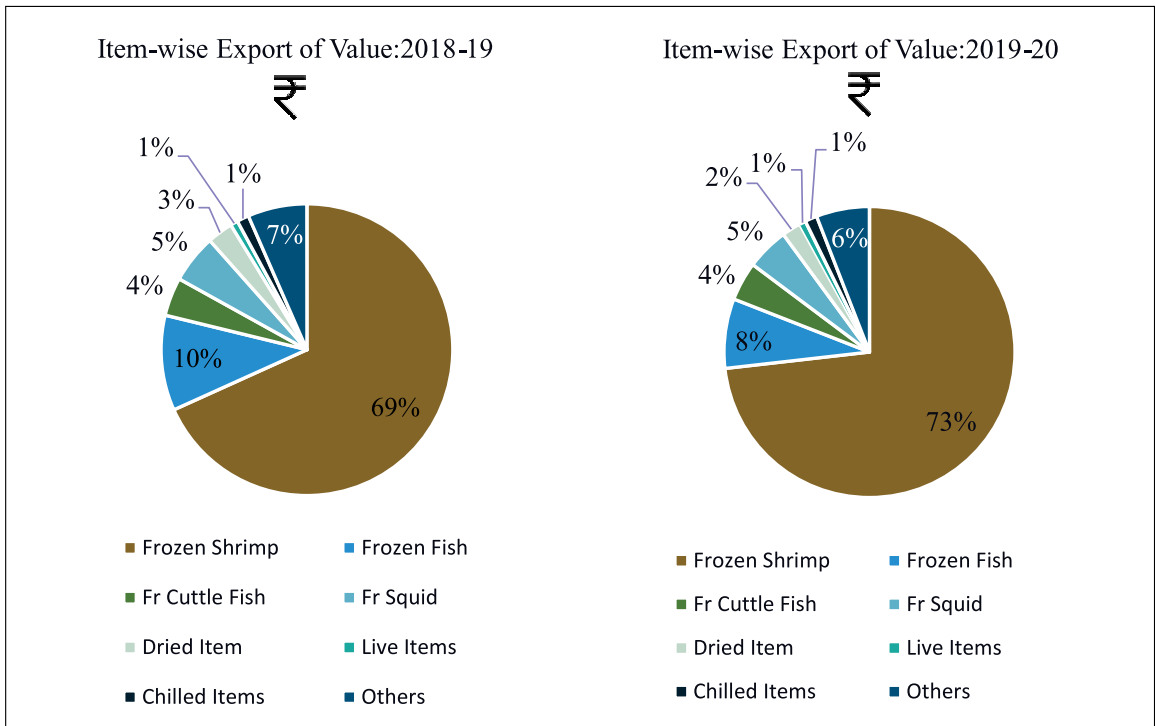


Fig 30: Percentage share of Item-wise Export of Fisheries Products (Quantity)

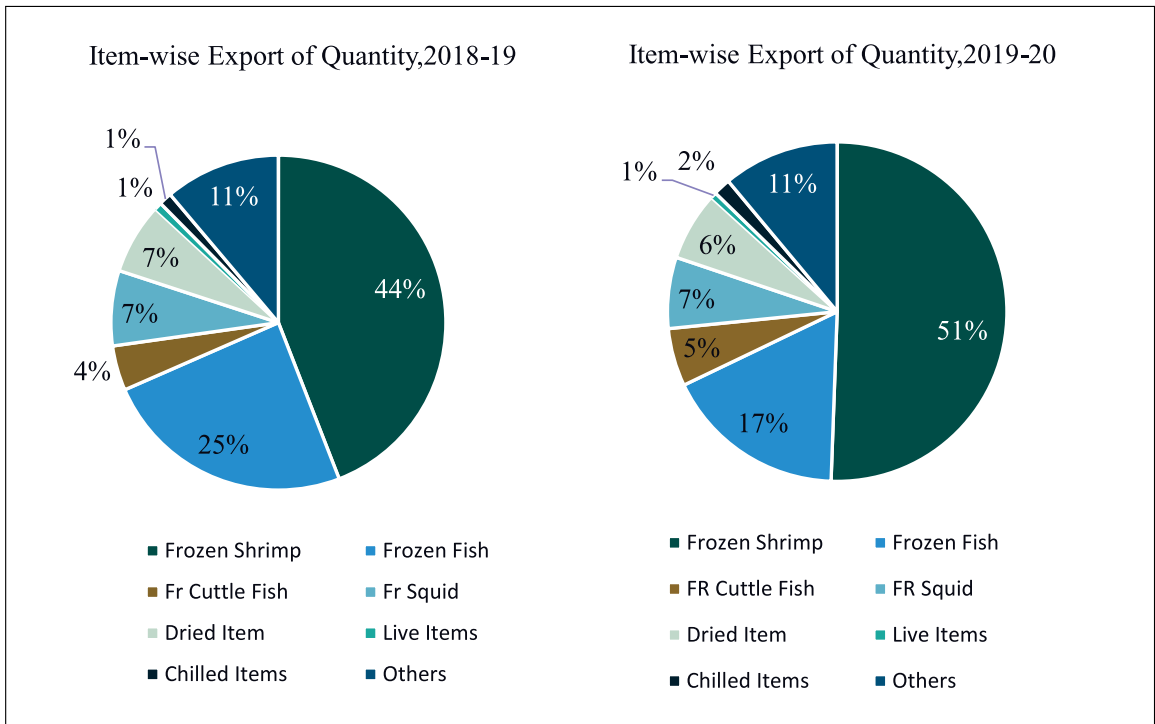


Table 5.2: Item-wise Export of Fisheries Products:2020

Item		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Frozen Shrimp	Q:	1,51,465	1,89,125	2,28,620	3,01,435	3,57,505	3,73,866	4,34,486	5,65,980	6,14,145	6,52,253
	V:	5,718.13	8,175.26	9,706.36	19,368.30	22,468.12	20,045.50	24,711.32	30,868.17	31,800.51	34,152.03
	₹:	1,261.81	1,741.20	1,803.26	3,210.94	3,709.76	3,096.68	3,726.38	4,848.19	4,610.59	4,889.12
Frozen Fish	Q:	3,12,358	3,47,118	3,43,876	3,24,359	3,09,434	2,28,749	2,96,762	3,53,192	3,38,933	2,23,318
	V:	2,623.89	3,284.15	3,296.86	4,294.81	3,778.50	3,462.25	4,460.90	4,674.03	4,916.82	3,610.01
	₹:	583.48	683.50	617.59	708.63	619.66	529.85	672.47	733.17	699.09	513.6
Fr Cuttle fish	Q:	59,159	54,671	63,296	68,577	82,353	65,596	63,320	69,183	60,210	70,906
	V:	1,104.57	1,346.72	1,354.28	1,386.98	1,833.21	1,636.11	1,944.50	2,356.46	1,975.97	2,009.79
	₹:	244.62	282.72	251.54	228.13	300.69	250.31	292.73	369.88	282.29	286.4
Fr Squid	Q:	87,579	77,373	75,387	87,437	69,569	81,769	99,348	1,00,845	1,01,101	87,631
	V:	1,010.57	1,228.19	1,378.08	1,731.97	1,275.25	1,615.21	2,575.29	2,451.87	2,506.99	2,196.59
	₹:	223.67	262.72	256.90	284.60	209.84	247.53	388.64	385.01	359.71	314.23
Dried Item	Q:	79,059	53,721	72,953	67,901	70,544	43,320	61,071	88,997	95,296	84,417
	V:	954.94	562.65	819.90	998.00	1010.16	725.58	871.74	1042.37	1323.45	981.5
	₹:	212.22	117.66	152.81	167.89	165.52	111.57	199.77	163.53	189.58	140.81
Live Items	Q:	5,208	4,199	4,373	5,080	5,488	5,493	6,703	7,034	10,179	7,287
	V:	142.15	154.61	197.89	281.85	301.51	308.81	403.75	286.11	388.88	324.26
	₹:	31.46	32.46	36.82	46.70	49.62	47.77	61.05	45.41	55.89	46.43
Chilled Items	Q:	21,118	21,278	26,868	19,755	31,404	33,150	31,815	19,501	17,207	21,202
	V:	257.54	357.42	537.11	527.84	635.93	809.50	769.81	647.41	616.22	631.84
	₹:	56.93	74.03	99.87	88.48	104.71	124.51	116.02	101.78	89.20	90.34
Others	Q:	97,145	1,14,538	1,12,841	1,09,212	1,24,947	1,13,949	1,41,442	1,72,512	1,55,487	1,42,638
	V:	1,089.67	1,488.24	1,565.78	1,623.50	2,138.94	1,817.87	2,133.59	2,780.48	3,060.53	2,756.84
	₹:	242.72	314.16	292.86	272.34	351.31	279.71	320.54	434.58	442.16	397.77
Total	Q:	8,13,091	8,62,021	9,28,215	9,83,756	10,51,243	9,45,892	11,34,948	13,77,244	13,92,559	12,89,652
	V:	12,901.47	16,597.23	18,856.26	30,213.26	33,441.61	30,420.83	37,870.90	45,106.89	46,589.37	46,662.86
	₹:	2,856.92	3,508.45	3,511.67	5,007.70	5,511.12	4,687.94	5,777.61	7,081.55	6,728.50	6,678.7

Q: Quantity in MT
V: Value in Rs. Crore
₹: US Dollar Million

Source: Marine Products Export Development Authority, Kochi

Fig. 31: Market-wise Percentage share of Export in Value (INR)

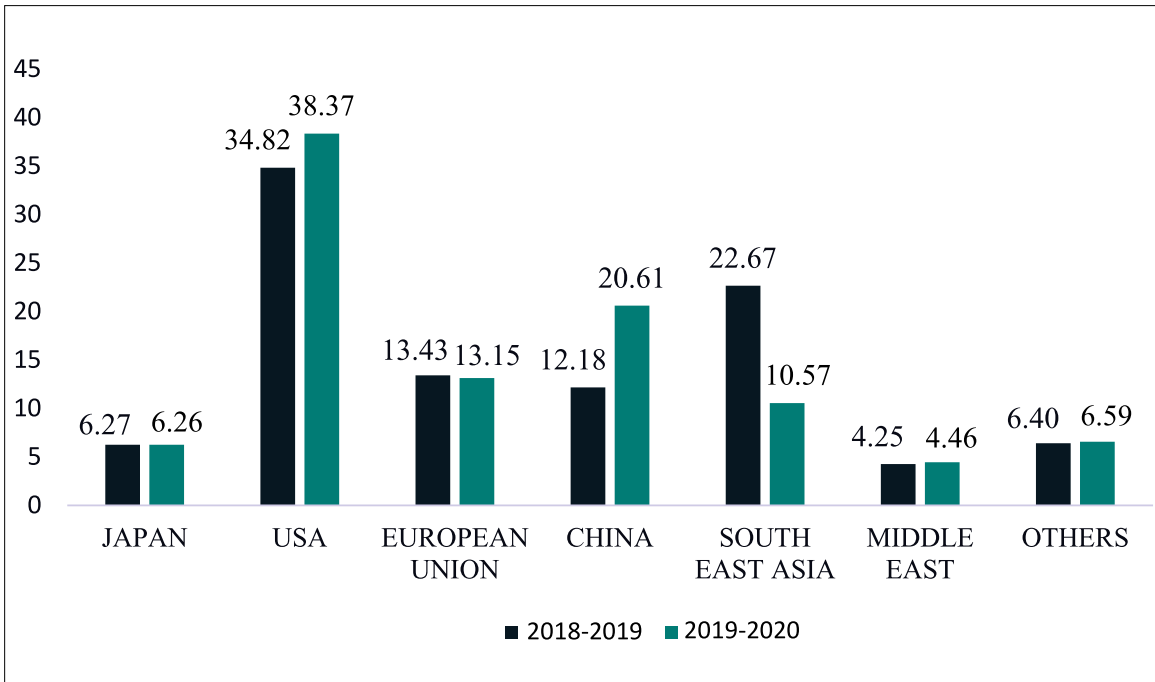


Fig. 32: Market-wise Percentage share of Export in Quantity

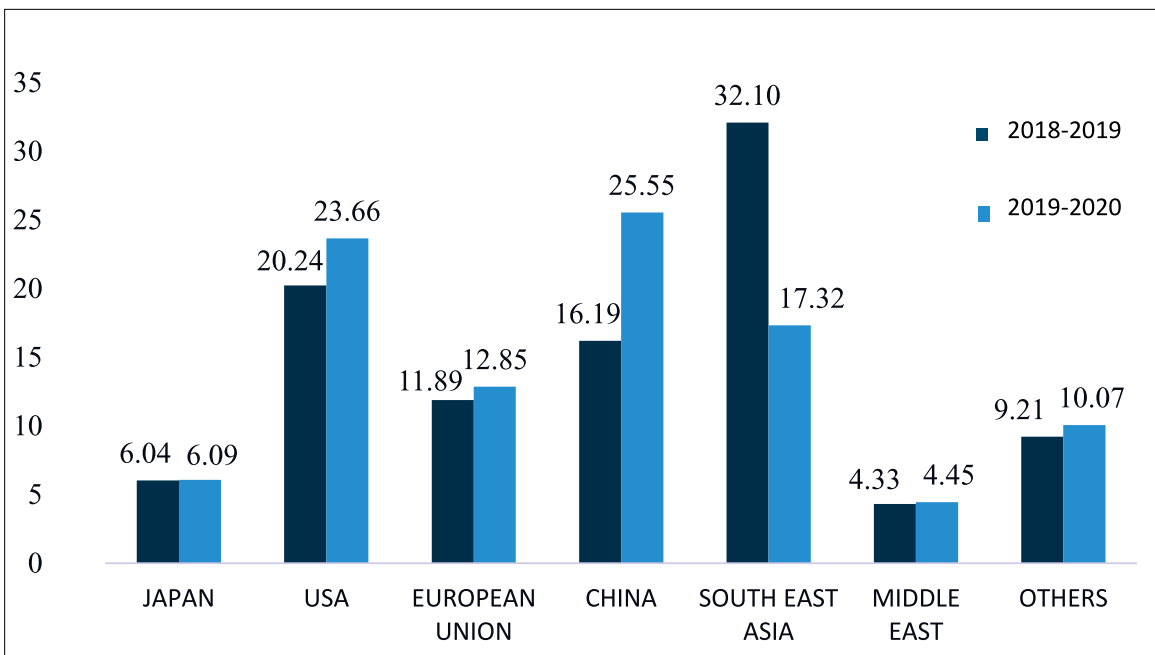


Table 5.3. Market wise Export of Fish and Fish Products: 2010-11 to 2014-15

Markets (Countries)	Quantity and Value	2010-11		2011-12		2012-13		2013-14		2014-15	
		Quantity and Value	% Share	Quantity and Value	% Share	Quantity and Value	% Share	Quantity and Value	% Share	Quantity and Value	% Share
Japan	Q:	70,714	8.70	85,800	9.95	76,648	8.26	71,484	7.27	78,772	7.49
	V:	1,683.39	13.05	2,140.67	12.90	1,999.59	10.60	2,463.83	8.15	3,040.26	9.09
USA	Q:	50,095	6.16	68,354	7.93	92,447	9.96	1,10,880	11.27	1,29,667	12.33
	V:	1,990.26	15.43	2,977.53	17.94	4,026.48	21.35	7,744.67	25.63	8,830.12	26.40
European Union	Q:	1,70,963	21.03	1,54,221	17.89	1,58,357	17.06	1,74,686	17.76	1,88,031	17.89
	V:	3,459.40	26.81	3,810.44	22.96	4,176.42	22.15	6,129.69	20.29	6,715.58	20.08
China	Q:	1,59,147	19.57	84,515	9.80	87,776	9.46	75,783	7.70	59,519	5.66
	V:	1,977.81	15.33	1,259.23	7.59	1,444.86	7.66	1,766.72	5.85	1,349.00	4.03
South East Asia	Q:	2,33,964	28.77	3,43,962	39.90	3,40,944	36.73	3,80,061	38.63	4,09,931	38.99
	V:	2,114.48	16.39	4,193.27	25.26	4,357.28	23.11	8,046.59	26.63	8,620.85	25.78
Middle East	Q:	43,983	5.41	38,155	4.43	41,419	4.46	58,040	5.90	64,608	6.15
	V:	670.35	5.20	894.38	5.39	1,113.34	5.90	1,599.37	5.29	2,020.86	6.04
Others	Q:	84,225	10.36	87,014	10.09	1,30,623	14.07	1,12,822	11.47	1,20,716	11.48
	V:	1005.77	7.80	1,321.72	7.96	1,738.29	9.22	2,462.40	8.15	2,864.93	8.57
Total	Q:	8,13,091	100.00	8,62,021	100.00	9,28,215	100.00	9,83,756	100.00	10,51,243	100.00
	V:	12,901.47	100.00	16,597.23	100.00	18,856.26	100.00	30,213.26	100.00	33,441.61	100.00

Q: Quantity in MT, V: Value in Rs. Crore

Source: Marine Products Export Development Authority, Kochi

Table 5.3. Market wise Export of Fish and Fish Products: 2015-16 to 2019-20

Markets (Countries)	Quantity and Value	2015-16		2016-17		2017-18		2018-19		2019-20	
		Quantity and Value	% Share	Quantity and Value	% Share	Quantity and Value	% Share	Quantity and Value	% Share	Quantity and Value	% Share
Japan	Q:	75,393	7.97	69,039	6.08	85,651	6.22	84,080	6.04	78,507	6.09
	V:	2,610.74	8.58	2,621.37	6.92	2,846.30	6.31	2,919.75	6.27	2,920.28	6.26
USA	Q:	1,53,695	16.25	1,88,617	16.62	2,47,780	17.99	2,81,913	20.24	3,05,178	23.66
	V:	8,633.40	28.38	11,482.16	30.32	14,769.83	32.74	16,220.00	34.81	17,904.37	38.37
European Union	Q:	1,86,349	19.70	1,89,833	16.73	1,90,314	13.82	1,65,571	11.89	1,65,773	12.85
	V:	6,311.45	20.75	6,892.19	18.20	7,115.96	15.78	6,256.20	13.43	6,136.71	13.15
China	Q:	50,042	5.29	45,443	4.00	49,701	3.61	2,25,519	16.19	3,29,479	25.55
	V:	1,432.25	4.71	1,341.94	3.54	1,448.03	3.21	5,672.76	12.18	9,617.44	20.61
South East Asia	Q:	3,28,900	34.77	4,84,819	42.72	6,16,707	44.78	4,46,966	32.10	2,23,398	17.32
	V:	7,499.16	24.65	11,461.83	30.27	14,250.26	31.59	10,561.31	22.67	4,929.90	10.56
Middle East	Q:	53,905	5.70	52,973	4.67	62,220	4.52	60,232	4.33	57,387	4.45
	V:	1,793.67	5.90	1,830.58	4.83	1,849.10	4.10	1,979.34	4.25	2,079.12	4.46
Others	Q:	97,609	10.32	1,04,224	9.18	1,24,871	9.07	1,28,278	9.21	1,29,929	10.07
	V:	2,140.16	7.04	2,240.83	5.92	2,827.40	6.27	2,980.02	6.40	3,075.03	6.59
Total	Q:	9,45,892	100.00	11,34,948	100.00	13,77,244	100.00	13,92,559	100.00	12,89,651	100.00
	V:	30,420.9	100.00	37,870.90	100.00	45,106.89	100.00	46,589.38	100.00	46,662.85	100.00

Q: Quantity in MT, V: Value in Rs. Crore

Source: Marine Products Export Development Authority, Kochi

Table 5.4: Port-wise Export Details during April-March 20-19-2020

Ports		2018 -19	Percentage Share of 2018-19	2019 - 20	Percentage Share of 2019-20	Growth (%)
VIZAG	Q:	2,21,374	15.90	2,41,783	18.75	9.22
	V:	11,913.07	25.57	13,139.73	28.16	10.3
	§:	1,726.32	25.66	1,880.49	28.16	8.93
CALCUTTA	Q:	1,16,167	8.34	1,28,150	9.94	10.32
	V:	5,227.73	11.22	5,308.02	11.38	1.54
	§:	757.13	11.25	760.9	11.39	0.5
KRISHNAPATNAM	Q:	86,248	6.19	97,708	7.58	13.29
	V:	4,644.12	9.97	5,134.31	11	10.56
	§:	672.48	9.99	735.44	11.01	9.36
KOCHI	Q:	1,80,457	12.96	1,46,038	11.32	-19.07
	V:	5,861.55	12.58	4,904.49	10.51	-16.33
	§:	845.57	12.57	700.26	10.49	-17.18
PIPAVAV	Q:	2,93,835	21.10	2,57,402	19.96	-12.4
	V:	4,844.03	10.40	4,556.19	9.76	-5.94
	§:	693.2	10.30	650.01	9.73	-6.23
J N P	Q:	1,58,213	11.36	1,34,766	10.45	-14.82
	V:	4,811.12	10.33	4,359.71	9.34	-9.38
	§:	694.56	10.32	623.4	9.33	-10.25
TUTICORIN	Q:	55,251	3.97	57,159	4.43	3.45
	V:	2,768.77	5.94	2,942.64	6.31	6.28
	§:	401.22	5.96	421.04	6.3	4.94
CHENNAI	Q:	55,296	3.97	51,539	4	-6.79
	V:	2,040.32	4.38	2,045.57	4.38	0.26
	§:	295.4	4.39	292.97	4.39	-0.82
MANGALORE/ICD	Q:	1,41,980	10.20	95,757	7.42	-32.56
	V:	1,886.43	4.05	1,358.89	2.91	-27.97
	§:	269.26	4.00	197.74	2.96	-26.56
KATTUPALLI/ ENNORE	Q:	18,205	1.31	26,174	2.03	43.78
	V:	778.84	1.67	1,220.50	2.62	56.71
	§:	112.44	1.67	174.77	2.62	55.43
OTHERS	Q:	65,532	4.71	53176	4.12	-18.85
	V:	1,813.39	3.89	1,692.80	3.63	-6.65
	§:	260.92	3.88	241.69	3.62	-7.37
Total	Q:	13,92,559	100	12,89,651	100	-7.39
	V:	46,589.37	100	46,662.85	100	0.16
	§:	6,728.50	100	6,678.69	100	-0.74

Q: Quantity in M T, V: Value in Rs. Crore

Source: Marine Products Export Development Authority, Kochi

Table 5.5: Value of Export of Marine Products:2010-11 to 2018-19

S.N.	Article distribution	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
1	Live fish	502.35	665.71	625.83	2023.25	931.75	750.00	1,349.87	1,305.59	1,070.29
2	Fish Fresh or chilled including Hilsa	16,391.61	24,931.60	40,448.7	58,585.16	54,992.82	57,401.20	50,902.60	31,206.04	43,006.16
3	Frozen Fish	2,77,313.81	3,40,250.43	3,47,373.55	4,70,331.01	4,07,639.6	3,61,378.18	4,55,186.75	4,72,764.75	4,83,764.02
4	Fish Fillets & Other Fish Meat	53,362.34	90,096.07	1,02,915.16	78,298.93	86,183.09	1,01,981.41	1,13,780.94	1,61,042.47	1,84,813.35
5	Fish dried salted	7,515.44	11,277.91	8,345.35	21,975.35	19,841.68	34,129.46	47,678.15	48,690.66	66,741.11
6	Shrimp, Lobsters, Prawns	51,3155.77	8,39,100.40	10,08,157.32	19,66,830.54	22,97,262.2	20,31,775.80	25,33,135.96	31,63,349.69	30,79,801.28
7	Molluscas, Cuttle Fish, etc.	1,86,652.54	2,77,367.45	2,99,261.64	3,41,956.21	3,39,917.57	3,49,776.63	4,87,267.45	5,38,617.54	5,22,404.05
8	Fats & Oils & their Fractns	6,487.22	11,815.64	18,854.62	19,752.52	25,686.82	16,659.15	13,506.18	20,688.11	5,170.21
9	Extracts & Juices of Meat Fish Crustaceans Molluscas/ other aquatic invertebrates	19,849.15	8,369.82	224.90	178.19	78.36	380.63	836.88	286.49	93.53
10	Prepared or Preserved Fish; Caviar and Caviar substitute prepared from Fish Eggs	31,321.90	26,446.25	16,971.79	20,040.22	19,582.94	22,362.66	25,674.41	27,205.98	29,597.61
11	Crustaceans Molluscas& other Aquatic Invertebrates prepared or preserved	72,802.47	22,219.70	33,181.49	51,729.27	74,167.15	1,15,665.00	1,85,774.98	2,43,779.54	2,71,993.08
Sub-Total		72,802.47	22,219.70	33,181.49	51,729.27	74,167.15	1,15,665.00	1,85,774.98	2,43,779.54	2,71,993.08
Total without 1605		11,12,552.1	16,30,321.28	18,43,178.86	29,79,971.38	32,52,116.83	29,76,595.12	37,29,319.19	44,65,157.32	44,16,461.61
Total with 1605		11,85,354.6	16,52,540.98	18,76,360.35	30,31,700.65	33,26,283.98	30,92,260.12	39,15,094.17	47,08,936.86	46,88,454.69

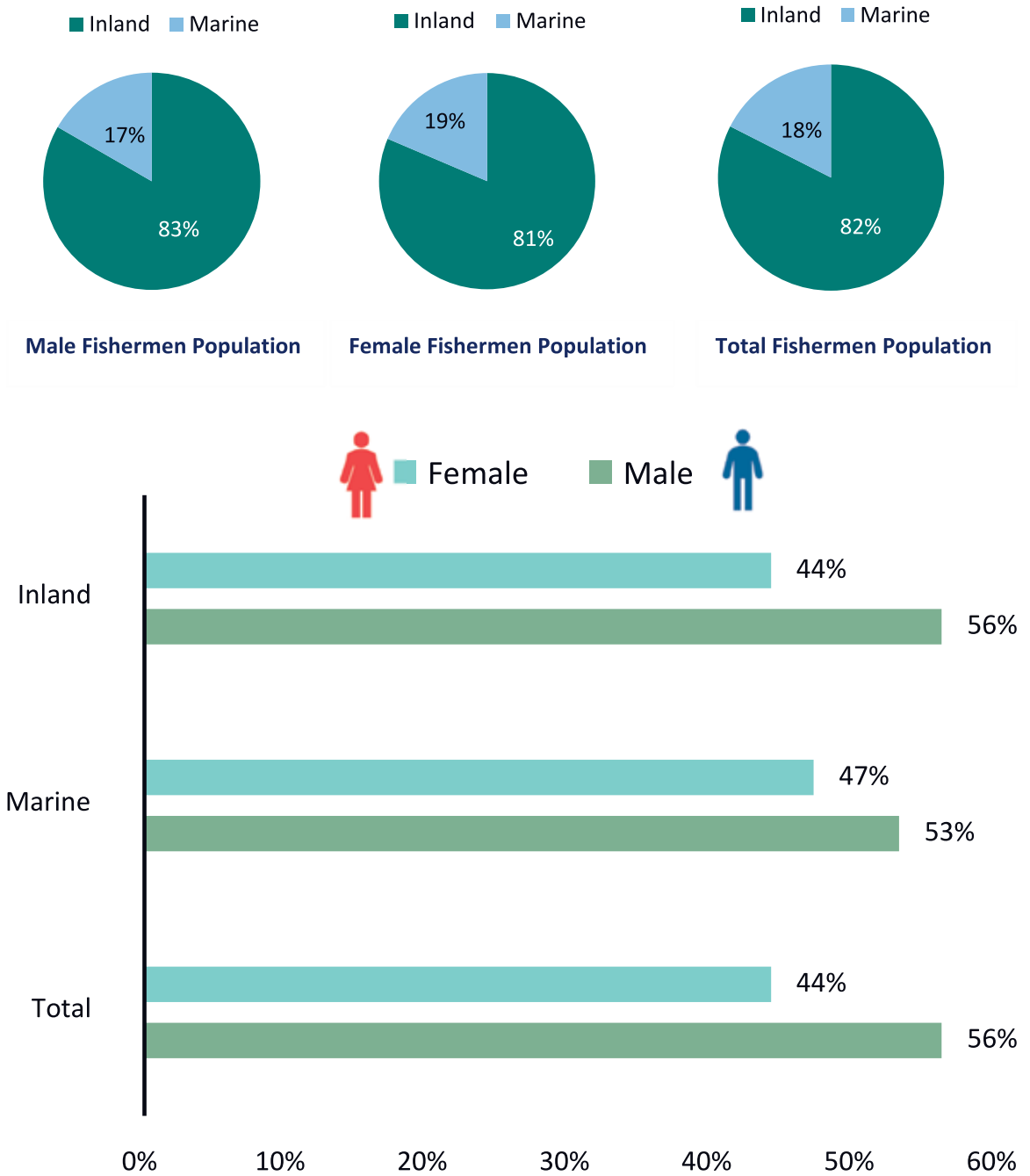
Source: Marine Products Export Development Authority, Kochi

CHAPTER 6

FISHERMEN POPULATION



Fig 33 : Gender-Wise Inland and Marine Fishermen Population in India : 2019-20



	Male	Female	Total
Inland	1,30,13,978	1,01,03,842	2,31,17,820
Marine	26,51,652	22,94,065	49,45,717
All India	1,56,65,630	1,23,97,907	2,80,63,537

Remarks: The Fishermen population includes Fish farmers, Fish worker, and fishers.

Table 6.1: Fishermen Population and their Percentage: 2019-20

State/UT's	Number of Districts	Fishermen Population	Whole Population	Fishermen Population per District
Andhra Pradesh	13	14,96,688	5,39,03,393	1,15,129
Arunachal Pradesh	25	24,015	15,70,458	961
Assam	33	25,24,106	3,56,07,039	76,488
Bihar	38	60,27,375	12,47,99,926	1,58,615
Chhattisgarh	27	2,20,355	2,94,36,231	8,161
Goa	2	10,545	15,86,250	5,273
Gujarat	33	5,58,691	6,38,72,399	16,930
Haryana	22	1,18,455	2,82,04,692	5,384
Himachal Pradesh	12	11,806	74,51,955	984
Jharkhand	24	1,40,897	3,85,93,948	5,870
Karnataka	30	9,74,277	6,10,95,027	32,476
Kerala	14	10,44,361	3,56,99,443	74,597
Madhya Pradesh	52	22,32,822	8,53,58,964	42,939
Maharashtra	36	15,18,228	12,31,44,223	42,173
Manipur	16	47,711	30,91,545	2,982
Meghalaya	11	16,567	33,66,710	1,506
Mizoram	11	6,289	12,39,244	572
Nagaland	11	7,958	22,49,695	723
Odisha	30	15,17,574	4,63,56,334	50,586
Punjab	22	7,591	3,01,41,373	345
Rajasthan	33	57,260	8,10,32,689	1,735
Sikkim	4	581	6,90,251	145
Tamil Nadu	37	12,83,751	7,78,41,267	34,696
Telangana	33	8,62,221	3,93,62,732	26,128
Tripura	8	7,761	41,69,794	970
Uttarakhand	13	8,352	1,12,50,858	642
Uttar Pradesh	75	39,00,005	23,78,82,725	52,000
West Bengal	23	32,36,261	9,96,09,303	1,40,707
A and N Islands	3	25,941	4,17,036	8,647
Chandigarh	1	524	11,58,473	524
D & N Haveli, Daman and Diu	3	40,016	6,15,724	13,339
Delhi	11	3,346	1,87,10,922	304
Jammu & Kashmir	22	17,396	1,36,06,320	791
Ladakh	2	22	2,89,023	11
Lakshadweep	1	6,518	73,183	6,518
Puducherry	4	1,07,272	14,13,542	26,818
All India	735	2,80,63,538	1,36,48,92,691	9,56,669

Source: Department of Fisheries, States Government / UTs Administration

Table 6.2: Gender-wise Fishermen Population : 2019-20

State/UT's	Inland Fishermen Population		Marine Fishermen Population	
	Male	Female	Male	Female
Andhra Pradesh	333,558	288,293	461,712	413,125
Arunachal Pradesh	15,147	8,868	NA	NA
Assam	1,624,059	900,047	NA	NA
Bihar	3,127,733	2,899,642	NA	NA
Chhattisgarh	146,971	73,384	NA	NA
Goa	NA	NA	5,273	5,272
Gujarat	120,900	110,085	167,858	159,848
Haryana	117,934	521	NA	NA
Himachal Pradesh	10,739	1,067	NA	NA
Jharkhand	94,497	46,400	NA	NA
Karnataka	465,352	180,924	196,970	131,031
Kerala	122,377	117,819	431,447	372,718
Madhya Pradesh	1,232,957	999,865	NA	NA
Maharashtra	602,536	529,433	197,760	188,499
Manipur	3,278	44,433	NA	NA
Meghalaya	11,745	4,822	NA	NA
Mizoram	5,328	961	NA	NA
Nagaland	5,896	2,062	NA	NA
Odisha	549,806	371,613	314,069	282,086
Punjab	7,018	573	NA	NA
Rajasthan	31,880	25,380	NA	NA
Sikkim	488	93	NA	NA
Tamil Nadu	125,694	110,220	535,337	512,500
Telangana	483,094	379,127	NA	NA
Tripura	7,718	43	NA	NA
Uttarakhand	7,260	1,092	NA	NA
Uttar Pradesh	2,101,383	1,798,622	NA	NA
West Bengal	1,629,481	1,204,093	246,225	156,462
A and N Islands	2,807	946	12,024	10,164
Chandigarh	524	NA	NA	NA
D & Nagar Haveli and Daman & Diu	NA	NA	20,529	19,487
Delhi	3,316	30	NA	NA
Jammu & Kashmir	17,396	NA	NA	NA
Ladakh	22	NA	NA	NA
Lakshadweep	NA	NA	5,138	1,380
Puducherry	5,084	3,384	57,310	41,494
All India	13,013,978	10,103,842	26,51,652	22,94,066

Source: Department of Fisheries, States Government / UTs Administration

Table 6.3: Number of Fishermen Population engaged in Marine Fisheries activities, 2019-20

State/UT	Full Time		Part Time		Occasional		Unspecified		Deep Sea	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
A and N Islands	13,369	112	1,058	300	NA	NA	NA	NA	NA	NA
Gujarat	71,777	36,840	19,348	12,362	NA	NA	NA	NA	NA	NA
Karnataka	56,871	43,030	55,599	39,662	5,973	3,684	57,139	44,655	21,388	NA
Kerala	295,787	255,502	27,178	23,477	NA	NA	NA	NA	NA	NA
Maharashtra	91,766	34,948	29,262	38,761	20,539	20,343	3,318	9,954	10,913	NA
Tamil Nadu	208,201	NA	24,253	201,286	12,815	17,645	65,170	248,663	25,000	NA
Daman and Diu	6,553	NA	82	NA	60	NA	NA	NA	NA	NA
Lakshadweep	2,348	NA	2,134	NA	562	1,380	NA	NA	NA	NA
Puducherry	24,534	11,915	6,234	4,310	1,000	800	2,814	10,056	15,084	25
All India	1,153,553		485,306		84,801		441,769		72,410	

Source: Department of Fisheries, State Govt./ UT's Administration

Table 6.4: Number of Fishermen Population engaged in Inland Fisheries activities, 2019-20

State/UT	Full Time		Part Time		Occasional		Unspecified	
	Male	Female	Male	Female	Male	Female	Male	Female
Arunachal Pradesh	NA	NA	15,147	8,868	NA	NA	NA	NA
Assam	65,693	60,628	281,107	259,530	15,357	13,979	574,178	529,849
Bihar	38,207	17,344	64,943	22,386	48,293	21,676	1,940,839	1,844,450
Chhattisgarh	158,506	25,295	11,897	5,806	7,028	2,911	5,960	2,952
Gujarat	35,118	15,413	22,569	4,843	NA	NA	NA	NA
Haryana	9,050	1,382	12,968	256	432	10	NA	NA
Himachal Pradesh	5,350	NA	6,399	NA	NA	NA	NA	NA
Jharkhand	10,500	1,500	31,547	11,350	33,255	15,750	19,195	17,800
Karnataka	107,580	38,081	200,455	82,405	141,673	59,074	15,644	1,364
Kerala	77,832	74,876	15,403	14,818	NA	NA	NA	NA
Maharashtra	135,723	37,885	52,830	14,561	25,576	5,212	18,453	1,356
Meghalaya	1,954	777	3,750	2,503	5,861	1,448	244	121
Mizoram	1,320	316	2,300	495	1,000	100	600	152
Nagaland	176	79	197	340	2,120	650	2,122	915
Odisha	142,912	47,242	107,088	40,156	113,653	40,364	181,867	93,651
Rajasthan	6,386	NA	11,830	NA	846	NA	NA	NA
Sikkim	NA	NA	2500	127	NA	NA	NA	NA
Tamil Nadu	NA	NA	62,802	7,923	3,752	5,554	7,409	24,084
Telangana	199,032	156,200	174,155	136,676	74,640	58,576	49,758	39,149
Tripura	19,072		13,291		1,583		NA	
Uttarakhand	1,451	307	5,771	711	1,168	65	391	65
Uttar Pradesh	90,500	22,000	34,500	NA	NA	NA	NA	NA
Chandigarh	5	5	NA	NA	NA	NA	NA	NA
Daman and Diu	335	390	265	420	136	135	NA	NA
Delhi	270	NA	519	NA	32	NA	NA	NA
Jammu & Kashmir	17,396	NA	1,342	NA	1,187	NA	326	NA
Puducherry	1,500	500	500	200	250	100	100	50
All India	1,626,088		1,750,449		703,446		5,373,044	

Source: Department of Fisheries, State Govt./ UT's Administration

CHAPTER 7

FISHERIES RESOURCES



Fig 34 : Marine Fisheries Resources - Coastal States and Union Territories of India

	Coastal length (km)	Landing centres	Fishing villages
Andaman & Nicobar	1912	51	169
Andhra Pradesh	974	350	555
D & Nagar Haveli and Daman and Diu	27	8	12
Goa	104	32	60
Gujarat	1600	107	260
Karnataka	300	115	162
Kerala	590	174	220
Lakshadweep	132	20	10
Maharashtra	720	173	456
Orissa	480	55	739
Pondicherry	45	22	39
Tamil Nadu	1076	301	608
West Bengal *	158	49	171
Total	8,118	1,457	3,461

Note : The data given in table as per the States/Uts Government.

States	Rivers and Canals (Km)	Small Reservoirs		Medium & Large Reservoir		Tanks and Ponds (Ha)	Brackish Water (Ha)	Beels/ Oxbow Lakes/ Derelict Water (Ha)	Any other rivers and canals (Ha)
		Number	Area(ha)	Number	Area (ha)				
Andhra Pradesh	11,514	90	34,693	26	1,30,898	3,33,634	53,830	0	0
Arunachal Pradesh	10,957	1	136	0	0	29,122	0	3,277	56,000
Assam	4,820	0	0	2	1,096	77,250	0	1,54,650	4,62,382
Bihar	3,200	0	0	37	26,304	93,218	0	9,000	0
Chhattisgarh	3,570	1,757	43,681.85	13	39,035.75	1,09,003.64	0	0	0
Goa	250	4	484	1	2,964	87.7	108.46		
Gujarat	3,865	1,547	92,705	88	2,54,954	22,000	1,87,000	0	0
Haryana	7,197	0	0	0	0	17,244	0	0	0
Himachal Pradesh*	3,000	0	0	5	43,785	845.34	0	0	0
Jharkhand*	1,800	412	28,789.63	23	1,04,363	79,010	0	0	19,936
Karnataka	5,853	33	7,195	49	2,65,063	2,91,627	8,000	0	0
Kerala	3,220	37	12,039	10	21,707	27,625	65,213	0	0

Table 7.1: Inland Fisheries Resources by States and Union Territories of India: 2019-20

States	Rivers and Canals (Km)	Small Reservoirs		Medium & Large Reservoir		Tanks and Ponds (Ha)	Brackish Water (Ha)	Beels/Oxbow Lakes/ Derelict Water (Ha)	Any other than rivers and canals (Ha)
		Number	Area(ha)	Number	Area (ha)				
Madhya Pradesh	17,088	3,315	1,24,486	25	2,28,321	76,982	0	0	0
Maharashtra	29,530	5,273	12,27,089	411	3,02,830	66,50,013	2,699	41,288	450
Manipur	14,788	5	960	1	1,182	11,622.8	0	24,433	0
Meghalaya*	4,200.87	7	717.53	0	0	3,465.37	0	284.78	66.94
Mizoram	1,750	3	10	2	8,000	5,492.04	0	0	0
Nagaland	1,600	0	0	1	2,258	3,474.13	0	1,110	0
Odisha*	24,878.72	603	34,608	8	1,65,771	1,33,786	3,84,950	1,80,000	0
Punjab	868	12	686.73	1	3,525	16,730	0	0	
Rajasthan	5,290	346	82,396	48	2,54,475	93,909	0	0	0
Sikkim	1,600	3	850	0	0	1,466	0	0	0
Tamil Nadu	7,420	69	19,948	9	42,067	2,53,975	56,000	7,000	3,85,218.2
Telangana	4,818	56	23,146	26	1,91,763	3,95,828	0	0	0
Tripura	2,975.8	0	0	1	3,049.34	18,530.12	0	0	12,161.01
Uttarakhand*	2,686	0	0	7	20,587	862.32	0	297	50*
Uttar Pradesh	39,542	53	12,899.59	29	1,32,655	1,72,859.33	0	12,034.15	0
West Bengal	2,526.00	52	28,050.00	0	0	2,63,372.00	2,10,000	42,082	26,925
A and N Islands	0	7	367	0	0	202.26	0	0	0
Chandigarh	0	0	0	3	300	2.06	0	0	0
D & Nagar Haveli and Daman and Diu	0	0	0	0	0	0	0	0	0
Delhi	66	0	0	0	0	12	0	0	0
Jammu & Kashmir*	27,781	5	750	2	6,250	17,010	0	6,000	0
Ladakh	3,770	0	0	1	250	7.52	97,700	0	0
Lakshadweep	0	0	0	0	0	1.84	0	0	0
Puducherry	7.086	0	303.33	0	1,357.12	57.45	0	0	0
All India	2,52,431.48	13,690	17,76,991	829	22,54,810	92,00,327	10,65,500	4,81,455.93	9,63,189.20

Source: Department of Fisheries, States Government / UTs Administration

*Uttarakhand : 50 waterlogged , Raceways – 1.7 Ha

*Meghalaya : Beels = 220.83 Lakes = 63.95, swamps and low-lying areas = 66.94

*Jharkhand : 19,936 Ha (check dams , Ahar, coalpits and Mines)

*Himachal Pradesh : Raceways – 4.2068 Ha

*Odisha : Brackishwater area suitable for culture – 32587 Ha , Backwater – 8100 Ha , Brackishwater chilika lake – 79000 Ha, Estuaries – 297850 Ha

*Jammu and Kashmir : Raceways – 11.69 Ha

Marine Fisheries resource potential in India

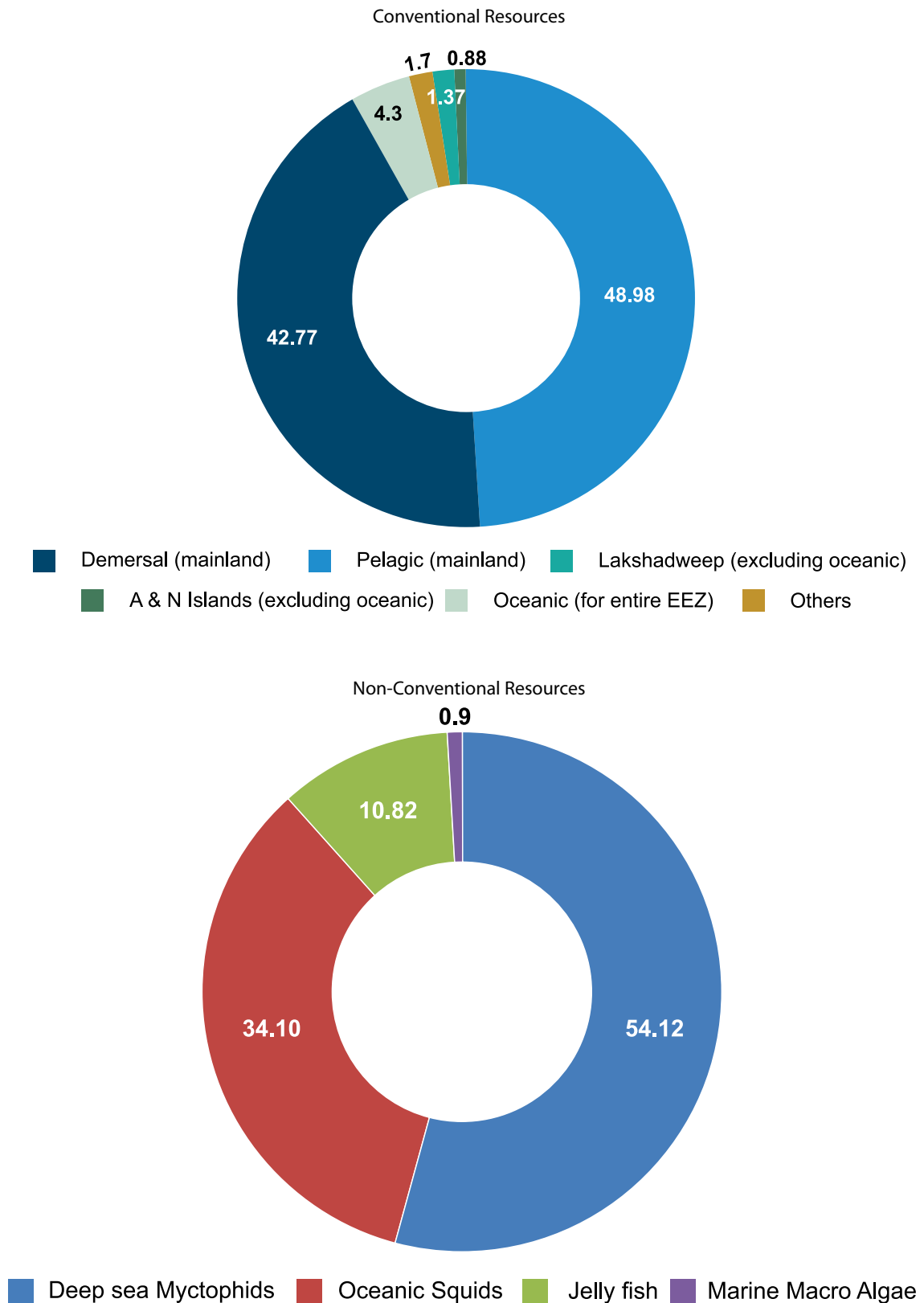
Resource-wise fisheries potential yield from the depth zone up to 500m depth was estimated by the committee constituted by Department of Fisheries (then DADF), Government of India for Revalidation of potential yield from the Indian EEZ. The estimate of potential yield of conventional resources along the mainland & Island ecosystems of India is 5.31 million tonnes and Non-conventional resources is 1.847 million Tonnes; thus totalling to 7.158 million Tonnes. (Ref. Document of DoF, 2018).

Summary of estimated potential of marine fisheries in different realms. (2018)

Table 7.2: Potential of Fisheries Resources in the Indian Exclusive Economic Zone (EEZ)	
A. Conventional resource	Quantity in Tonnes
Demersal resources (mainland)	22,98,281
Pelagic resources (main land)	26,31,827
Lakshadweep (excluding oceanic resources)	14,490
Andaman & Nicobar (excluding oceanic resources)	43,794
Oceanic (for entire EEZ)	2,30,832
Others	91,369
Sub Total	53,10,593
B. Non-Conventional resources: (Additional Potential)	
Deep sea Myctophids	10,00,000
Oceanic Squids	6,30,000
Jelly fish	2,00,000
Marine Macro Algae	17,775
Sub Total	18,47,775
Resources Grand Total:	71,58,368
Source: Fishery Survey of India (Report of the working group for revalidating the potential yield of Fishery Resources in the Indian EEZ), 2018	

The marine fish production estimated for the country in 2019-20 is about 3.72 million tonnes which consists mainly of the conventional resources harvested mainly from waters within 200m depths. Hence, there is scope for increasing the landings of conventional resources from oceanic waters as well as scope for harnessing additional Non-Conventional marine fishery resources of 1.84 Million Tonnes.

Fig 35 : Percentage Contribution of Potential of Fisheries Resources in the Indian Exclusive Economic Zone (EEZ): 2018



CHAPTER 8

EXPENDITURE ON FISHERY SECTOR



Fig 36 : Year-wise approved outlay and Expenditure for development of fisheries sector under Blue Revolution Scheme including NFDB & Fishery Institute 2015-16 to 2019-20 (Rs. In Lakh)

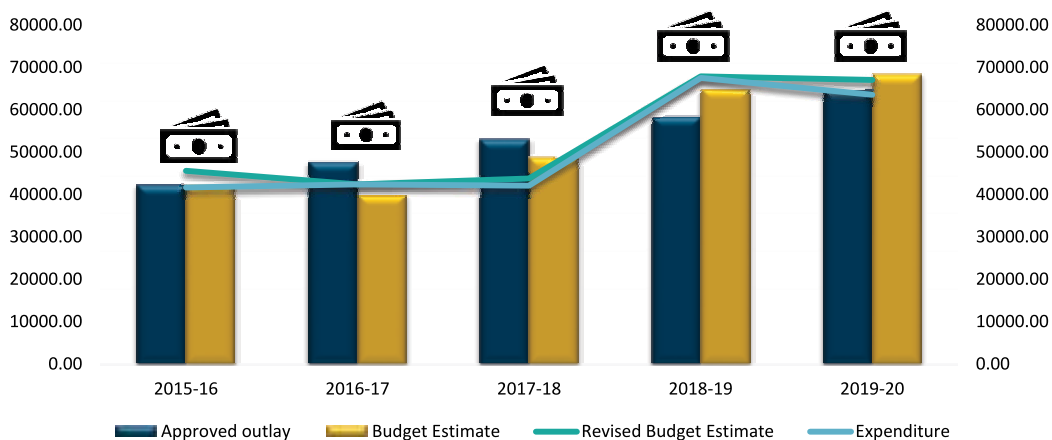


Table 8.1: Year-wise approved outlay and Expenditure for development of fisheries sector under Blue Revolution Scheme including NFDB & Fishery Institute 2015-16 to 2019-20 (Rs. In Lakh)

Year	Approved outlay	Budget Estimate	Revised Budget Estimate	Expenditure
2015-16	47,695.00	47,695.00	45,586.00	41,680.94
2016-17	53,800.00	45,000.00	42,425.00	42,411.00
2017-18	59,800.00	54,913.00	43,799.19	42,077.95
2018-19	65,800.00	73,245.00	67,914.00	67,552.37
2019-20	72,905.00	77,025.00	67,025.00	63,575.86
Total	3,00,000.00	2,97,878.00	2,66,749.19	2,57,298.12

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 8.2: Scheme –wise Outlay and Expenditure 2016-17 to 2019-20, Fisheries Sector Schemes (Rs. In Crore)

S.N	Scheme	2016-17			2017-18			2018-19			2019-20		
		BE	RE	EXP	BE	RE	EXP	BE	RE	EXP	BE	RE	EXP
1	Blue Revolution: Integrated Development and Management of Fisheries	242.89	388.44	384.01	400.73	301.73	323.55	632.61	484.85	484.46	550.00	450.00	429.78
2	NFDB	192.11	33.81	38.45	9.00	9.00	13.99	5.00	101.63	101.62	80.75	80.75	80.75
3	FIDF	-	-	-	-	-	-	10.00	1.00	1.00	10.00	5.25	0.00
	Sub- Total	435.00	422.25	422.46	409.73	310.73	337.54	647.61	587.48	587.08	640.75	536.00	510.53
4	FSI	80.01	61.33	54.60	75.27	53.18	51.05	57.62	55.19	56.27	91.65	90.82	84.32
5	CIFNET	35.61	18.83	-	44.72	20.29	19.57	19.43	19.11	19.05	25.80	28.71	27.13
6	NIFPHATT	13.91	10.21	0.00	13.25	10.15	9.07	11.60	11.60	9.86	14.06	12.18	9.23
7	CICEF	4.10	4.20	3.37	4.97	4.24	3.55	3.93	4.46	4.22	4.93	4.73	4.53
	Sub- Total	133.63	94.57	57.97	138.21	87.86	83.24	92.58	90.36	89.40	136.44	136.44	125.21

Table 8.2: Scheme –wise Outlay and Expenditure 2016-17 to 2019-20, Fisheries Sector Schemes (Rs. In Crore)

S.N	Scheme	2016-17			2017-18			2018-19			2019-20		
		BE	RE	EXP	BE	RE	EXP	BE	RE	EXP	BE	RE	EXP
8	DAAHQ	1.00	0.02	0.00	1.18	13.81	0.00	2.27	1.75	3.53	3.04	3.03	0.00
9	CAA	3.80	3.80	2.40	4.00	3.50	2.00	4.00	4.00	4.00	4.50	4.50	4.50
10	Package for replacement of Fishing vessels seized by Pakistan	-	-	-	0.10	0.10	0.10	1.00	3.92	3.92	-	-	-
11	Secretariate Economic Services										20.00	20.00	15.48
	Grand Total**	573.43	520.64	482.83	553.22	416.00	422.88	747.46	687.51	687.93	804.73	699.97	655.72

* All Schemes are merged into Blue Revolution: Integrated Development and Management of Fisheries after the FY 2015-16.
 ** Final requirement for the FY 2017-18 was 441.59 but CAA & PRFVS are not included in BR Scheme. Hence the final RE was 437.99.

Source: D/o Fisheries, M/o Fisheries, Animal Husbandry & Dairying.

BE: Budget Estimate

RE: Revised Estimate

EXP: Expenditure

Including Plan Component of Fishery Institutes during 2016-17

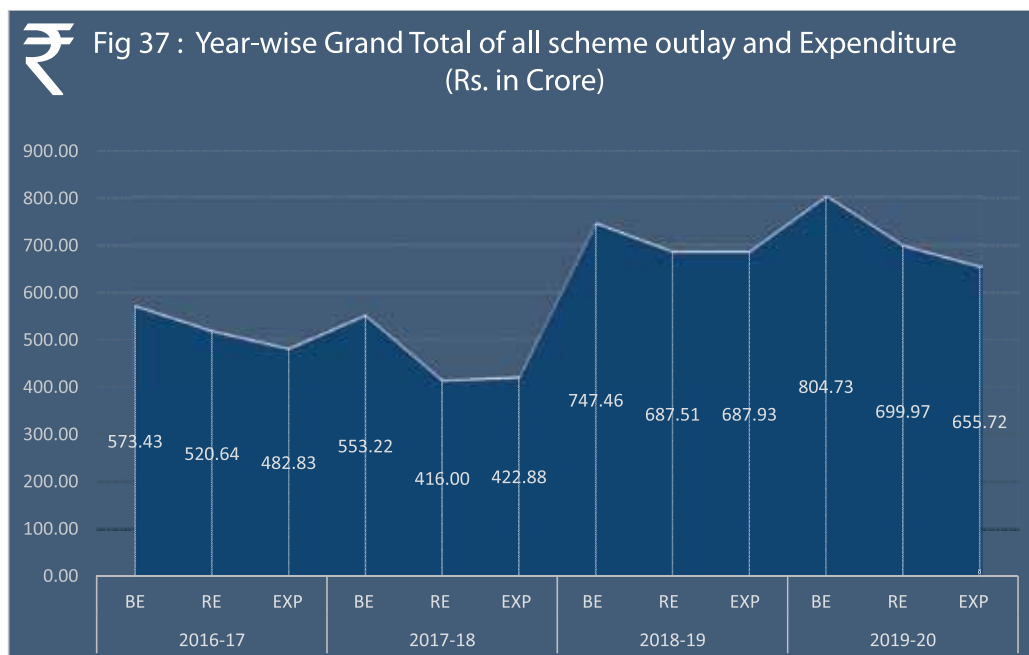


Table 8.3: State/UT – wise release in Fisheries Sector during 2015-16 to 2019-20 (Rs. in Lakh)

State/UT/Institutes	2015-16	2016-17	2017-18	2018-19	2019-20	Total
Andhra Pradesh	777.15	1,897.00	2,162.88	1,302.31	2,556.20	8,695.54
Arunachal Pradesh	81.30	0.00	222.90	374.68	24.77	703.65
Assam	971.14	1,641.45	799.66	524.14	280.01	4,216.40
Bihar	93.84	1,948.04	2.25	4,078.69	1,557.15	7,679.97
Goa	70.82	1000.00	265.24	63.82	0.00	1,399.88
Gujarat	491.43	386.50	1,527.43	1,420.80	1000.00	4,826.16
Haryana	194.95	1,122.05	779.36	605.90	696.47	3,398.73
Himachal Pradesh	181.57	1,082.32	572.26	1,046.13	629.14	3,511.42
Jharkhand	589.12	2,300.20	75.00	925.40	0.00	3,889.72
Karnataka	2,352.58	2,870.54	3,324.31	5,847.28	2,330.61	16,725.32
Kerala	6,713.78	1,298.10	812.34	5,093.01	9,357.15	23,274.38
Madhya Pradesh	346.09	1,400.00	672.02	711.39	1,859.47	4,988.97
Maharashtra	1,263.62	2,051.53	2,256.81	2,861.17	1000.00	9,433.13
Manipur	590.22	0.00	456.15	382.13	50.68	1,479.18
Meghalaya	36.10	1,003.17	139.60	2,598.95	2,387.45	6,165.27
Mizoram	1,016.49	1,376.77	261.39	403.75	735.99	3,794.39
Nagaland	867.92	965.84	219.40	194.67	2,396.17	4,644.00
Odisha	1,256.93	2,593.59	1,077.68	1,022.13	543.68	6,494.01
Punjab	42.59	999.00	465.36	581.34	2,063.76	4,152.05
Rajasthan	34.21	262.10	83.28	70.20	266.20	715.99
Sikkim	26.94	379.16	0.00	416.52	1,019.65	1,842.27
Tamil Nadu	5,700.73	2,492.50	11,342.80	7,155.91	1,801.00	28,492.94
Telangana	165.94	1,465.00	479.78	1,574.80	154.00	3,839.52
Tripura	361.96	867.88	341.92	2004.18	788.91	4,364.85
Uttar Pradesh	672.63	1,760.85	238.14	3,050.06	3,816.63	9,538.31
Uttarakhand	48.85	954.95	746.16	471.08	683.67	2,904.71
West Bengal	925.84	774.38	649.32	185.40	0.00	2534.94
A & N Islands	275.00	54.00	179.89	129.09	51.21	689.19
Chhattisgarh	446.51	1,346.69	1,091.92	1,045.69	3,292.90	7,223.71
Daman & Diu	21.77	0.00	226.69	0.00	0.00	248.46
Delhi	0.00	0.00	136.29	0.00	0.00	136.29
Jammu & Kashmir	213.23	1,111.18	404.69	439.54	788.63	2,957.27
Lakshadweep	42.25	0.00	53.57	39.90	29.30	165.02
Pondicherry	859.95	999.95	150.00	1,448.00	461.37	3,919.27
NFDB	5,339.99	3,239.03	1,399.00	10,162.00	8,075.00	28,215.02
Fisheries Institutes	5,439.75	165.44	8,324.14	8,944.39	12,522.17	35,395.89
Others	3,167.75	601.97	138.35	377.92	806.5	5,092.49
Total	41,680.94	42,411.18	42,077.97	67,552.37	64,025.84	2,57,748.29

Rs. 10000 lakh has been released on 31.03.2018 for deep sea fishing and construction of fish landing center at Kuntukal by M/o Finance

*Releases from NFDB has not included from the release figure mentioned from 2016-17

Source: D/o Fisheries, M/o Fisheries, Animal Husbandry & Dairying.

Table 8.4: State -wise Completed and ongoing projects approved under RKVY in Fisheries Sector during 2015-16 to 2019-20 (Rs. in Crore)

	State	Fin Year	Project Status	Cost
1	ANDHRA PRADESH	2015-16	Completed	
			Ongoing	28.09
		2016-17	Completed	
			Ongoing	37.15
		2017-18	Ongoing	47.28
		2018-19	Ongoing	20.20
		2019-20	Ongoing	26.26
		Total	158.98	
2	ARUNACHAL PRADESH	2015-16	Ongoing	
		2016-17	Completed	
			Ongoing	
		2017-18	Ongoing	
		2018-19	Ongoing	
2019-20	Ongoing	5.00		
		Total	5.00	
3	ASSAM	2015-16	Ongoing	
		2016-17	Ongoing	33.00
		2017-18	Ongoing	
		2018-19	Ongoing	5.127
		2019-20	Ongoing	18.97
		Total	57.10	
4	BIHAR	2015-16	Completed	
			Ongoing	
		2017-18	Ongoing	
		Total		
5	CHHATTISHGARH	2015-16	Completed	
			Ongoing	
		2016-17	Completed	13.82
			Ongoing	
		2017-18	Completed	0.525
			Ongoing	15.19
		2018-19	Ongoing	
2019-20	Ongoing	12.52		
		Total	42.07	
6	GOA	2015-16	Ongoing	
		2016-17	Ongoing	
		2017-18	Ongoing	3
		2018-19	Ongoing	
		2019-20	Ongoing	0.64

Table 8.4: State -wise Completed and ongoing projects approved under RKVY in Fisheries Sector during 2015-16 to 2019-20 (Rs. in Crore)

	State	Fin Year	Project Status	Cost
			Total	3.64
7	GUJARAT	2015-16	Completed	
			Ongoing	1.09
		2016-17	Completed	
			Ongoing	
		2017-18	Completed	
			Ongoing	68.41
		2018-19	Ongoing	4
2019-20	Ongoing	5		
			Total	78.5
8	HARYANA	2015-16	Ongoing	8.95
		2016-17	Ongoing	5
		2017-18	Ongoing	51.1
		2018-19	Ongoing	9.98
		2019-20	Ongoing	8
			Total	83.03
9	HIMACHAL PRADESH	2015-16	Completed	0.63
			Ongoing	0.63
		2016-17	Completed	0.75
			Ongoing	0.75
		2017-18	Completed	
			Ongoing	2.981
		2018-19	Ongoing	1.006
2019-20	Ongoing			
			Total	6.747
10	JHARKHAND	2015-16	Ongoing	
		2016-17		
		2017-18		
		2018-19		
		2019-20	Ongoing	14.29
			Total	14.29
11	KARNATAKA	2015-16	Completed	
			Ongoing	5.22
		2016-17	Completed	
			Ongoing	5
		2017-18	Completed	
			Ongoing	6.62
		2018-19	Ongoing	2.61
2019-20	Ongoing	14.83		

Table 8.4: State -wise Completed and ongoing projects approved under RKVY in Fisheries Sector during 2015-16 to 2019-20 (Rs. in Crore)

	State	Fin Year	Project Status	Cost		
			Total	34.28		
12	KERALA	2015-16	Completed	16.5		
			Ongoing	26.5		
		2016-17	Completed			
			Ongoing	28.87		
		2017-18	Completed			
			Ongoing	20.65		
		2018-19	Ongoing			
		2019-20	Ongoing	8.37		
				Total	100.89	
		13	MADHYA PRADESH	2015-16	Ongoing	7.656
2016-17	Ongoing			7.2		
2017-18	Ongoing					
2018-19	Ongoing			13.41		
2019-20	Ongoing			9.79		
		Total	38.0			
14	MAHARASHTRA	2015-16	Completed			
			Ongoing			
		2016-17	Completed			
			Ongoing			
		2017-18	Ongoing	51.06		
		2018-19	Ongoing			
		2019-20	Ongoing	30.80		
				Total	81.86	
		15	MEGHALAYA	2015-16	Completed	
					Ongoing	
2016-17	Completed					
	Ongoing					
2017-18	Completed					
	Ongoing			0.20		
2018-19	Ongoing			3.98		
2019-20	Ongoing			11.15		
				Total	15.33	
16	MIZORAM			2015-16	Ongoing	2.42
		2016-17	Ongoing			
		2017-18				
		2018-19				
		2019-20	Ongoing	118.05		
		Total	120.47			

Table 8.4: State -wise Completed and ongoing projects approved under RKVY in Fisheries Sector during 2015-16 to 2019-20 (Rs. in Crore)

	State	Fin Year	Project Status	Cost
17	MANIPUR	2015-16	Ongoing	
		2019-20	Ongoing	7.35
			Total	7.35
18	NAGALAND	2015-16	Ongoing	4.00
		2016-17	Ongoing	4.00
		2017-18	Ongoing	4.13
		2018-19	Ongoing	
		2019-20	Ongoing	3.00
			Total	12.13
18	ORISSA	2015-16	Completed	25.20
			Ongoing	25.44
		2016-17	Completed	18.5
			Ongoing	7.915
		2017-18	Completed	
			Ongoing	60.86
		2018-19	Ongoing	29.12
2019-20	Ongoing	22.95		
			Total	189.99
19	PUNJAB	2019-20	Ongoing	4.04
			Total	4.04
20	RAJASTHAN	2015-16	Ongoing	
		2016-17	Ongoing	
		2017-18	Ongoing	0.89
		2018-19	Ongoing	
		2019-20	Ongoing	2.71
			Total	3.6
22	TAMILNADU	2015-16	Completed	9.3
			Ongoing	5.914
		2016-17	Completed	33.50
			Ongoing	12.47
		2017-18	Completed	7.80
			Ongoing	8.15
		2018-19	Completed	2
Ongoing	18.27			
2019-20	Ongoing	32.81		
			Total	130.23

Table 8.4: State -wise Completed and ongoing projects approved under RKVY in Fisheries Sector during 2015-16 to 2019-20 (Rs. in Crore)

	State	Fin Year	Project Status	Cost
23	TELANGANA	2015-16	Completed	
			Ongoing	3.66
		2016-17	Ongoing	2.62
			Ongoing	5.11
		2018-19	Ongoing	4.29
		2019-20	Ongoing	8.88
			Total	24.57
24	TRIPURA	2015-16	Completed	3.79
			Completed	1.73
		2017-18	Completed	3.31
			Ongoing	
		2018-19	Completed	
			Ongoing	5.3
2019-20	Ongoing	5.51		
			Total	19.64
25	UTTAR PRADESH	2015-16	Completed	
			Ongoing	7.67
		2016-17	Completed	
			Ongoing	21.18
		2017-18	Ongoing	24.37
		2018-19	Ongoing	
2019-20	Ongoing	0.97		
			Total	54.20
26	UTTARAKHAND	2015-16	Ongoing	
			Completed	
		2016-17	Ongoing	
			Completed	
		2017-18	Completed	
			Ongoing	3.24
2018-19	Ongoing			
2019-20	Ongoing	3.51		
			Total	6.75
27	WEST BENGAL	2015-16	Completed	27.49
			Ongoing	24.75
		2016-17	Completed	21.6
			Ongoing	41.61
		2017-18	Completed	0.57
			Ongoing	43.51
2018-19	Ongoing	37.70		
2019-20	Ongoing	23.85		
			Total	221.12
	All India		Grand Total	1513.94

Source: Rashtriya Krishi Vikas yojana - RKVY

Table 8.5: Details of fund released from NFDB during 2015-16 to 2019-20 for different development activities in states / UT's

S.N	State	2015-16	2016-17	2017-18	2018-19	2019-20
1	Andhra Pradesh	289.65	257.51	111.14	581.20	117.08
2	Arunachal Pradesh	0.00	0.00	1.95	3.66	44.81
3	Assam	927.76	121.21	258.78	119.93	197.53
4	Bihar	15.21	0.75	168.16	30.44	40.12
5	Chhattisgarh	98.06	24.37	13.70	76.35	50.44
6	Goa	25.00	3.10	1.95	0.00	0.00
8	Gujarat	0.35	1,212.36	12.68	145.29	3,912.35
9	Haryana	21.41	0.00	0.00	5.68	3.00
10	Himachal Pradesh	81.84	6.00	3.90	2.57	22.68
11	Jharkhand	214.12	1,313.45	14.63	106.61	0.00
12	Karnataka	479.13	87.30	70.51	240.21	47.60
13	Kerala	3,397.64	227.20	41.90	616.44	6.25
14	Madhya Pradesh	67.50	6.20	1.81	60.97	1,06.37
15	Maharashtra	726.40	344.29	52.72	766.80	12.75
17	Manipur	194.47	59.94	17.86	231.90	16.30
18	Meghalaya	37.10	38.99	45.34	9.69	10.80
19	Mizoram	148.88	25.28	1.95	26.69	26.18
20	Nagaland	53.97	52.48	0.00	5.28	15.60
21	Odisha	436.82	21.86	62.14	5.98	10.00
22	Punjab	48.59	2.76	10.93	6.60	0.00
23	Rajasthan	0.00	13.75	19.13	44.08	10.81
25	Sikkim	8.01	1.00	10.21	6.81	0.00
26	Tamil Nadu	1,071.45	107.09	641.53	444.70	178.18
27	Telangana	160.97	17.77	61.69	758.31	101.53
28	Tripura	166.42	179.61	91.02	63.55	25.71
29	Uttar Pradesh	559.09	43.70	48.18	31.48	6.25
30	Uttarakhand	13.81	0.10	1.95	0.00	0.67
31	West Bengal	73.11	384.59	80.09	517.50	222.13
32	Andaman & Nicobar	0.00	0.00	38.44	60.85	8.88
33	Delhi	0.00	0.00	22.62	43.25	0.00
34	J&K	118.53	11.14	46.89	14.00	37.49
35	Lakshadweep	42.25	0.00	0.00	4.53	2.50
36	Puducherry	27.66	0.80	0.00	0.65	0.00
	National Organization	0.00	611.87	1,955.74	3,108.73	2,344.08
	Admin Expenses	779.09	0.00	0.00	0.00	830.79
	Total	10,284.29	5,176.47	3,909.53	8,140.73	8,408.88

Source: NFDB

Fig 38 : Expenditure on Fisheries Development form NFDB(Rs. in Lakh)

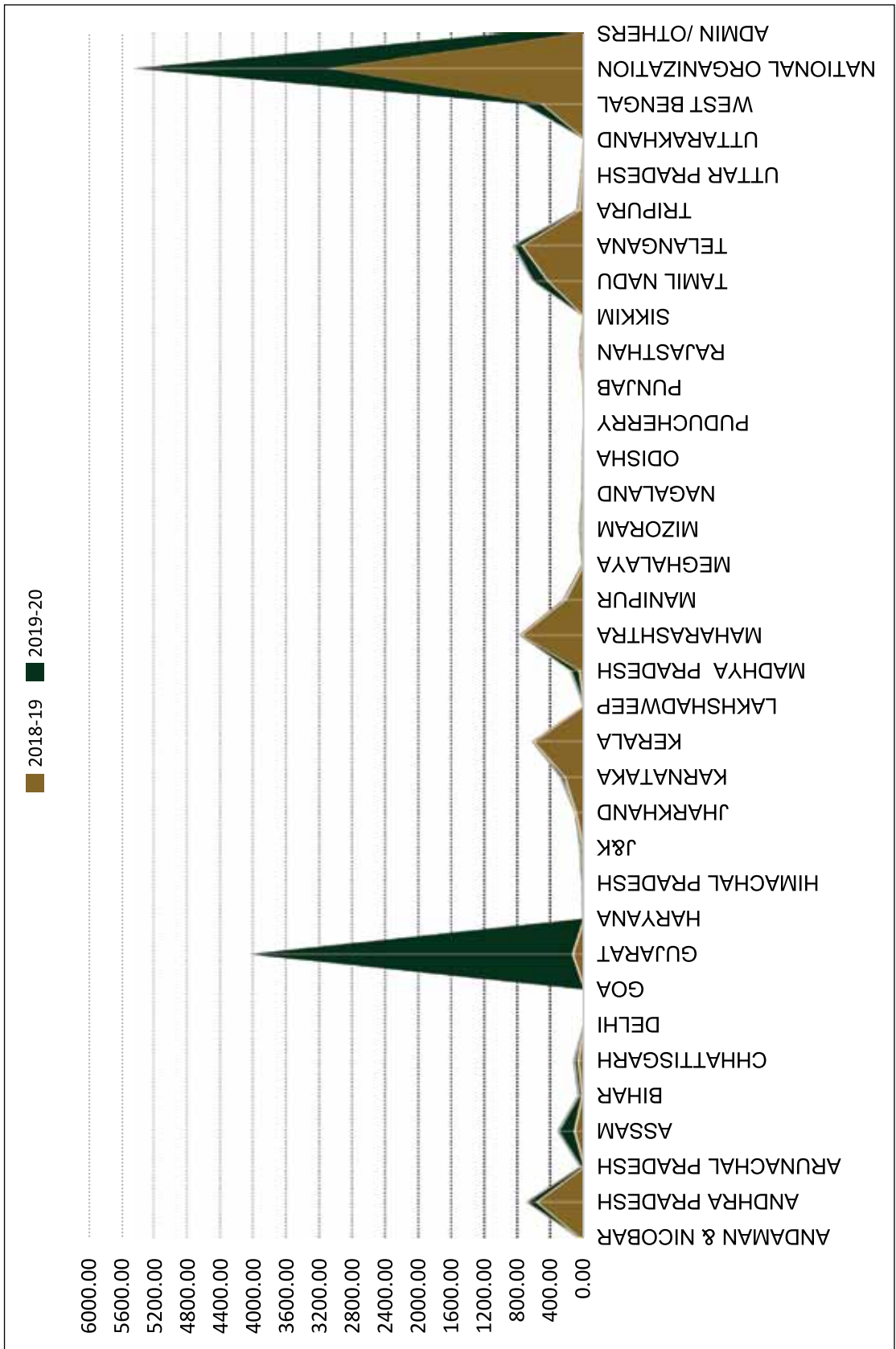


Table 8.6: Year-wise total Fund Released for Development of Fisheries Sector (Rs in Lakhs)

State/UT's	2015-16			2016-17			2017-18		
	State Share Fund Released	Central Share Fund Released	Total fund release for development of Fisheries Sector	State Share Fund Released	Central Share Fund Released	Total fund release for development of Fisheries Sector	State Share Fund Released	Central Share Fund Released	Total fund release for development of Fisheries Sector
Andhra Pradesh	487.5	487.5	975	283	1,742	2,025	3,284.43	2,162.82	5,447.25
Arunachal Pradesh	0	0	0	0	0	0	0	0	0.00
Assam	548.25	1,259.88	1808.13	1,900.92	888.01	2788.93	817.97	3,074.93	3,892.90
Bihar	0	90	90	0	1,948.04	1948.04	0	2.25	2.25
Chhattisgarh	2,908.18	333.45	3241.63	3,099.04	2,230.77	5329.81	4,262.98	2,121.28	6,384.26
Goa	5,009.65	70.82	5080.47	3,035.06	326.44	3361.5	4,550.32	251.49	4,801.81
Gujarat	0	0	0	0	0	0	0	0	0.00
Haryana	186.25	291.25	477.5	292	1,122.05	1414.05	357.14	2,862.50	3,219.64
Himachal Pradesh	0	0	0	0	0	0	0	0	0.00
Jharkhand	5,035.62	390.04	5425.66	10,451.47	2,304.72	12756.19	9,426.57	1,686.40	11,112.97
Karnataka	11,736.16	7,478.10	19214.26	25,372.06	5,348.99	30721.05	30,420.81	4,216	34,636.81
Kerala	32,695	8,200	40895	35,128	5,714	40842	41,578	2,188	43,766.00
Madhya Pradesh	2,689.53	329.13	3018.66	2,743.79	229.55	2973.34	1,752.26	2,114.51	3,866.77
Maharashtra	53.11	24.55	77.66	57.5	32.45	89.95	347.94	617.85	965.79
Manipur	0	20	20	0	44	44	65.14	456.14	521.28
Meghalaya	0	0	0	0	0	0	0	0	0.00
Mizoram	125	820.18	945.18	239.87	1,344.05	1583.92	0	164.39	164.39
Nagaland	0	0	0	102.5	410	512.5	102.5	410	512.50
Odisha	7,518.76	668.88	8187.64	8,092.27	1,472.74	9565.01	8,939.95	1,801.43	10,741.38
Punjab	0	0	0	0	0	0	0	0	0.00
Rajasthan	0	0	0	0	262.1	262.1	137	83.28	220.28
Sikkim	0	0	0	2.3	379.16	381.46	0	0	0.00
Tamil Nadu	23,075.47	8,573.02	31648.49	21,464.17	7,120.47	28584.64	24,675.93	12,010.99	36,686.92
Telangana	0	0	0	0	0	0	0	0	0.00
Tripura	0	0	0	217	867.88	1084.88	37.99	341.92	379.91
Uttar Pradesh	334.46	400	734.46	250.4	1,760.85	2011.25	1,224.67	0	1,224.67
Uttarakhand	0	0	0	182.13	977.41	1,159.54	51.93	746.56	798.49
West Bengal	0	0	0	0	0	0	0	0	0.00
A and N Islands	0	15	15	0	54	54	0	179.88	179.88
Daman and Diu D & Nagar Haveli	0	0	0	0	0	0	0	0	0.00
Delhi	0	0	0	0	0	0	0	0	0.00
Jammu & Kashmir	8.28	2	10.28	107	1,163.50	1270.5	90.45	706.46	796.91
Lakshadweep	515	30	545	650	0	650	559	53.56	612.56
Puducherry	0	1,002.20	1002.2	0	29.75	29.75	0	0	0.00
All India	92,926.22	30,486.00	123,412.22	113,670.48	37,772.93	151,443.41	132,682.98	38,252.64	170,935.62

Source: States Government / UTs Administration

Table 8.6: Year-wise total Fund Released for Development of Fisheries Sector (In lakhs)						
State/UT's	2018-19			2019-20		
	State Share Fund Re-leased	Central Share Fund Released	Total fund release for development of Fisheries Sector	State Share Fund Re-leased	Central Share Fund Released	Total fund release for development of Fisheries Sector
Andhra Pradesh	402.25	1,302.31	1,704.56	2,360	2,556	4,916.00
Arunachal Pradesh	81.18	374.68	455.86	0	24.77	24.77
Assam	157.6	524.14	681.74	0	280.01	280.01
Bihar	0	4,078.69	4,078.69	0	1,557.15	1,557.15
Chhattisgarh	1,431.60	1,045.69	2,477.29	905.58	3,292.90	4,198.48
Goa	0	63.82	63.82	0	0	0.00
Gujarat	689.18	1,420.80	2,109.98	3,680	1000	4,680.00
Haryana		605.9	605.90	0	696.47	696.47
Himachal Pradesh	203.05	1,046.13	1,249.18	40.84	629.14	669.98
Jharkhand	200	925.4	1,125.40	1,062.39	0	1,062.39
Karnataka	1,035.86	5,847.28	6,883.14	450	2,330.61	2,780.61
Kerala	3,677.54	5,093.01	8,770.55	3,517.80	9,357.15	12,874.95
Madhya Pradesh	540	711.39	1,251.39	600	1,859.47	2,459.47
Maharashtra	1,641.81	2,861.17	4,502.98	997.102	1000	1,997.10
Manipur	83.74	382.13	465.87	0	50.68	50.68
Meghalaya	293	2,598.95	2,891.95	262.65	2,387.45	2,650.10
Mizoram	22.62	403.75	426.37	0	735.99	735.99
Nagaland	0	194.67	194.67	24.52	2,396.15	2,420.67
Odisha	1,725.19	1,022.13	2,747.32	471.68	543.68	1,015.36
Punjab	72.68	581.34	654.02	0	2,063.76	2,063.76
Rajasthan	0	70.2	70.20	176.17	266.2	442.37
Sikkim	0	416.52	416.52	0	1,019.65	1,019.65
Tamil Nadu	9,638.38	7,155.91	16,794.29	0	1,801	1,801.00
Telangana	0	1,574.80	1,574.80	0	154	154.00
Tripura	42.155	2,004.18	2,046.34	35.3	788.91	824.21
Uttar Pradesh	1,080.51	3,050.06	4,130.57	0	3,816.63	3,816.63
Uttarakhand	53.01	471.08	524.09	0	683.67	683.67
West Bengal		185.4	185.40	0	0	0.00
A and N Islands	0	1,045.69	1,045.69	0	51.21	51.21
Daman and Diu D&Nagar Haveli	0	0	0.00	0	0	0.00
Delhi	0	0	0.00	0	0	0.00
Jammu & Kashmir	0	439.54	439.54	60	788.63	848.63
Lakshadweep	0	39.89	39.89	0	29.3	29.30
Puducherry		1448	1,448.00	0	461.37	461.37
All India	23,071.35	48,984.65	72,056.00	14,644.03	42,621.95	57,265.98

Source: States Government / UTs Administration

CHAPTER 9

FISHERIES WELFARE



Fig 39 : Percentage of Houses approved for the states/UT's under the sub-component of Housing for Fishermen of the Blue Revolution Scheme

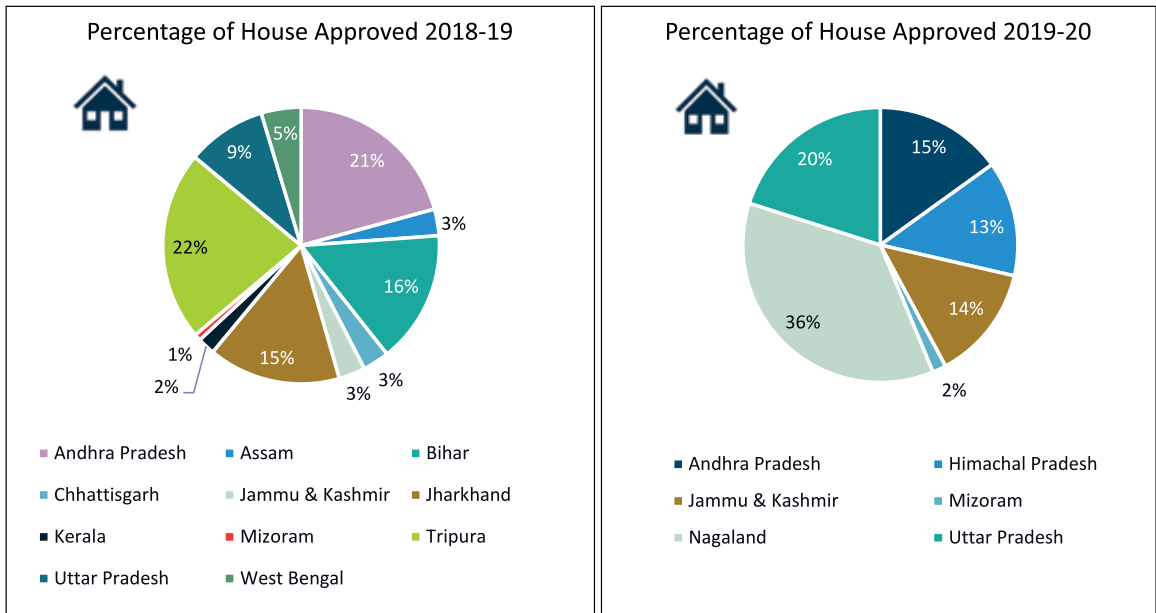


Fig 40 : States/UT's-wise amount released for the Construction of houses

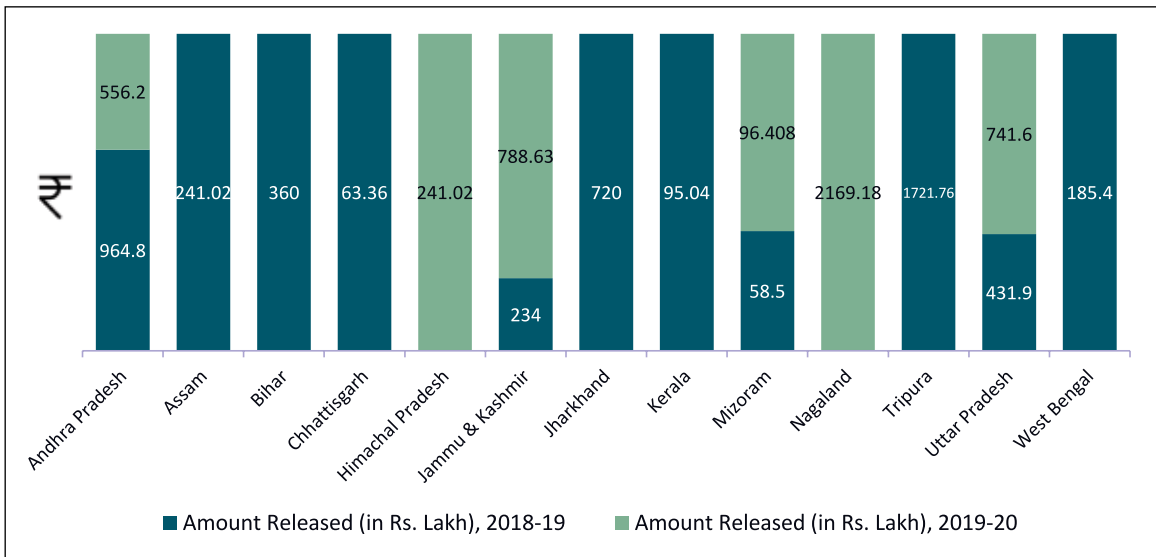


Table 9.1: State UT's-wise details of fishermen houses approved and amount (in Rs. Lakhs) releases under the sub-component of Housing for Fishermen of the Blue Revolution Scheme: 2015-16 to 2019-20

Name of the State/ UT	2015-16		2016-17		2017-18		2018-19		2019-20	
	Number of House Approved	Amount Released	Number of House Approved	Amount Re-leased	Number of House Approved	Amount Re-leased	Number of House Approved	Amount Released	Number of House Approved	Amount Released
Andhra Pradesh	1300	487.5	-	-	-	-	1340	964.8	750	556.2
Arunachal Pradesh	92	52	-	-	48	50.544	-	-	-	-
Assam	-	-	75	81.2	50	52.65	200	241.02	-	-
Bihar	-	-	-	-	-	-	1000	360	-	-
Chhattisgarh	400	150	-	-	-	-	200	63.36	-	-
Gujarat	100	36.37	100	60	-	-	-	-	-	-
Himachal Pradesh	133	49.88	-	-	-	-	-	-	200	241.02
Jharkhand	1000	375	417	250.2	-	-	1000	720	-	-
Kerala	-	-	167	100.2	-	-	132	95.04	-	-
Madhya Pradesh	195	72.75	167	100	-	-	-	-	-	-
Maharashtra	-	-	65	39	-	-	-	-	-	-
Manipur	-	-	-	-	34	31.82	-	-	-	-
Mizoram	200	121	200	120.5	43	45.28	50	58.5	80	96.408
Nagaland	270	161	-	-	-	-	-	-	1800	2169.18
Rajasthan	-	-	20	24	-	-	-	-	-	-
Telangana	-	-	-	-	-	-	-	-	-	-
Tripura	250	139.54	-	-	140	117.6	1434	1721.76	-	-
Uttar Pradesh	327	122.63	666	399.6	313	-	600	431.9	1000	741.6
Uttarakhand	-	-	-	-	-	-	-	-	-	-
West Bengal	309	115.69	-	-	122	79.056	300	185.4	-	-
A & N Islands	100	74	-	-	-	-	-	-	-	-
Jammu & Kashmir	133	49.88	-	-	200	210.6	200	234	674	788.63
Total	4809	2,007.24	1877	1,174.70	950	587.55	6456	5,075.78	4504	4593.04

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

Fig 41 : State-wise details of fishermen insured under the sub-component of Group Accident Insurance of the Blue Revolution Scheme

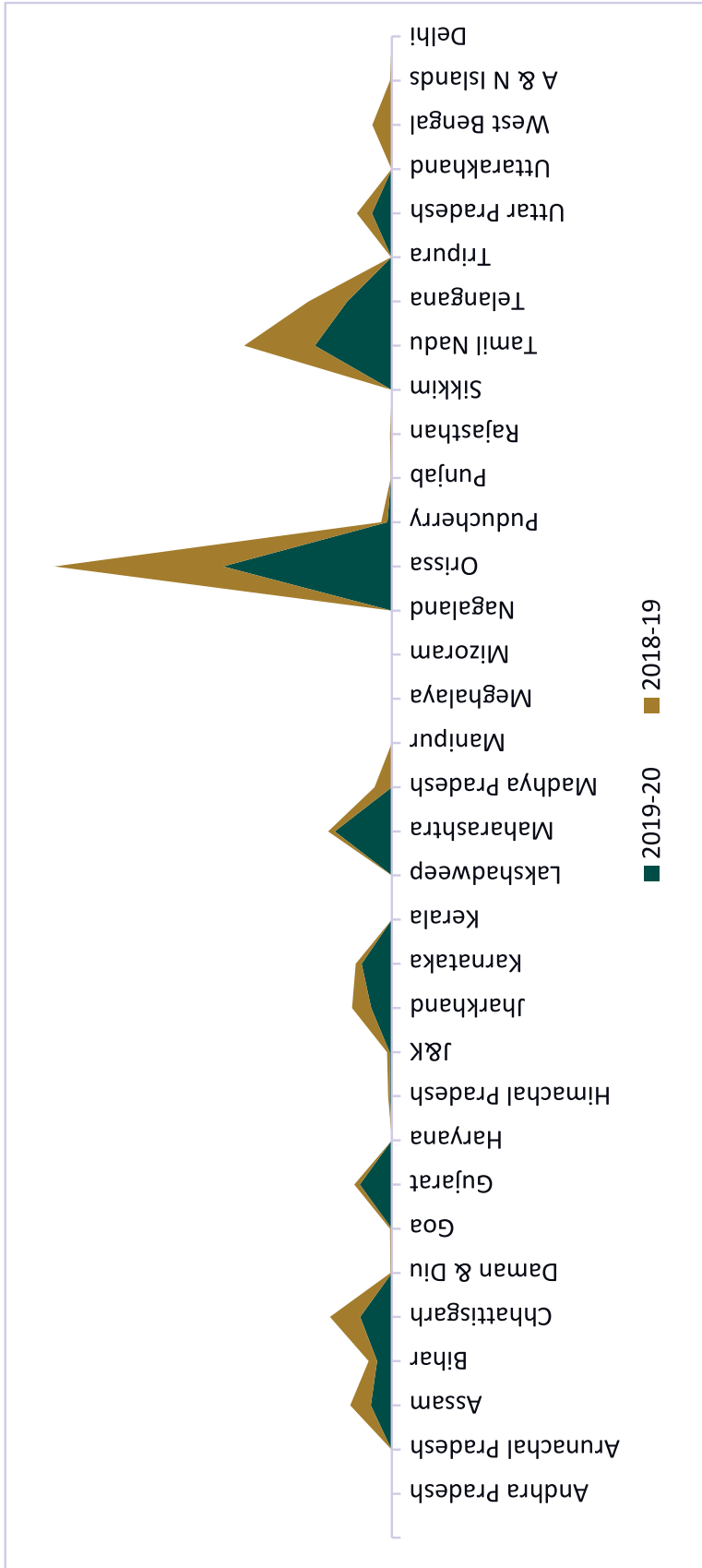


Table 9.2: State-wise details of fishermen insured under the sub-component of Group Accident Insurance of the Blue Revolution Scheme : 2015-16 to 2019-20

State/UT	2015-16	2016-17	2017-18	2018-19	2019-20
Andhra Pradesh	404,242	405,347	0	0	0
Arunachal Pradesh	10,000	7000	1,000	1,027	1,027
Assam	164,939	157,325	157,325	139,739	142,716
Bihar	300,000	300,000	300,000	58,277	100,000
Chhattisgarh	210,000	210,000	210,000	205,897	214,552
Goa	12,721	11,849	11,840	11,840	
Gujarat	218,270	218,270	218,270	37,856	218,270
Haryana	0	0	0	0	0
Himachal Pradesh	12,153	12,901	13,413	12,650	12,650
Jharkhand	114,500	126,000	126,000	131,451	140,000
Karnataka	204,689	204,689	204,689	40,641	204,689
Kerala	237,501	0	0	0	0
Madhya Pradesh	175,199	180,988	184,933	116,941	
Maharashtra	323,838	323,838	323,838	46,900	388,038
Manipur	12,000	12,000	1,000	0	0
Meghalaya	0	0	0	0	0
Mizoram	10,000	10,000	1,000	1,187	0
Nagaland	0	0	0	0	0
Orissa	1,111,111	1,150,000	1,150,000	1,150,000	1,150,000
Punjab	1500	5000	5,000	3,416	3,500
Rajasthan	10,833	11,027	11,220	11,220	2,122
Sikkim	7000	7000	1000	411	
Tamil Nadu	716,308	666,380	666,380	481,386	524,054
Telangana	276,799	326,154	326,154	265,236	303,000
Tripura	1000	1000	1,000	2,072	2,600
Uttar Pradesh	193,000	193,000	193,000	103,333	134,014
Uttarakhand	2000	2000	1,000	1,324	0
West Bengal	221,563	0	0	132,995	0
A & N Islands	14,839	14,839	14,839	13,296	0
Daman & Diu	9500	9,500	9,500	9,266	0
Delhi	0	0	400	103	200
J&K	15,000	15,000	15,000	15,961	15,402
Lakshadweep	12,052	12,052	12,052	1,204	0
Puducherry	54,367	54,367	54,367	43,745	29,887
All India	5,056,924	4,647,526	4,214,220	3,039,374	3,586,721

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

Fig 42 : State-wise details of relief assistance provided to fishermen and financial releases made under the sub-component of Saving-cum-Relief (SCR) of the Blue Revolution Scheme during 2019-20 and 2018-19

	Chhattisgarh	Himachal Pradesh	Madhya Pradesh	Mizoram	Puducherry	Karnataka	Kerala
No. of Fishermen 2019-20	7,740	3,710	12,318	6,283	15,379	35,757	6,80,250
Amount Released (in Lakh) 2019-20	116.09	59.36	184.77	150.79	461.37	536.36	8007.15
	Chhattisgarh	Himachal Pradesh	Madhya Pradesh	Mizoram	Puducherry	Karnataka	
No. of Fishermen 2018-19	8,500	2,696	15,100	5,355	37,488	1,395	
Amount Released (in Lakh) 2018-19	127.5	43.46	226.5	128.52	855.58	33.59	
	2015-16	2016-17	2017-18	2018-19	2019-20		
Total No. of Fishermen	4,43,493	44,351	65,590	70,534	7,65,194		
Total Amount Released In Lakhs	3,126.59	727.33	1,120.99	1,415.15	9,566.77		

Table 9.3: State-wise details of relief assistance provided to fishermen and financial releases made under the sub-component of Saving-cum-Relief (SCR) of the Blue Revolution Scheme during 2019-20

State/UT	2015-16		2016-17		2017-18		2018-19		2019-20	
	No. of Fishermen	Amount Released	No. of Fishermen	Amount Released	No. of Fishermen	Amount Released	No. of Fishermen	Amount Released	No. of Fishermen	Amount Released
		(in Lakh)		(in .Lakh)		(in Lakh)		(in lakh)		(in lakh)
Bihar	10,000	90	-	-	-	-	-	-	-	-
Chhattisgarh	8,000	72	6,665	100	6,666	100	8,500	127.5	7740	116.09
Goa	5,197	45.82	5,416	48.74	-	-	-	-	-	-
Himachal Pradesh	4,641	27.85	5,092	81.47	3,850	61.2	2,696	43.46	3710	59.36
Karnataka	39,048	390.45	-	-	34,239	462.23	-	-	35757	536.36
Kerala	1,97,058	1182.34	-	-	-	-	-	-	680250	8007.15
Maharashtra	-	-	2,000	30	-	-	-	-	-	-
Madhya Pradesh	16,143	122.6	6,667	100	10,000	135	15,100	226.5	12318	184.77
Mizoram	-	-	-	-	-	-	5,355	128.52	6283	150.79
Nagaland	-	-	-	-	-	-	-	-	-	-
Odisha	25,110	200.35	-	-	10,000	198.17	-	-	3757	50.883
Puducherry	27,691	332.29	17,833	361	-	150	37,488	855.58	15379	461.37
Rajasthan	1,451	6.13	678	6.12	-	-	-	-	-	-
Tamil Nadu	1,08,031	647.07	-	-	-	-	-	-	-	-
Telangana	1,123	9.69	-	-	-	-	-	-	-	-
Tripura	-	-	-	-	835	14.39	1,395	33.59	-	-
Total	4,43,493	3,126.59	44,351	727.33	65,590	1120.99	70,534	1,415.15	765,194	9,566.77

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

CHAPTER 10

HUMAN RESOURCE DEVELOPMENT



Table 10.1: Training Achievement of NFDB during FY 2019-20

State	Yr of Re-leased	Organisation	Activity	Duration of training (no. of days)	No. of trainees	Amount Re-leased (Rs. In lakh)
Andhra Pradesh	2019-20	CoF, Andhra Pradesh	SDP	3	1000	20.00
Andhra Pradesh	2019-20	KVK, YSRHU	SDP	3	150	4.00
Andhra Pradesh	2019-20	FRS, Undi	SDP	3	250	6.25
Andhra Pradesh	2019-20	APSSDC	SDP	3	660	12.50
Arunachal Pradesh	2019-20	DoF, Arunachal Pradesh	SDP	3	200	5.25
Assam	2019-20	DoF, Assam	SDP	3	350	8.00
Assam	2019-20	Assam Agricultural University, Assam	SDP	3	150	3.75
Chattisgarh	2019-20	DoF, Chattisgarh	SDP	3	400	5.00
Chattisgarh	2019-20	KVK, Raipur	SDP	3	100	1.95
Haryana	2019-20	DoF, Haryana	SDP	3	150	3.75
Himachal Pradesh	2019-20	DoF, Himachal Pradesh	SDP	3	250	6.25
Jammu Kashmir	2019-20	DoF, Jammu Kashmir	SDP	3	100	2.50
Kerala	2019-20	DoF, Kerala	SDP	3	250	6.25
Lakshdweep	2019-20	DoF, Lakshdweep	SDP	3	100	2.50
Maharashtra	2019-20	DoF, Maharashtra	SDP	3	400	7.50
Maharashtra	2019-20	KVK, Baramathi	SDP	3	250	3.00
Maharashtra	2019-20	KVK, Baramathi	Workshop	1	800	2.00
Maharashtra	2019-20	VAMNICOM	Special SDP	3	200	5.25
Manipur	2019-20	DoF, Manipur	SDP	3	200	5.00
Manipur	2019-20	KVK, NEH Manipur	SDP	3	300	7.50
Mizoram	2019-20	ZOFISHFED, Mizoram	SDP	3	400	10.00
Mizoram	2019-20	Chakma DC, Mizoram	SDP	3	237	7.18
Nagaland	2019-20	DoF, Nagaland	SDP	3	300	7.50
National Organisation	2019-20	FISHCOPFED, New Delhi	Workshop	1	1500	33.00
National Organization	2019-20	ICAR-CIFA	SDP	3	700	17.50
National Organization	2019-20	ICAR-CIFRI	SDP	3	600	15.00
National Organization	2019-20	CSIR-CSMCRI, Gujarat	SDP	3	300	11.09
National Organization	2019-20	NBFGR, Lucknow	SDP	3	140	3.53
National Organization	2019-20	ICAR-CIFA	ToT	5	175	14.00
National Organization	2019-20	ICAR-CIFE	ToT	5	50	4.00
National Organization	2019-20	CIFNET, Kerala	ToT	5	50	4.00
National Organization	2019-20	ICAR-CIFRI	ToT	5	175	14.00
National Organization	2019-20	ICAR-CIFT	ToT	5	50	4.00
National Organization	2019-20	CSIR-CSMCRI	ToT	5	125	8.15

Table 10.1: Training Achievement of NFDB during FY 2019-20

State	Yr of Re-leased	Organisation	Activity	Duration of training (no. of days)	No. of trainees	Amount Re-leased (Rs. In lakh)
National Organization	2019-20	ICAR-DCFR	ToT	5	75	6.00
National Organization	2019-20	NBFGR, Lucknow	ToT	5	50	4.00
National Organization	2019-20	CIFNET, Kerala	Special SDP	12	118	15.58
National Organization	2019-20	MPEDA-NETFISH	1-day work-shop	1	600	16.80
National Organization	2019-20	MPEDA-NETFISH	1-day work-shop	1	600	2.60
National Organization	2019-20	NFFBB, Bhubaneswar	1-day work-shop	1	260	1.00
National Organization	2019-20	MANAGE, Hyderabad	AC & ADP	30	478	100.00
Odisha	2019-20	Kailash Fisheries Aquatics	SDP	3	400	10.00
Punjab	2019-20	DoF, Punjab	SDP	3	250	6.25
Rajasthan	2019-20	DoF, Rajasthan	SDP	3	550	4.96
Telangana	2019-20	KVK, Bellampally	SDP	3	100	2.50
Telangana	2019-20	KVK, Rudrur	SDP	3	150	3.75
Telangana	2019-20	KVK, Kampasagar	SDP	3	300	6.25
Telangana	2019-20	FRS, Palair	SDP	3	250	10.00
Telangana	2019-20	FRS, Palair	Special SDP	28	25	6.00
Tripura	2019-20	DoF, Tripura	SDP	3	575	14.38
Tripura	2019-20	Rudrasagar, Tripura	SDP	3	150	2.75
Uttar Pradesh	2019-20	DoF, Uttar Pradesh	SDP	3	250	6.25
West Bengal	2019-20	KVK, Shyasyasamala	SDP	3	200	5.00
West Bengal	2019-20	KVK, Dhanyaganga	SDP	3	600	17.50
West Bengal	2019-20	WBUAFS	SDP	3	300	7.50
West Bengal	2019-20	WAB Ramnagar	SDP	3	100	2.50

Source : National Fisheries Development Board, Hyderabad (NFDB)

Table 10.2: Training courses conducted at CIFNET

S. No.	Course	Duration
1	BFSc (Nautical Science) (Affiliated to CUSAT)	4 years
2	Vessel Navigator Course (NCVT)	2 years
3	Marine Fitter Course (NCVT)	2 years
4	Shore Mechanic Course	1 year
5	Elementary Fishing Technology Course(Statutory course)	2 months
6	Advanced Fishing technology Course (Statutory course)	2 weeks
7	Fishing technology for Coast guard officers	1 week
8	Teachers training course	6 months
9	Advanced Diploma in Fishing Gear Technology Course	1 year
10	Short term courses on Fishery Technology, Marine Engineering, Refrigeration & Electronics, Nautical Science for fishermen, students of College and Vocational Higher secondary.	Tailor made
11	Special training course for National & Overseas candidates	Tailor made

Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)
 CUSAT – Cochin University of Science and Technology
 NCVT – National Council of Vocational Training

Table 10.3: Achievements on Training activities of CIFNET

Parameters	2018-19			2019-20		
	Target	Actual	% Achievement	Target	Actual	% Achievement
No. of students undergoing Degree Course- BFSc(NS)	110	98	89	124	111	90
No. of students undergoing Trade Courses-VNC/ MFC	192	180	94	216	226	105
Ancillary Course (Shore Mechanics Course)	10	0	0	10	8	80
Statutory & Refresher Course (AFTC,EFTC)	10	1	10	10	4	40
Short term Courses (Fishermen training, Extension training, Training for officials and students)	1300	1637	126	1300	1388	107
TOTAL	1622	1916	118	1660	1737	105

Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)
 VNC – Vessel Navigator Course
 MFC – Marine Fitter Course
 AFTC – Advanced Fishing Technology Course
 EFTC – Elementary Fishing Technology Course

Table 10.4: Achievements on Fishing vessel Performance by CIFNET

Parameters	2018-19			2019-20		
	Target	Actual	% Achievement	Target	Actual	% Achievement
Days out at sea	400	462	116	400	462	116
Fishing Days	300	349	116	300	345	115
Fishing Effort (hrs)	1100	1200	109	1100	1153	105
Fishing Effort (Hooks)	5000	4645	93	5000	5089	102
Catch	15	17.5	117	15	12.2	81
Institutional trainee Days	3000	3453	115	3000	2556	85
Post institutional trainee days	3500	3874	111	3500	3630	104

Source: Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)

Table 10.5: Year-wise CIFNET Action Plan Training Target

S. No	Parameters	Target 2020-21	2021-22	2022-23	2023-24	2024-25	Remarks
I. Target for Institution Training Programmes							
1	No. of students in Core course – BFSc (NS) (4 years)	142 (33+33+36+40)	149 (33+36+40+40)	156 (36+40+40+40)	160 (4 x 40)	160 (4 x 40)	Intake capacity from 22/year has been increased to 40/year.
2	No. of students in Trade courses – VNC/MFC (2 years)	240	240	240	240	240 (2x2x3x20)	Intake capacity from 16/year has been increased to 20/year.
3	Ancillary Course (Shore Mechanics Course)	10	10	10	15	15	As per the actual demand
4	Statutory & Refresher Course	10	10	10	10	10	As per the actual demand
II. Target for Other Training Programmes							
1	Short Term training courses (STC)	1000	1400	1400	1600	1800	Higher target from 2023-24 is planned expecting the building of new Vessels
	a. Fishermen training (in house) under PMMSY						
	b. Fishermen Extension training under PMMSY						
	c. STC for professionals (Coast Guard, Fisheries officials)						
	d. Professional students/VHSS						

Source: Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)

Table 10.6: CIFNET Action Plan – Vessel Operational Target

S. No	Parameters	Target 2020-2021	2021-22	2022-23	2023-24	2024-25	REMARKS
III. Target for fishery training vessels							
1	Days out at sea	350	350	350	600	600	Higher target from 2023-24 is planned expecting the building of new Vessels
2	Fishing Days	275	275	275	450	450	
3	Fishing Effort(hrs)	1000	1000	1000	1800	1800	
4	Fishing Effort(Hooks)	4000	4000	4000	20000	20000	
5	Catch (T)	12	12	12	20	20	
6	Institutional trainee Days	2500	2500	2500	4800	4800	
7	Post Institutional trainee days	2750	2750	2750	4200	4200	
IV. Target for Finance							
	Revenue of the Institute (in lakhs)	65	65	65	100	100	

Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)

Table 10.7: CIFNET Skill Development/ Awareness Training Programme for Fishermen

S. No	Name of Course/Programme	Course Duration
1	Monofilament Long line and Tuna Handling onboard under capacity building training programme for fishermen	9 days (4 + 5)
2	Basic of Seamanship, Navigation, Marine Electronic equipments & maintenance of engines	5 days
3	Maintenance of boat engine & Fishing practice	3 days
4	Safety Manning practices	3 days
5	Basic of Seamanship, Navigation, Marine Electronic equipments	3 days
6	Life Saving Appliances and Safety at Sea	2 days
7	ROR and Collision Prevention for Fishing Vessel	3 days
8	Fishing vessel Communication and Vessel Monitoring System	2 days
9	Hygienic handling and preservation of catch on board Fishing Vessel	2 days
10	Engine operation and maintenance of fishing vessel	2 days
11	Navigation and Marine communication for coastal police	2 days
12	Power Distribution and Electrical Safety onboard Fishing Vessels	2 days
13	Evolution of Fishing Crafts and recent developments	1 day
14	Handling of Tuna for Sashimi Grade for Lakshadweep Fishermen	5 days

Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)

Table 10.8: Training of Trainers Programme under PMMSY at CIFNET

S. No	Name of ToT	Course Duration
1	Boat Building, Navigation and Communication Equipments	10 days
2	Safety Seamanship & Navigation, Marine Electronic Equipments and Marine Engines onboard fishing vessel	5 days
3	Fishing Technology Course	5 days
4	Life Saving & Fire Fighting Appliances and Electronic Equipments onboard fishing vessel	5 days
5	Safety Seamanship & Navigation, Handling of Electronic Equipments	3 days
6	Marine Engine Operation and Maintenance	3 days
7	Sea Safety, Survey and Certification of Fishing Vessels	3 days
8	Ocean Climate and Weather Warning System	3 days
9	Code of Conduct for Responsible Fishing (CCRF), Fishery Policy and Law	3 days

Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)

Table 10.9: Achievement of Central Institute of Fisheries Nautical and Engineering Training: 2019-20

S. No.	Name of the Course	Candidates trained	Continuing
1	BFSC (N.S.)	223	111
2	Vessel Navigator Course	376	114
3	Marine Fitter Course	453	112
4	Shore Mechanics Course (12 months)	316	8
5	Engineer (Fishing vessel) for D.M.E. (9 months)	20	
6	Gear Technicians Course (9 months)	144	
7	Short term Training Course (varying from 1 day to 8 weeks in different discipline) (Extension programmes, skill development, Coast Guards, State/central Govt., Fishermen, Boat operators, Coastal security marine police, BFSc, B.Sc/M.Sc students, B.Tech/M. Tech students)	11097	
8	Capacity Building on Tuna Long Lining for Fishermen sponsored by Tamil Nadu funded by NFDB	335	
9	Skill development programme for Fishermen & Fishery officials (ToT) sponsored by various state and funded by NFDB	182	
10	Short term training for Fishermen/Fishery Officials sponsored by various States (2014 onwards)	1918	
11	Overseas Candidates (including OJT for omani students)	160	
12	LOP crews on Deep sea fishing & Nagigation	14	
13	Advanced Diploma in Fishing Gear Technology Course (12 months)	26	
14	Boat Building Foremen Course (15 months) (outdated)	99	
15	Radio Telephone Operators Course (9 months) up to 2003 (outdated)	219	
16	Teacher Training Course (6 months)	32	
17	Post-institutional training (Junior Deckhand, Engine Room Assistant, Apprentice Fitter)	2013	21
	Courses Restructured - Mate Fishing Vessel (18 months) up to 2005	2067	
	Engine Driver Fishing vessel (18 months) up to 2005	2040	
	TOTAL CANDIDATES TRAINED (REGULAR AND SHORT TERM COURSES)	21734	366

Source: Central Institute of Fisheries, Nautical and Engineering Training, Kochi (CIFNET)

Table 10.10: Achievement of National Institute of Fisheries Post Harvest Technology and Training Project: 2018-19, 2019-20

Parameters	2018-2019		2019-2020	
	Physical Target	Achievement	Physical Target	Achievement
1. Fish Processed (Tonnes)	150.00	113.69	150.00	77.63
2. Product Developed (Tonnes)	100.00	116.12	100.00	86.05
3. Products Marketed (Tonnes)	-	40.58	-	37.35
4. Revenue realized from Marketing (Lakhs)	50000	21117	50000	11144
5. No. of Cans produced				
6. No. of trainees trained	100.00	109.49	100.00	100.97
7. No. of Trainee Days	100.00	124.02	100.00	110.51
8. Revenue Released from Training (₹ in Lakh)				
9. Revenue Released from all Sources (₹ in Lakh)	500.00	1424	500.00	1189
10. Expenditure -Plan (Rs. Core)	8000.00	14221	8000.00	10925
11. Expenditure-Non plan (Rs. Core)	4.00	8.56	4.00	6.35

Source : National Institute of Fisheries Post harvest Technology and Training (NIFPHATT)

Table 10.11: CICEF Marine Fisheries and Infrastructure Statistics

State/UT	coastline in Kms	Continental Shelf in Sq Kms	Deep Sea Vessels	Mechanised fishing vessels (MFVs)	Total	Number of Fishing harbours	Infrastructure Facilities available for MFVs
West Bengal	158	17,000	0	3,397	3,397	7	1,660
Odisha	480	26,000	0	1,876	1,876	6	2,450
Andhra Pradesh	974	33,227	0	1,867	1,867	8	3,155
Tamil Nadu	1,076	41,000	0	5,869	5,869	16	6,493
Puducherry	45	1,000	0	923	923	4	1,365
Kerala	590	40,000	51	6,034	6,085	21	5,014
Karnataka	300	27,000	0	4,614	4,614	9	4,866
Goa	104	10,000	0	2,564	2,564	4	895
Maharashtra	720	1,12,000	0	21,123	21,123	6	2,963
Gujarat	1,600	1,84,000	51	16,645	16,696	8	8,446
Daman & Diu and Dadar & Nagar Haveli	27	-	2	2,072	2,074	-	0
A & N Islands	1,912	35,000	0	117	117	1	47
Lakshadweep	132	4,000	0	49	49		0
Total	8,118	5,30,227	104	67,150	67,254	90	37,354

Source: Central Institute of Coastal Engineering for Fishery, Bengaluru (CICEF)

CHAPTER 11

FISHERIES INSTITUTES



NATIONAL FISHERIES DEVELOPMENT BOARD(NFDB)

1. History of the Institution

The National Fisheries Development Board (NFDB) was established in 2006 as an autonomous organization under the administrative control of the then Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare (now Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying), Govt. of India. The Board was set up to realize the untapped potential of fisheries sector in inland and marine, fish culture, capture, processing & marketing of fish, and accelerate the overall growth of fisheries sector with the application of modern tools of research & development. Since inception, NFDB has taken up numerous developmental activities which have improved the fish production, productivity and post-harvest & marketing facilities in the sector. Foreseeing the high potential in fishery sector, the Centrally Sponsored Scheme named as “Blue Revolution: Integrated Development and Management of Fisheries” was launched in the year 2016 with a total central outlay of Rs.3000 crore by merging all the existing schemes. In the changed scenario, NFDB is entrusted the work of scrutinizing the proposals received from the States/UTs under Blue Revolution Scheme. Besides, NFDB has been implementing some key projects directly in emerging new technologies like Cage Culture, Quality Fish Seed production of improved varieties, value chain development in fisheries etc. which have good potential. The successful implementation of these projects has resulted in wider adoption of new technologies by farmers.

2. Mandate of the Institution

- a) To bring major activities relating to fisheries and aquaculture for focused attention and professional management
- b) To coordinate activities pertaining to fisheries undertaken by different Ministries/Departments in the Central Government and also coordinate with the State/Union Territory Governments
- c) To improve production, processing, storage, transport and marketing of the products of capture and culture fisheries
- d) To achieve sustainable management and conservation of natural aquatic resources including the fish stocks
- e) To apply modern tools of research and development including biotechnology for optimizing production and productivity from fisheries
- f) To provide modern infrastructure mechanisms for fisheries and ensure their effective management and optimum utilization
- g) To generate substantial employment
- h) To train and empower women in the fisheries sector
- i) To enhance contribution of fish towards food and nutritional security.

3. Major Functions of Institution

- To focus on tapping the full production potential and enhance productivity substantially from aquaculture and fisheries resources, both in inland and marine sectors. It is targeted to achieve

the growth rate of above 10% annually on a sustainable basis over a period of 5 years and to achieve the projected fish production set at 22 million metric tonnes by 2022.

- To make Blue Revolution more robust and where it is appropriate, create an inclusive business approach to build value for aqua-farmers, together with a suitable enabling environment.
- Policy and institutional orientation of private and public sectors towards aqua-farmers.
- To achieve economic prosperity of the country, the fishers and fish farmers as well as contribute towards food and nutritional security through full potential utilization of water resources for fisheries development in a sustainable manner, keeping in view the bio-security and environmental concerns.

4. Major Initiatives & Achievements during the last 5 years

NFDB has taken up various initiatives to popularize new and innovative technologies emerging in the field so as to improve fish production & productivity in the country. NFDB has collaborated with various ICAR-Fisheries Research Institutes, CSIR-CSMCRI, RGCA-MPEDA, Central Agricultural Universities, State Fisheries Universities in demonstration of new & innovative technologies, popularization of new and improved fish varieties, upscaling the technologies for commercial production, species diversification, quality management, disease surveillance. NFDB has implemented various schemes to promote cage culture in reservoirs, disseminated new and improved technologies for fish varieties, wetland development, seaweed cultivation, ornamental fisheries, setting up of quarantine facilities, establishment of Aquatic Animal Health Laboratories, provide extension services through setting up Aqua One Centres through reputed organisations. After the launch of Blue Revolution scheme, NFDB has been specifically entrusted to take up the Skill Development programmes. The achievements made under various activities are elucidated below:

(i) Cage Culture

For integrated development of cage culture in reservoirs, a total of 3820 cages in various reservoirs were sanctioned in the States of Maharashtra, Madhya Pradesh, Gujarat, Bihar and Manipur.

For Demonstration of Open sea cage culture, a total of 270 cages were sanctioned to ICAR-CMFRI, Mandapam and Tamil Nadu Jayalalitha Fisheries University, Nagappatinam. For demonstration of brackishwater cage culture in the States of Kerala, Karnataka, Maharashtra and Andhra Pradesh, a total of 1570 cages were sanctioned to ICAR-CMFRI.

(ii) Dissemination of Improved and New Fish Varieties

NFDB under Quality Seed Programme has disseminated improved and new fish varieties (Jayanti Rohu, Improved Catla and Amur Carp) in collaboration with 34 nos. of KVKs and 13 nos. of Aqua One Center (AOC) firms covering an area of 1016 ha in 18 States namely Andhra Pradesh, Assam, Arunachal Pradesh, Bihar, Gujrat, Maharashtra, Manipur, Punjab, Uttar Pradesh, West Bengal, Rajasthan, Telangana, Odisha, Kerala, Tripura, Jharkhand, Tamil Nadu and Karnataka. Besides inputs for fish seed rearing units was provided in 159.79 ha.

(iii) Indian Major Carp Milt Cryo-bank for improving Genetic Exchange Between Farms and producing Commercial Level Quality Fish Seed

Basic facility for cryo-storage of carp milt on large scale has been established at ICAR-NBFGR, Lucknow. This includes Liquid Nitrogen Vapour Storage System (capacity: 8000 numbers of 2.0ml cryovial), Dry shippers for air transportation of cryomilt, 1000L Liquid Nitrogen Storage Tank (1 no.), 11L transportation can (40 nos).

Ten in-house training programs (hatchery operators/ progressive farmers from 21 states) at NBFGR, Lucknow and 13 fields training at 4 states (Odisha, West Bengal, Bihar and Uttar Pradesh) were

completed. Total 353 hatchery operators/prospective farmers were trained. The farmer level, easy to understand manual in English and Hindi is prepared and distributed to the trainees, in-house and on farm demonstrations

During the year 2019, for 13 hatcheries located at 4 states (Uttar Pradesh, Bihar, West Bengal and Odisha), the cryopreserved Indian major carp milt was supplied from ICAR-NBFGR, Lucknow and fertility trials were conducted using eggs from the female IMC brooders of hatchery origin with milt from the Bureau. A total of 37.2 lakh spawn was produced using frozen sperm under this demo.

(iv) Wetland Fisheries Development

NFDB initiated Wetland Development Programs in 2017-18 on a pilot basis in collaboration with ICAR-Central Inland Fisheries Research Institute (CIFRI), Barrackpore for development of 4 beels in Bihar namely Majharia, Kararia, Sirsa and Rulhi having a total water spread area of 390 ha. Another 4 beels were added in 2018-19 for upscaling the programme comprising of Kothia beel of 60 ha area in Bihar through ICAR-CIFRI, Rupaibali beel of 92 ha in Assam through Assam Fisheries Development Corporation (AFDC) and Nalban & Goltala beels of 275 ha in West Bengal through State Fisheries Development Corporation (SFDC), and the work is continuing.

(v) Seaweed Cultivation

Seaweed cultivation is considered as one of the priority areas for fisheries development in India, for the benefit of coastal fisher folk, especially the fisherwomen.

NFDB has sanctioned a project to CSMCRI, Bhavnagar on Demonstration of large-scale cultivation of *Gracilaria dura* along Simar coast of Gujarat by 162 farmers in 400 tube nets/longlines of 25m length. Demonstration was done in five phases. A manual entitled 'Handbook on Farming of *Gracilaria dura*' was published in April, 2019.

In order to promote seaweed cultivation along the Ramanathapuram coast of Tamil Nadu, by using improved quality of seed material, NFDB has sanctioned a project to Department of Fisheries, Government of Tamil Nadu for sea weed cultivation of *G.edulis* and *Kappaphycus alvarezii* on 2400 rafts and 4400 rafts respectively by 170 SHG groups (510 fisherwomen). Two projects were sanctioned to CSMCRI, Mandapam for production and supply of seed material of *G.edulis* and *Kappaphycus alvarezii*, to the seaweed farmers of the above project.

(vi) Backyard RAS for Fish Culture: Innovative Project on High Density Fish Culture under RAS Mode

NFDB in collaboration of National Centre for Aquatic Animal Health, Cochin University of Science and Technology implemented a project on backyard Re-circulatory Aquaculture System. A total of 77 nos. of Backyard RAS units were set up by 51 beneficiaries, mostly women in Kerala. Further, 64 units were sanctioned to 34 beneficiaries in Telangana in the first phase. A demo unit of backyard RAS was set up at NFDB campus, Hyderabad.

(vii) Paddy cum Fish Culture

NFDB sanctioned Paddy-cum-Fish Culture projects as a livelihood project on pilot basis in Manipur and Arunachal Pradesh during 2018-19 under the technical guidance of the State Fisheries Departments. The project not only help in increasing the paddy yield, but also contribute greatly towards nutritional security and economic upliftment. The project act as a demonstration and encourage other farmers in the village and the neighbouring villages to take up similar activities.

(viii) National Surveillance Programme for Aquatic Animal Diseases (NSPAAD)

The objectives under this projects are to (i) improve the collection of information on the distribution and occurrence of aquatic animal diseases, (ii) Rapid Detection of new and emerging pathogens and

(iii) implementataion of national information management system for aquatic animal diseases of national concern.

A National Aquatic Animal Diseases Diagnostic Manual has been published on behalf of DoF under NSPAAD. This contains information on all the prioritized diseases including 22 finfish, 13 crustaceans and 6 molluscan diseases. For strengthening the passive surveillance system in the country, a total of 518 awareness programmes have been organized involving about 26104 stakeholders. A total of 67 trainings involving 1591 officers /research scholars have been organized to strengthen their diagnostic capability. To observe the occurrence of endemic pathogens, a total of 1780 disease cases have been investigated by different collaborating centres. About 2000 farms located in 151 districts have been monitored twice per crop. Seven new/emerging diseases have been reported for the first time from the country. *These are* (i) Goldfish haematopoietic necrosis disease, (ii) Koi sleepy disease, (iii) Infectious myonecrosis, (iv) Tilapia Lake Virus Disease (v) Infection with *Enterocytozoon hepatopenaei*, (vi) Epitheliocystis and (vii) Red sea bream Iridovirus disease. Besides, Infection with *Perkinsus olsenii* has been detected in a new host i.e. farmed *Perna viridis*

The programme has been successful in developing a strong network of aquatic animal health laboratories and scientific manpower with basic skills in surveillance and aquatic animal epidemiology tools. The programme has resulted in significant improvement in diagnostic capability for detection of OIE/NACA-listed and emerging aquatic animal pathogens. NSPAAD has assisted in better understanding of disease situation in aquatic animals in the country and has reached to the stage where it can identify diseases that are present in the country and those that are absent.

(ix) Human Resource Development (HRD)

NFDB has collaborated with various Central Fisheries Research Institutes, other Central Organisations, State Fisheries Universities and KVKs for imparting training to fishers, fish farmers, women, State Fisheries Departmental officials on various aspects of fisheries. Various types of training programmes such as 3-day skill development programmes, 5-day Training of Trainer (ToT) programmes, 25 day long duration programmes as per QPs prescribed by ASCI, Deep sea fishing programmes, workshops, RPL programmes, one day awareness programmes on avoiding usage of antibiotics in shrimp farmers etc were funded by NFDB. On an average, about 19800 fishers/ fish farmers including Departmental officials were trained on various aspects such as fish seed production, composite fish culture, RAS, brackishwater aquaculture, Deep sea fishing, ornamental fisheries, seaweed cultivation etc.

(x) Development of Integrated “Fish Market and Price Information System (FMPIS)” For Indian Fisheries Sector

Fish Market Price Information System (FMPIS) has been initiated by NFDB to promote trading of commercially important fish species across the country. FMPIS facilitates better marketability (fisher/ seller) and accessibility (consumer/buyer) of fish. The FMPIS Dashboard has been inaugurated by the Hon’ble Union Minister for Fisheries, Animal Husbandry & Dairying at NFDB, Hyderabad on 7th September, 2019. The Phase-I of the programme is covering 84 Fish Markets in seven States namely Telangana, Maharashtra, Andhra Pradesh, Kerala, Tamil Nadu and Puducherry.

(xi) Aquatic Quarantine Facility:

Aquatic Quarantine Facility at Chennai, the first of its kind in the country, is funded by NFDB and established by MPEDA-RGCA to ensure the SPF status of imported brood stock of shrimp *Litopenaeus vannamei*. Six additional cubicles are being constructed during the current year such that the cumulative capacity increases to accommodate 7,33,400 nos. of brood stock to support the growing demand of *L. vannamei* seed and ensure sustained development of shrimp aquaculture in the country.

(xii) Aquatic Animal Health Laboratories (AAHL):

NFDB has been setting up Aquatic Animal Health Laboratories (AAHLs) in strategic locations under both public and private sectors to provide effective disease diagnosis and pond health management support services to aqua farming community. NFDB has supported 12 Aquatic Animal Health Labs in 7 States namely Bihar, Andhra Pradesh, Tamil Nadu, Manipur, Assam, Tripura and Telangana; they will serve as focal centres for collecting and providing information on disease outbreaks to the National Surveillance Programme for Aquatic Animal Disease (NSPAAD) programme.

(xiii) Aquatic Animal Health & Quality Testing Laboratory (AAH&QTL):

As in other farming systems, diseases are a major threat causing severe economic losses. Often, fish farmers use banned antibiotics, pesticides and toxicants to control various types of diseases and also use some preservatives. These practices violate the 'Food Code' or 'Codex Alimentarius' and accumulation of their residues not only adversely impacts consumers' health but also results in rejection of export consignments.

To address this issue, NFDB established an in-house 'Aquatic Animal Health and Quality Testing Laboratory' (AAH&QTL) at Hyderabad to analyse and monitor the residues of aquaculture drugs, environment contaminants, etc. in shrimp, scampi, freshwater fish, hatchery seed and feed samples received from fish farmers, hatchery operators, processing industry, markets and other stakeholders and to provide molecular and microbiological diagnostic services to fish farmers following standards laboratory protocols.

(xiv) Indian Ocean Tuna Commission (IOTC) - 23rd Session

The 23rd Session of the Indian Ocean Tuna Commission (IOTC) was hosted by the Government of India, Ministry of Fisheries, Animal Husbandry & Dairying at Novotel Convention Centre Hotel, Hyderabad, India, from 17 to 21 June 2019. The 16th Session of the Compliance Committee, the 16th Session of the Standing Committee on Administration and Finance and the 3rd Session of the Technical Committee on Management Procedures were held in conjunction with the Commission Meeting from 9th to 16th June, 2019. The meetings were attended by delegates from 32 countries. The National Fisheries Development Board organised the above event.

(xv) Events/ Campaigns Organised by NFDB

a) National Fish Festival at Necklace Road, Hyderabad

A 3-day National Fish Food Festival was organized by the NFDB at People's Plaza, Necklace Road, Hyderabad from 7th to 9th June, 2019. Different varieties of fish, shrimp, crab, squids and snail dishes were prepared and served to the visitors during the Fish Festival. Major restaurants, Govt. Organization, entrepreneurs, Women SHG's, individuals, etc., participated in the event by setting up stalls to popularize consumption of fish and fish products.

b) National Fish Festival at New Delhi

A 3-day National Fish Food Festival was organized at Rajpath Sitting Park, Opp. India Gate, New Delhi from 26th to 28th April 2018. The event was inaugurated by Ms. Rajni Sekhri Sibal, IAS, Secretary, Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India in the presence of Ms. I. Rani Kumudini, IAS, Chief Executive, NFDB and Shri. Sagar Mehra, Joint Secretary (Fy), DoF, MoF&AD, Govt. of India. There were 15 stalls, with 8 participants from major restaurants, Govt. Organization, entrepreneurs to popularize consumption of fish and fish products. Different varieties of fish and shrimp dishes were prepared and served to the visitors. The fish food festival attracted huge crowd. This was the first Fish Festival organized after the formation of Department of Fisheries.

c) National Fish Food Festival, Coimbatore

A 3-day National Fish Food Festival was organized by the NFDB at Sashtri Ground, R.S. Puram, Coimbatore, Tamil Nadu from 26th to 28th July, 2019 to popularize consumption of fish and fish products. The event was inaugurated by Mr. Mohana Sundaram, Additional Director, Department of Fisheries, Govt. of Tamil Nadu. There were 14 participants represented in 16 stalls, with participation from 2 Govt. organizations, 4 restaurants, 6 Fishermen Cooperative Societies and 2 ornamental fish entrepreneurs. Different varieties of fish, prawn, crab & lobster dishes were prepared and served to the visitors. Apart from that fresh fish, dry fish and ornamental fishes & accessories were sold during the 3-day event. Around 3000 kg of fish and fish products were sold during the event. The fish food festival attracted huge crowd.

d) World Fisheries Day 2019

The Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India celebrated the World Fisheries Day on 21st November 2019 at NASC Complex, Pusa, New Delhi. The Hon'ble Union Minister for Fisheries, Animal Husbandry and Dairying, Shri Giriraj Singh participated as the Chief Guest while Hon'ble Ministers of State for Fisheries, Animal Husbandry and Dairying, Dr Sanjeev Balyan and Shri Pratap Chandra Sarangi participated as the Guests of Honour.

During the event, the Government of India felicitated 19 nos. of outstanding fish farmers, aquapreneurs & fisher folks in recognition to their accomplishments in the field and their contribution into the growth of the sector. During the event, some of the progressive farmers have also shared their experiences in fish farming. The Hon'ble Union Minister has released a booklet on 'Aquaculture Technologies Implemented by NFDB' and four posters on (i) Tilapia culture, (ii) Shrimp farming, (iii) Pangasius culture and (iv) Carp culture in ponds. Around 600 fishers, fish farmers, officials from Fisheries Departments across the nation participated in the event apart from officials, scientists, professionals, entrepreneurs and stakeholders.

(xvi) Details of International Assignments/Trainings/co-operation

a) International Training Programme on "Frontier Aquaculture Technologies" in Israel

The programme on "Frontier Aquaculture Technologies" a tailor-made study visit for senior professionals from India was attended by a 10 member team lead by Shri Sagar Mehra, Joint Secretary (Fisheries), GoI during 18-23 May, 2019 in Israel.

b) *Dan Fish* International Expo, 2019, Aalborg City, Denmark

National Fisheries Development Board participated in the expo at Aalborg Kongres & Kulture centre, Denmark. The stall was set up in a 16 sq.m area highlighting status of Indian fisheries sector in the world, which showed the possibility of the advances in fisheries sector in India made by reputed firms in the field of nets, trawl, ropes, wires, engines, marine Electronics, navigation and communication equipment, conveyors, life-saving equipment, and much, much more. Undertaken field visit of the Indian delegates from 9.10.2019 to 11.10.2019 at aquaculture farms, post-harvest processing industries and feed industry in the Aalborg and nearby areas for better undertaking of the new technologies and collaboration possibilities

CENTRAL INSTITUTE OF FISHERIES NAUTICAL & ENGINEERING TRAINING (CIFNET)

1 Introduction

The Government of India, in 1959 constituted a committee on “Fisheries Education”, for assessing the manpower requirement and to suggest measures for providing trained manpower for boosting the fishery developmental activities. CIFNET, the erstwhile Central Institute of Fisheries Operatives (CIFO), was thus established in 1963 at Kochi on the recommendation of above committee to meet the trained manpower needs of ocean going fishing vessels and that of fishing industry. Subsequently, a unit of CIFNET was established in Chennai in 1968 and another unit at Vizag in 1981 to cope up with the additional requirements due to expansion of fishing fleet/industry of the country. Since then, CIFNET is serving the nation by creating trained manpower needed for manning the fishing vessels.

2 Objective

- To create technical manpower for the operation of Ocean going /Deep sea fishing vessels.
- To create trained manpower to manage fishery establishments.
- To provide training for technical teachers for manning the fishermen training centers attached to Maritime States and Union Territories.
- The Institute has also expanded its mandate for training the fishermen of the coastal states and Union Territories through capacity building training programme under Blue Revolution/Pradhan Mantri Matsya Sampada Yojana(PMMSY).
- To conduct studies on fishing craft, fishing gears and equipments and provide extensive training to accelerate advancement in fishing technology for enhancing productivity of fishermen and increasing marine fish production.
- To help developing nations in the South-east Asian, Middle east and African regions to create technical manpower for development of Marine Fisheries.

3 CIFNET vision

To impart quality training in order to upgrade skills, prevent obsolescence, develop healthy constructive attitude with focus on competitiveness to meet the challenges of the fishing and the mercantile marine fields.

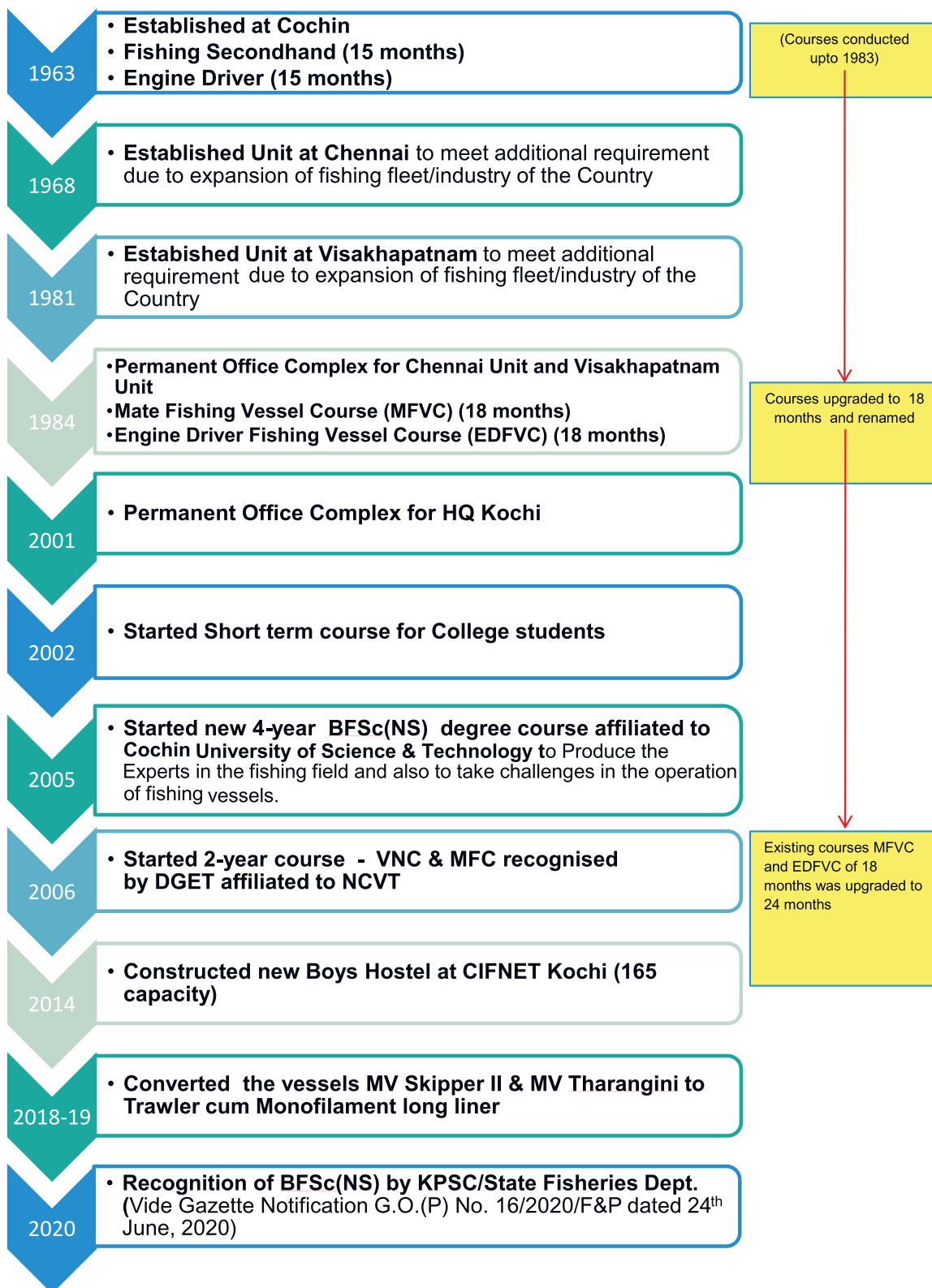
4 CIFNET Mission

“Develop skilled man power for deep sea fishing”
(Trained man power-nation’s power)

5 Significant Contributions made to Fisheries Sector since inception of CIFNET

- Development of Skilled Manpower for Deep sea fishing vessels
- Construction and Introduction of Ferro cement boats
- Energy conservation in fishing vessel by introducing Kort nozzle
- Location of Tuna grounds and training personnel on Tuna Long line Technique

Fig 43. Major Developments of CIFNET since inception



- Demonstration of Shrimp trawling using resource specific fishing gear
- Conducted experiments with Turtle Excluding Device (TED) on Trawl nets operated off Odisha (Puri) coast
- Study on the usage of LPG as fuel on Outboard Motor operated in traditional fishing sector
- Capacity building in Deep sea fishing on Mono filament long lining and onboard handling of tuna for Fishermen
- Training of Fishermen through outreach programme

6 Major Achievement - Overall Statistics Training as on March 2020

CIFNET has been conducting various regular and short term courses since inception. A total of 21,734 candidates have been trained. A capacity building training on Monofilament longline and Tuna Handling onboard have been conducted by CIFNET under Blue Revolution Scheme. A total of 335 fishermen have been trained. The details are furnished in the concerned table.

7 A brief about the training courses conducted at CIFNET

Organized training in the field of Fishing gear technology & fishing Technique, Seamanship & Navigation, Marine Engineering, Refrigeration, Electrical engineering & Electronics are being conducted at CIFNET since its inception at Cochin during 1963 and the subsequent Units at Chennai (1968) and Visakhapatnam (1981). The details are furnished in the concerned table.

7.1. REGULAR COURSES

7.1.1. Degree course -Bachelor of Fishery Science (Nautical Science) [BFSc(NS)]

The BFSc (NS) course, offered by CIFNET from the academic year 2005-06 is a 4-year (8 Semester) degree programme mainly concerned with study of fisheries, nautical science, operation of fishing vessels etc. This programme has an exhaustive curriculum designed to provide profound practical knowledge on various aspects of the fishing and nautical sciences. This Degree course is affiliated to Cochin University of Science and Technology (CUSAT), Kochi. The course is duly recognised by University Grants Commission (UGC) and DG Shipping Mumbai. The selection of the candidates for this course is through All India Common entrance examinations conducted by CIFNET.

The BFSc(NS) course aims to prepare candidates for the Competency Certificate Examination (COC), initially as Mate of Fishing Vessel and subsequently as Skipper of Fishing Vessel. The passed out students are eligible to apply for various posts under the Kerala Fisheries subordinate service like Assistant Fisheries Extension Officer, Fisheries Officer, Fisheries Assistant in Kerala State Fisheries Department as per the Kerala Gazette Notification G.O(P) No.16/2020/F&P dated 24.06.2020. They are eligible to apply for the post of Instructor (Seamanship & Navigation) in CIFNET. The passed out candidates are also employed with institutes like CMFRI, CIFT, CIBA, Customs etc.

7.1.2. NCVT courses- Vessel Navigator course (VNC) & Marine Fitter course (MFC)

Vessel Navigator Course(VNC) and Marine Fitter Course (MFC) framed under Craftsman Training Scheme (CTS) of National Council of Vocational Training (NCVT), recognised by DGT, MSDE, New Delhi with NSQF Level 5. The courses are designed by CIFNET and commenced from 2006 with intake capacity of 16/year per batch and subsequently increased to 20/year per batch now. The selection of the candidates for this course is through All India Common Entrance Examination conducted by CIFNET. On completion of these courses they are eligible to undergo post-institutional training like Junior Deckhand/Engine Room Assistants/Apprenticeship Fitter. Thereafter they are eligible for appearing Certificate of Competency (CoC) examinations of Mate of Fishing Vessel, Skipper Fishing Vessel, Engine Driver Fishing Vessel and Engineer Fishing Vessel conducted by Mercantile Marine

Department after acquiring required sea service.

The passed out VNC/MFC candidates are employed with CIFNET, FSI, CIFT, UT of Lakshadweep, IOC, Port Trust, Customs, ITBF, Naval Dockyards, L&T etc. in various categories.

7.2. Ancillary course- Shore Mechanics Course (SMC)

The course was started as per the demands from various Fisheries Departments for manning the Marine Workshops and shore establishments. The course is of one year duration with an intake capacity of minimum 10 candidates. The course is being continued as per the sponsorship of UT Lakshadweep Administration/ Pondicherry. The passed out candidates are employed with UT Lakshadweep Administration/ Pondicherry in various categories.

7.3 Statutory courses & refresher courses

These courses are conducted to meet the training requirements of Technical and certified personnel such as Skipper, Mate of Fishing Vessels as per M.S.(Amendment) Act 1987. The statutory courses namely Elementary Fishing Technology Course (EFTC) of 2 months duration and Advanced Fishing Technology Course (AFTC) of 2 weeks duration are conducted as per demand for the candidates appearing for CoC examination, D.G. Shipping as per M S Act. The Refresher courses of 1 month duration are also conducted as per the demand from candidates for appearing CoC examinations in order to gain theoretical and practical knowledge in Nautical and Engineering subjects.

7.4 SHORT TERM COURSES

7.4.1 Short term courses for fishermen (In-House)

The Institute arranges short term courses for the benefit of the Fishermen which are conducted at the institute according to the convenience of the fishermen during the off-season. The courses are conducted to the possible extent in vernacular language. The following are the main courses by which the fishermen are benefited.

- Basic of seamanship, Navigation, Marine Electronic Equipments, Operation & Maintenance of Engines on board fishing boats.
- Capacity Building in Deep sea fishing and onboard Handling of tuna
- Fishing technology and responsible fishing.

7.4.2 Short term extension courses for fishermen (Out reach)

CIFNET also render its service to the fishermen by organising a series of extension programmes at fishermen centres. These outreach programmes are mobilized during every year in collaboration with respective State Fisheries Departments. Some of the extension programmes are as follows:

- Fabrication of square mesh cod end
- Safety of life at sea
- Operation and maintenance of engines onboard

7.4.3 Short term Courses for professionals from sister Organisations

The Institute also conducts special short-term courses on specific request from other sister organisations like Coast Guard, MPEDA, CIFT, State Fisheries Dept.etc. in Fisheries, Nautical and Engineering disciplines. The course modules are specially designed to suit the requirement of such organisations. The following are some of such short term courses conducted:

- Fishery Technology Course for Indian Coast Guard
- Trainer's Training Course on Fishing Vessel Registration (for State Fisheries Department)

- Trainer's Training Course on "Navigation, Marine Electronic Equipments and Marine Engines (for State Fisheries Department)

7.4.4 Short term Training programmes for college students and VHSS

The Technical expertise, training and infrastructure facilities of CIFNET are being utilised to the optimum level by conducting various short term training programmes for the students fraternity during last few years. On job training skill development programme is being conducted for the VHSS students. The Graduates, Post Graduates students and students of the Engineering Colleges, ITI / ITC had the opportunity to attend these specially designed sandwich programmes and were able to absorb gainful practical knowledge.

8 Training Programmes proposed under PMMSY through short term courses

This programme is newly designed for skilling/training of the fishermen by reaching to the fishing villages/fishing harbours by the CIFNET. The training aids and accessories are taken to the respective places of outreach training programme which are planned in coordination with fishery associations/officials, local bodies of the fishing villages/ gramma panchayat. The extension programme under PMMSY will be given maximum importance under 5 year Action Plan. The details are furnished in the concerned table

9 Outreach/Awareness Training Programme for Fishermen

10 Fishermen Training (In-house) under PMMSY

Skill Development/Awareness Training Programme for Fishermen

11 Training of Trainers (ToT) Programme under PMMSY



CIFNET Unit, Chennai



CIFNET Unit, Visakhapatnam



MV Prashikshani



MV Tharangini



MV Skipper II



Inflated life raft demonstration



Fishermen training on monofilament longlining



Students at Microbiology lab



Class in the Navigation simulator



Onboard navigation training



Chart work practicals

NATIONAL INSTITUTE OF FISHERIES POST HARVEST TECHNOLOGY AND TRAINING (NIFPHATT)

The history of National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT) dates back to October 17th 1952 when a tripartite agreement was signed by the Government of India, Government of Norway and the United Nations which resulted in the establishment of Indo-Norwegian Project (INP) for fisheries, area and fishermen community development at Neendakara in Quilon, Kerala. In 1963 the facilities developed at Neendakara, Kannur, Karwar and Mandapam were handed over to the respective State Fisheries Department and the Headquarters was shifted to Kochi. On the expiry of the agreement with Govt. of Norway in 1972, the administration of the project was completely taken over by the Govt. of India and the project was renamed as Integrated Fisheries Project (IFP) under the Ministry of Agriculture. As per the recommendations of cadre review committee, certain divisions of the Institute were transferred to sister organizations, mandates were modified and renamed IFP as National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT) during the year 2008.



A retrospective on INP and IFP

During the pre independence and independence era, the Indian scenario on agriculture production, fisheries and animal husbandry was very grim. All the developments happened during the past several decades in the above mentioned fields in India can very well be attributed to the initiatives such as Indo-Swiz, Indo-Norwegian projects etc., by the great visionaries of India during those days.

Fisheries infrastructure and technology were rudimentary at that time. The fish production in India during 1940's & 50's could in no way be comparable to that of the present day production levels. The artisanal level of fishing by the fishermen community was just sufficient to meet their daily subsistence. Excess catch if any could only be converted to manure or discarded. The introduction of mechanized fishing in India, initiated by the Indo-Norwegian Project and taken up by the industry, opened a new chapter in the marine fish production. Now marine products have risen to the level of earning the biggest share in foreign exchange (\$6.7 billion 2019-20) from agriculture sector.



Mechanization in fishing has brought in other concerns such as handling of fish landings in bulk. This has led to the introduction of modern preservation methods. Acceptance of several such non conventional fish varieties and fishery products or preservation techniques by the consumers was another achievement worth mentioning.

Popularization of fishery products, importance of fish handling & preservation and spreading the

message of fish as a safe and healthy food was another service carried out by this Institute. Now the present generation may wonder to know that there was a time, when iced fish was considered as second grade or even semi spoiled one. Consumer's mindset was attuned to accept nothing less than freshly caught fishes. The interior areas were forced to satisfy with dried /cured fish. For several decades, a similar reluctance for accepting frozen fishery products also existed. Even during eighties or early nineties, customers were much sceptical on trying them. Canned fishery product's case was also not different. Canned and frozen products have good acceptability among fish consumers now.

The customer attitudes have not changed overnight or naturally happened, but through intentional and well focused awareness programmes. NIFPHATT as a pioneer Institute in the field of fisheries in India can very well boast to have played a small but a very significant role in Indian fisheries development. The objectives of this Institute have been redefined, fine tuning to meet the requirements of the changed scenarios in the sector. Now more focus is given to product development and popularization, human resource development and gender development through tools like training programmes and consultancy services.

Certain initial milestones

- Fishermen community & Area development
- Introduced mechanization and motorization in marine fishing sector in India
- Survey & Mapping of resources along south- east & south-west coasts
- Introduced deep sea fishing techniques such as long lining, purse seining, deep sea trawling, gillnetting etc. as a part of exploratory and experimental fishing
- Established refrigeration plant and cold storage facilities
- Developed diversified value added marine products and processes
- Popularized the diversified fishery products in rural and urban markets in different parts of the country and created awareness among processors and consumers
- Established marine workshop and slipway/dry docking facilities for fishing trawlers
- Established fully equipped electronic and electrical sections
- Established life raft-servicing station and got it duly recognized by the Mercantile Marine Department
- Led the Antarctic expedition in the polar vessel Sagar Sampada for the exploration of the Krill resources
- Popularized and promoted fish as healthy food
- Created a cadre of fish processing experts through imparting hands-on training and exposure to the students of food technology particularly fisheries.
- Conducted training programmes on Post harvest technology, repairs and maintenance of fishing gears
- Implemented Coastal community empowerment programmes with special reference to Gender

Current Mission & Mandates

1. Post harvest technology up-gradation and its transfer to beneficiaries such as rural fishermen community, small scale industries, export processing houses and students through consultancy, job work and training
2. Value added product development by way of process and product diversification from all

varieties of fish including low value, unconventional and seasonally abundant fishes

3. Imparting training in the field of post harvest technology, refrigeration technology, Quality control and value added products
4. Providing consultancy services and training for rural development programmes/ women empowerment programmes in fish processing, supporting local fish farmers, self-help groups of fishermen community, fishermen's cooperative societies functioning under Panchayathi Raj Institutions
5. Popularization and test marketing of value added products from fish varieties including low value, unconventional species and seasonally abundant fishes
6. Extension of the activities through popularization and test marketing of value added products to new areas and develop markets in all states in a phased manner with added attention to rural areas and enthusing entrepreneurs to enter into sea food processing industry

CURRENT ACTIVITIES:

- ▶ Post harvest technology up-gradation and its dissemination

NIFPHATT has always strived to keep itself abreast with the technological developments in fisheries sector. Comprehending the importance of value addition in the sector, the Institute has developed various ready to cook and ready to eat products from fish and fishery resources. Consumer acceptance of the developed products is affirmed through test marketing channels. The know-how thus generated is transferred to the beneficiaries through training and consultancy services.

NIFPHATT is conducting adaptive research in the utilization of new and unconventional varieties of fish. Research activities of the Institute are primarily aimed at product development, improvement and fine tuning the technology to suit industrial requirements.

Some of the convenience based products developed are:

- Thermal processed fishery products in Tin Free Steel (TFS) Cans and retort pouches
- High-end products from farmed Cobia
- High-end products from farmed Tilapia
- High-end products from edible oyster
- High-end products from oceanic squids
- Fish wafer
- Fishture- Fish Based Protein Snack

Over the course of time, NIFPHATT has also associated with external funded projects like National Agriculture Technology Project (NATP) and National Agricultural Innovation Project (NAIP). NIFPHATT was consortium partner for the following programmes with CMFRI as the lead Institute.

- A value chain on high value shell fishes through mariculture system
- Utilization Strategy for Oceanic Squid in Arabian Sea: A Value Chain Approach
- ▶ Human Resource/ Community and gender development

The training programmes of NIFPHATT are sector specific and subject specific in different disciplines of the post harvest technology and refrigeration technology. The training programmes are designed in such a way that it provides intensive hands on experience to the students who are pursuing specialized education in fisheries science, biotechnology, food science, food microbiology, food engineering and professionals working in fisheries sector. To augment the development of

manpower in the fisheries and allied sectors, the Institute offers diversified training programmes in the various fields of fisheries post harvest technology, refrigeration technology, HACCP/GMP, quality control, seafood microbiology and value added products development.

Extensive rural and gender development programmes are provided to the self-help groups (SHGs) from fishermen community aiming at dissemination of rural appropriate technologies in sea food processing, for making them self-reliant. NIFPHATT has launched its extensive fisherwomen training programme since 2000 in the national level on various capacities across 9 maritime states and two union territories. A total of 15,756 fisherwomen got training from NIFPHATT till 2020 with the effective support of different user agencies, various state fisheries departments and the administrative Ministry. These programmes have equipped fisherwomen with skills not only in fish handling, hygiene, fish processing/ preservation techniques and ready-to-eat/cook products development but also in micro entrepreneurship, group development and marketing. Apart from providing training to them, NIFPHATT has been supporting fishermen co-operative societies, who play multifaceted role in the socio- economic, educational, health & mental development of fishermen communities. Manassery Fishermen Co-operative Society in Kochi is one among them. Fisherwomen from that society are directly involved in the product development activities of NIFPHATT. The dearth in hands for various activities in NIFPHATT is being supplemented by engaging fisherwomen from this society for the past several years. Fourteen years of inclusive innovative intervention of NIFPHATT in the empowerment activities of fisherwomen have given them an exact direction to their way ahead. This has motivated them to establish micro units in their own areas with locally available resources.

Processing plants of the institute also serve as venue for on the job training of students and practical classes for faculties, officials from various institutes, fisher folks and self-help groups throughout India. The institute has a well-equipped laboratory for quality assurance of products. These labs are also used for imparting practical classes for trainees.

▶ Entrepreneurial development

Dynamic nature of seafood trade poses significant risk, especially for a nascent entrepreneur. With a view to support new ventures in seafood trade and to shift the focus of the industry from frozen products to premium chilled products fetching foreign exchange many folds, NIFPHATT has two chilled fish processing facilities with the support of MPEDA. This is expected to act as groundswell for entrepreneurs to take up this line of business without facing the risks associated with high initial capital investments.

▶ Standard Fixing Exercises

NIFPHATT is actively participating and contributing to the standard fixing exercises for fish & fishery products at national and international level by serving as an expert member in Bureau of Indian Standards (BIS/ISO), Food Safety and Security Authority of India (FSSAI), Shadow Committee for CODEX and Technical Committee for Risk Assessment for Import of Fish & Fishery Products into India. NIFPHATT has played a major role in formulating the following traceability ISO standards:

- Traceability of Crustaceans products- Specification on the information to be recorded in farmed crustacean distribution chains.
 - Traceability of Crustaceans products- Specifications on the information to be recorded in captured crustacean distribution chains.
 - Traceability of Molluscan products- Specifications on the information to be recorded in farmed molluscan distribution chains.
 - Traceability of Molluscan products- Specification on the information to be recorded in captured Mollusca distribution chains.
- ▶ Consultancy Services for establishing fisheries infrastructures

Expertise of the Institute is expected to be disseminated to the industry and other stakeholders through consultancy services also for establishment of fisheries infrastructures such as chilled room, cold storages, ice plants, processing/common facility centres etc. Some of the notable achievements in this area are:

- Consultancy / technical assistance for design and layout of seafood processing facility and assessment of technical skill training needs of personnel of Women's Cooperatives, Dili under the approval of United Nations Industrial Development Organization (UNIDO), Centre for South-South Industrial Cooperation (UCSSIC), in Timor-Leste.
- Technical and capacity building support to East Godavari Riverine Estuarine Ecosystem (EGREE), Kakinada, Andhra Pradesh to establish processing and post-harvest centres
- Consultancy services for Harbor Engineering Department, Govt. of Kerala for establishing ice plants, ice store, chilled room in conformity with HACCP/EU norms at various coastal districts of Kerala
- Consultancy service to Matsyafed, Kerala for establishing block ice plant, ice store and chilled room at Shakthikulangara in Kollam district, Kerala
- Consultancy service to Coastal Development Agencies and Department of Fisheries, Kerala for Establishing modern fish processing plant at Sakthikulangara, Kollam district
 - ▶ Spreading the message of 'fish as a healthy food'

According to the Food and Agriculture Organization (The State of Food Security and Nutrition in the World, 2020 report) it is estimated that, 14% of India's population is undernourished. It is globally accepted that, fish and fishery resources can play a major role in mitigating malnutrition. Due to various reasons, majority of the population in India, except along the coastal belt are reluctant to include fish in their daily diet. Such taboos and customs can very well be overcome by awareness creation and popularization. This being one of the mandates, this Institute has played a significant role in popularizing the importance of fishery products and spreading the message of "fish as a healthy food" without any compromise on its food safety aspects. Institute's test marketing channels extend quality fish and fishery products to large number of consumers throughout the year. Institute also takes part in trade fairs and exhibition throughout India spreading this message.

Way forward.....

Efforts are being made to continue this pace of activities acquired through the past several decades into the future in fisheries sector. This can be achieved through establishing wider inter-institutional linkages with National and State establishments. The Institute is presently planning to intensify its focus on skill up-gradation of the fishermen/fisherwomen/fish farmers-the primary producers of the sector. At the same time, due emphasis will be given to the postharvest aspects by development of novel value added products/processes and popularising the same among the populace.

FISHERY SURVEY OF INDIA(FSI)

History of the Institute

The Fishery Survey of India was established in 1946 as a pilot project known as Deep Sea Fishing Station (DSFS) by the Government of India with the objective of augmenting food supply through development of deep-sea fishing. Later, Offshore Fishing Stations (OFS) were established in 1957 and 1958 under the control of DSFS. Thereafter, the institute was graduated to the status of a survey institute in the year 1974 under the name Exploratory Fisheries Project (EFP) with the Bases known as Offshore Fishing Stations in all the maritime states.

The objectives of the exploratory fishing were charting of fishing grounds, training of fishing operatives and testing commercial possibilities of deep sea fishing were assigned. With the changing developmental needs of the marine fishery sector and the growing data requirements in the context of EEZ declaration in 1976, the institute has undergone major structural and functional transformations. In 1983, it was re-organised and upgraded as a national institute, the Fishery Survey of India. It was re-organised as Science and Technology Institute in the year 1988. Consequent to the re-organisation, the institute was amplified, enlarged and upgraded the scope and contents of its functions and activities. The Institute has thus, emerged as the nodal Fishery Institute in India with the primary responsibility of marine fisheries resources survey, assessment and monitoring in the Indian Exclusive Economic Zone (EEZ) and adjoining seas for promoting sustainable exploitation and management of the fish stocks. With passing time, the FSI had passed through the administrative control of multiple ministries of Govt. of India viz., Ministry of Food and Agriculture, Ministry of Agriculture (Department of Agriculture and Cooperation), Ministry of Food Processing Industries, Ministry of Agriculture (Department of Animal Husbandry and Dairying), Ministry of Agriculture and Farmers' Welfare (Department of Animal Husbandry, Dairying and Fisheries).

Presently the institute is in the administrative control of Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying since 2019 with a survey fleet of 11 deep sea vessels operating from seven operational Bases viz., Mumbai, Mormugao, Cochin, Porbandar on the west coast and Chennai, Visakhapatnam and Port Blair on the east coast in order to accomplish the mandate of the Institute.

1. Mandate

The FSI is a sub-ordinate institute under the Department of Fisheries, Ministry of Fisheries Animal Husbandry and Dairying for carrying out the survey, assessment and monitoring of the marine fishery resources of the Indian EEZ within the framework of a well defined mandate. The mandate of the Institute is tuned from time to time to match the developmental activities of the fisheries sector as well as to meet the national and global requirements. The mandate of the institute was approved by the Evaluation committee of FSI during 2007 is given below:

- Exploratory surveys, charting of fishing grounds, assessment of fish stocks in the Indian EEZ and adjoining high seas and research thereof, besides the specific surveys on request from the States and the Union Territories.
- Data collection and periodic re-validation of potential of fishery resources to provide advice on fishery management issues enshrined in the national, regional and global conventions and agreements and other associated activities.
- Monitoring survey of fishery resources in the exploited areas including coral reefs, application of Monitoring, Control and Surveillance (MCS) for regulating fishing activities and promoting Code of Conduct for Responsible Fisheries (CCRF) in the Indian EEZ.

- Maintain Data Bank and disseminate information on fishery resources to the end - users and act as an interface between the State/UTs and the Ministry of Fisheries, Animal Husbandry and Dairying, Government of India for Marine and Inland fish production and related aspects.
- Assessment of suitability of fishing gear, accessories and equipment with special reference to the preservation of environment and ecology of marine habitat.
- Fish stock identification and biodiversity studies including application of genetic tools and techniques.
- Marine fisheries forecasting including application of Remote Sensing for the benefit of Artisanal, Mechanized and Industrial sectors.
- Human Resources Development through the practical training of fishing operatives, fishermen, fisheries officials and students.

2. Major Achievements & contributions

- Survey and stock assessment of marine fishery resources of Indian Exclusive Economic Zone (EEZ) covering all the maritime states and UTs.
- Biological studies of all the major resources have been carried out for fisheries management and conservation.
- Depth-wise, area-wise biomass estimates for important resources were made.
- Located perch resources all along Karnataka and Kerala coast between 70-150 m depth zone and also in Andaman waters.
- Located deep-sea prawn and lobster grounds off Kerala and Gulf of Mannar.
- Discovered new lobster grounds in Quilon bank and off Ponnani during the period 1999-2004.
- Introduced Perch traps for exploitation of perch resource dwelling in the rocky fishing grounds.
- Systematic survey of the fishery resources of Wadge bank and Gulf of Mannar started during 1990's were continued.
- Rich Shrimp grounds in the Sand heads off West Bengal and off Paradip, Odisha were located.
- Rich Indian mackerel grounds were located along the Odisha coast in 50-150 m depth.
- Mid water / pelagic trawling undertaken along the upper east coast of India showed encouraging results.
- Demersal resources survey of Andaman waters was conducted and located the availability of spear lobster (*Linuparus somniosus*) for the first time in Indian waters.
- Deep sea shrimps fishing grounds identified by FSI forms one of the major exporting fishery resources from the A&N Islands.
- Feasibility of hand line fishing for demersal resources in the shelf area of A&N Islands was established by FSI.
- Introduced resource-specific diversified techniques like trap fishing, long lining etc.
- Popularized demersal trawling technique in Indian waters.
- Bottom set vertical longline gear for perch resources were established by FSI.
- FSI developed Lobster traps and trained the fishers onboard to use of these traps.
- The computerization of the data collected by the exploratory survey vessels of the FSI was commenced in the eighties. At present FSI data bank holds about 82,000 records and about 100 records are added annually.

- Location of potential resources of tunas and bill fishes, sharks were identified and published as Atlas for the benefit of fishermen and stakeholders.
- Special drive Survey programmes such as preliminary surveys in the continental slope during 1997 – 2002, demersal fishery resources surveys of Andaman & Nicobar waters in 2008 & 2019, survey and assessment of oceanic and allied tuna resources around the Lakshadweep islands and Skipjack and Yellow-fin tuna by Pole & Line fishing in Lakshadweep and Andaman & Nicobar waters were implemented.
- Modified Deep Long Line (MDLL) gear for Big eye tuna resources was established in the Union Territory of A & N Islands.
- Drift long line gear using light sticks for Sword fish resources were established in A&N Islands.
- Preliminary survey of Skipjack and Yellow-fin tuna by Pole & Line fishing in A&N waters.
- Located of skip jack tuna grounds off Mangalore and Lakshadweep.
- Introduced and established feasibility of multifilament and monofilament tuna longline fishing by locating productive tuna grounds in Lakshadweep and the Indian EEZ.

3. Other Achievements

a. Technology introduced

- Purse seining in 1980 for pelagic resources survey.
- Squid jigging by deploying the vessel MFV *Matsya Sugundhi*.
- Pot fishing for harvesting Cephalopods targeting Octopus spp.
- Tuna tagging for Yellowfin and Skipjack tuna during 2005 – 2006 with the support of IOTC to understand the tuna migrations in Indian Ocean in order to locate the tuna stocks for sustainable exploitation.
- The scheme of Conversion of Shrimp Trawlers to Tuna Long Liner in 2005 was entrusted by the Govt. of India by providing subsidy. Fishery Survey of India was instrumental in the conversion of these shrimp trawlers to monofilament longliners and provided all the technical and scientific support.
- The Marine Engineering Division (MED) at Kochi is having facilities of dry-docking, slip way, life raft station, jetty and providing services to the fishing industry, Indian Coast Guard and Indian Navy at an affordable cost and revenue is being generated.

b. Publications

- Based on the survey findings the FSI has brought out Resource Information Series (Quarterly), Meena news (Quarterly), Bulletins, Occasional papers and Special publications, Cruise reports and Research papers.
- The FSI has been assigned with the Revalidation of marine fisheries stock potential in the Indian EEZ and accordingly in 1991, 2000, 2010 and 2018 Revalidation of marine fisheries stock potential in the Indian EEZ was carried out and reports has been published.
- Handbook on Fisheries Statistics is being published in association with the Ministry of Fisheries, AH&D.

c. Extension programmes

- Workshop, Open Houses, Marine Exhibition Street plays and Fishermen Rallies are being regularly for the benefit of the fishermen / fisherwomen, boat owners, NGOs working in fishery sector, students and policy makers.

- Dissemination of survey findings also being done through Doordarshan, All India Radio.
- Participation in Kisan Mela, Krishi Unnati mela, Agriculture and Fish Expo for disseminate the information collected through surveys by putting up an exhibition stalls.
- Awareness on CCRF is being provided among Fishers/Stakeholders for conducting responsible fishing practices, propagating and encouraging fishermen to diversify fishing effort to deep sea fishing.

d. Academic interest

- The FSI has been recognized as a research institute by various Universities for research leading to Ph.D., & Masters Degree in Science. Scientists of FSI were also recognized by these universities as the research guides for Ph.D., and M.Sc., degree courses.

e. Marine census

- As per the Ministry's assignment of carrying out marine census in Island groups, accordingly, during the years 2005, 2010 and 2015 FSI has successfully conducted Marine Census for the Lakshadweep and Andaman & Nicobar Islands in co-ordination with the Fisheries Departments of the UTs.

f. Training

- Onboard Training Programmes conducted on Monofilament / Multifilament Tuna Longlining sponsored by National Fisheries Development Board (NFDB), Hyderabad, Maritime States/ UTs and Puducherry under the FIMSUL – II Project funded by the WorldBank.
- Training to the Fishermen and Stakeholders of Maritime States/ UTs on fishing techniques, navigational, sea safety equipments etc.
- In-Vessel training to the CIFNET Trainees is being provided regularly enabling them to achieve required skill and sea service for the competency examination as certified officers by Mercantile Marine Department (MMD) both on Engine side and Deck side.

g. Collaborative research

- Remote Sensing and Fishery Forecasting in collaboration with SAC and ISRO has engaged in the development of resource specific fishery forecast models using Ocean Satellite derived data on ocean colour (*Chlorophyll*) and Sea Surface Temperature (SST).
- FSI had undertaken various International and institutional projects in collaboration with Indian National Centre for Ocean Information Services (INCOIS), GEF/UNDP/ IMP, Indian Ocean Tuna Commission (IOTC), ICAR, DOD, CMFRI, MoEF, SAC-ISRO, CMLRE, MoES etc.
- Implemented Centrally Sponsored Scheme (CSS) as per the directives of the Ministry, accordingly, the FSI had conducted various programmes in order to strengthen data collection and fish taxonomy.

h. Linkages with national and international agencies

- FSI is the designated Nodal agency of the Government of India to meet the research and data requirements of the Indian Ocean Tuna Commission (IOTC) as part of India's international obligation. The IOTC provides technical and scientific support and training to the member countries to expand their tuna fishing activity in the Indian Ocean.
- The FSI has been associated with Bay of Bengal Large Marine Ecosystem (BOBLME) since 2003.
- The FSI has been representing various committees for policy formulation and planning.
- FSI has vital linkages with several national and international agencies / institutions associated with ocean studies and fisheries development.

i. Other activities

- Assistance being rendered to Fishing Industries as and when required.
- Assistance also being rendered for Surveillance support regularly to the Indian Navy and Indian Coast Guard while out at sea.
- The FSI was entrusted with the responsibilities of acquiring the catch statistics of LoP vessels and analysis of raw data and subsequent submission to Ministry for the LoP vessels data base for future record. Accordingly, during the period 2003-2015, this task was accomplished.

OPERATIONAL BASES AND SURVEY VESSELS

The survey fleet of the Institute comprised of 11 vessels.



MFV Matsya Vrushti



MFV Yellowfin



MFV Matsya Varshini



MFV Matsya Drushti



MFV Matsya Shikari



MFV Matsya Nireekshani



MFV Sagarika



MFV Lavanika



MFV Samudrika



MFV Matsya Darshini



MFV Blue Marlin

Fishery Survey of India (HQs) and Base offices



FSI Head Quarters and Mumbai Base
Sassoon Dock, Colaba, Mumbai – 400 005



Mormugao Base
Opp. Microwave Towers, Mormugao – 403 803



Cochin Base
Kochangady, Kochi- 682005



Chennai Base
Fishing Harbour Complex, Chennai – 600 013



Visakhapatnam Base
Fishing Harbour, Visakhapatnam – 530 001



Port Blair Base
Post Box No.46, Port Blair – 744 101

CENTRAL INSTITUTE OF COASTAL ENGINEERING FOR FISHERY (CICEF)

1. ABOUT CICEF

The Central Institute of Coastal Engineering for Fishery (CICEF), formerly known as Pre-Investment Survey of Fishing Harbours (PISFH) is a premier institution of the Government of India established in January 1968 with its jurisdiction covering the entire Indian coastline for conducting engineering and economic investigations and preparing the Techno Economic Feasibility Reports (TEFRs) for the Fishing Harbour projects.

Being a subordinate office of the Government of India, Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying the Institute is playing a pivotal role in assisting the maritime States/UTs in extending the necessary technical support in conducting engineering and economic investigations and preparing the TEFRs of the FH projects. The costs of these projects are shared by the Department and the respective maritime State governments/ Union Territories (UTs) as per the norms of centrally sponsored scheme (CSS) which is in vogue since 1966-67.

Vision

To be a technology driven, scientifically and professionally managed consulting organization and to transform itself as a Centre of Excellence for the creation and development of fishing harbours (FHs) / fish landing centres (FLCs)

Mission

Create world class fishery engineering services and state-of-the-art technology for the development of fishery related infrastructure projects on demand from coastal State Governments, UTs, Port Trusts and other Public/ Private Sector undertakings.

Objectives

- ▶ Carry out reconnaissance surveys/ pre-feasibility studies to identify priority sites for development of fishery harbours, follow it up by detailed engineering and economic investigations and prepare TEFRs.
- ▶ Conduct post-construction evaluation of existing FHs/ FLCs.
- ▶ Provide technical advice on engineering and economic aspects wherever required for the development of fishery harbours and fish landing centres.
- ▶ Monitor the progress of construction of ongoing fishery harbours and fish landing centres sanctioned under the Centrally Sponsored Scheme in association with the Ministry of Fisheries, Animal Husbandry and Dairying.

2 ACHIEVEMENTS OF THE INSTITUTE

The achievements of the Institute are mainly in respect of development of FHs/FLCs, identifying new FH/FLC sites under Master Plan development, creation of coastal aquaculture farms, besides scrutiny of project proposals received from Coastal states/UT administration which are summarised below.

2.1 Development of FH/FLC projects

The core expertise and experience of the Institute lies in the subject matter of developing FHs/FLCs for which the organization was set up under the aegis of FAO-UN/SIDA technical assistance. The Institute till the end of June 2020 had carried out engineering and economic investigations for the development of FHs/FLCs at 104 sites and prepared TEFRs for 120 sites, besides rendering technical assistance to maritime States/UT Administrations in the scrutiny and finalization of TEFRs. On the basis of TEFRs prepared and submitted by the Institute and technical assistance rendered to maritime States/UTs, the Government of India and Maritime State Governments/UTs under the various schemes have developed 7 major fishing harbours and 83 minor fishing harbours by the end of June, 2020. Out of these, construction of 7 major fishing harbours and 47 minor fishing harbours have been completed and the remaining are under various stages of construction. The Institute periodically monitors the progress of construction of FH projects in association with the Government of India.

2.2 Master Plan for development of FHs/FLCs

The Institute has taken up the task of identifying potential sites and preparation of Master Plan reports for development of FHs/FLCs in all the maritime States/UTs. It has so far identified 117 fishery harbour sites comprising of 14 major and 103 minor fishery harbours suitable for development, prepared detailed master plan reports and submitted to the respective maritime States/UTs and Government of India.

2.3 Coastal aquaculture farms and hatchery projects

The Institute has so far reconnoitered 66,218 ha of coastal aquaculture farm area and investigations were carried out in 15,584 ha, spread over the maritime States of Gujarat, Maharashtra, Goa, Kerala, Tamil Nadu, Andhra Pradesh, Orissa and West Bengal. During the period 1986 to 1991, this Institute developed 4 pilot coastal aquaculture farms and one shrimp seed hatchery under the FAO/UNDP assistance.

Nominated by the World Bank as a Nodal Agency for the development of coastal aquaculture farms under the World Bank assisted Shrimp and Fish Culture project, this Institute has carried out survey and sub-soil investigations at 13 sites covering a total area of 9,640 ha in the States of West Bengal, Orissa and Andhra Pradesh. TEFRs were prepared in respect of 10 sites covering a total productive pond area of 3,826 ha. Out of the TEFRs prepared in respect of 10 sites, construction of six shrimp farms totaling about 792 ha of water spread area were completed during 1992-99 and trial culture operations carried out. Of these 6 project sites, 4 are located in West Bengal, namely Canning, Dighirpar, Digha and Dadanpatra Bar, one project at Jagatjore/Banapada in Orissa and one project at Bhairavapalem in Andhra Pradesh.

3 FUTURE CHALLENGES

The main mandate of the Institute is to develop FHs/FLCs to enable the fishing boats operating in the country reckoned at 2,70,050 which includes 65,876 traditional craft, 1,36,920 motorised traditional craft and 67,254 mechanised boats including deep sea vessels. India has a long coastline of 8,118 km covering 9 maritime States and 4 UTs. The mechanized fishing boats including the motorized/ non-motorized traditional craft need major/minor FH and FLC facilities for fish landing, outfitting, idle-berthing and repair. And they need other waterside and landside harbour infrastructure facilities for operational convenience and post-harvest handling of fish and prawn catches under hygienic conditions.

However, the fact remains that the FH/FLC facilities developed so far in the country are capable to meet the requirements of only about 54.10 % of the total mechanised fishing boats operating in the country. As of now, nearly 46 % of the total mechanised boats i.e., about 30,867 are operating

without any harbour facilities. In order to provide FH facilities for these 30,867 boats, over 60 - 75 FHs need to be developed in all the maritime States/UTs. It is, therefore, obvious that enormous efforts are required to be made for the development of FHs which in turn requires this Institute to undertake survey, investigation and preparation of project feasibility reports.

Owing to overcrowding of fishing boats, poor management and maintenance of the FH infrastructure in the country, the fish hygienic conditions and sanitation standards have met with all-time ebb and being severely criticized by the fish importing countries. As such, for the implementation of HACCP/ EU norms for fish hygienic standards and to meet the requirement of export inspection agency of Government of India, this Institute is presently assisting the maritime State governments/UTs, and National Fisheries Development Board (NFDB) in the upgradation/renovation of existing FH facilities in the country and the country need to go a long way.

In addition to the above, this Institute is required to scrutinize the FH project feasibility reports prepared by various government/private consultancy organizations engaged by the State governments. On behalf of the Department, these reports are examined thoroughly in this Institute and detailed technical observations/comments are prepared on engineering and economic aspects of the report to enable the Department of Fisheries, Government of India in the decision-making process and sanctioning of projects for development and financial assistance. Further, the Institute has so far played a pivotal role in identifying potential sites, conducting necessary investigations and preparation of TEFs for the development of FHs and there is need for the Institute to continue the unfinished tasks in the years ahead.

COASTAL AQUACULTURE AUTHORITY

THE COASTAL AQUACULTURE AUTHORITY (CAA)

GENESIS OF THE CAA

Coastal aquaculture, particularly shrimp farming, is the most vibrant food producing sector in India as it earns high foreign exchange to the exchequer. The supreme court in its verdict in Writ Petition No. 561 of 1994 (Jegannathan vs Union of India) raised concern on the environmental protection of coastal areas and directed the central Government to constitute an authority to protect the ecologically sensitive coastal aquaculture development in the country. It was, therefore, felt necessary that an enabling atmosphere with an appropriate policy, legal and institutional framework should be provided to facilitate this function.

Accordingly the AQUACULTURE AUTHORITY was constituted in exercise of the powers conferred under sub-section 3 of section 3 of the Environment (protection) act, 1986 by the Central Government to deal with the situation created by the shrimp culture industry in the coastal states and Union Territories by the notification dated 6.2.1997 of the Union Ministry of Environment and Forests, Government of India with the following members for the period of four years and six months.

The Aquaculture Authority was replaced by the coastal Aquaculture Authority Act, 2005.

COASTAL AQUACULTURE AUTHORITY

AIMS AND OBJECTIVES OF THE AUTHORITY:

The aims and objectives of the Authority are

- i. To regulate 'coastal aquaculture' activities in the areas notified by the Central Government as 'coastal areas' and for matters connected therewith.
- ii. The Authority is empowered to make regulations for the construction and operation of aquaculture farms in coastal areas, inspection of farms and hatcheries for *Penaeus vannamei* to ascertain their environmental impact.
- iii. Registration of aquaculture farms and hatcheries, removal or demolition of coastal aquaculture farms that cause environmental degradation, fixing standards for all coastal aquaculture inputs, viz., seed, feed, growth supplements, chemicals, etc., used in coastal aquaculture and for the overall monitoring of coastal aquaculture activities in the country.

Registration of Coastal aqua farms:

- Totally 1,179 shrimp farms with total farm area of 1,251.74 ha (Water Spread Area – 855.02 ha) were registered from June, 2019 to May, 2020. Altogether 39,705 shrimp farms with total farm area of 61,044.89 ha (Water Spread Area - 41,624.70 ha) received from State Level Committees/ District Level Committees of states were registered since inception to till May, 2020.

Renewal of Registration of Coastal aqua farms:

- During June, 2019 to May, 2020, 1248 farms with total farm area of 2,460.55 ha (WSA – 1,713.50 ha) were renewed. Total Renewal of registration of 7,973 farms with total farm area of 15,000.49 ha (WSA – 10,507.21 ha) were done from 2013 till May, 2020.

Letter of Permission for Culture of SPF *L. vannamei*:

A total of 2575 Letter of Permissions (LoPs) with total farm area of 12,460.52 ha (WSA – 8,388.13 ha) were registered since inception (August-2009) to May, 2020.

Empaneling of SPF Broodstock suppliers:

- CAA carried out the exercise of empaneling the suppliers of SPF *L. vannamei* & SPF *P. monodon* broodstock based on the genetic base and disease status in consultations with CIBA, NFDB and MPEDA. Based on the recommendations of Committee, 14 suppliers (12 suppliers for SPF *L. vannamei* and 2 suppliers for SPF *P. monodon*) were short-listed for supply of SPF broodstock to CAA permitted hatcheries.
- The Terms and Conditions for the supply of quality specific pathogen free (SPF) Broodstock and parent postlarvae of shrimp by overseas suppliers to hatcheries in India and the same was placed before the 18th Technical Committee meeting held on 10.1.2020. The Committee has approved the draft Terms and Conditions. The Ministry has been requested to notify the Terms and Conditions under the provisions of Livestock Importation Act, 2001 (Act 28 of 2001) as was done for the SOP of AQF.

Approval of SPF hatcheries and Nauplii Rearing Hatcheries (NRHs):

- A total of 315 SPF *L.vannamei* hatcheries and 123 Nauplii Rearing Hatcheries (NRH) spread all over the coastal states were approved from 2009 till May, 2020. A total of 7,57,800 nos. of *L. vananmei* broodstock were permitted to import and so far, during June, 2019 to May, 2020, 2,59,009 number of broodstock has been imported from the shortlisted suppliers.
- Two hatcheries were approved to import broodstock of SPF *P. monodon* and its seed production.

Screening of New Viruses Decapod iridescent virus 1 or DIV1:

- In addition to OIE listed pathogens, all the empaneled exporters from abroad and the Importers in India including hatchery operators are advised to screen SPF brood stock and other live stocks including artemia cysts connected with shrimp Aquaculture Industry in India for Decapod iridescent virus 1 or DIV1 and ensure that they are free from Decapod iridescent virus 1 or DIV1 for the safety of Shrimp Aquaculture Industry in India.

Certificate of Standards for coastal aquaculture inputs:

- CAA also issuing Certificate of Standards for coastal aquaculture inputs viz. feed, growth supplements and chemicals/ medicines for antibiotic free for the maintenance of the ecological and environmental balance of water bodies and the organisms reared therein and other aquatic life. Accordingly, CAA has issued Certificate of Standards to the 3,543 aqua inputs in eight categories. Further, a new advisory for submission of application has been issued to all the Manufacturer/Distributors of aqua inputs for ensuring antibiotic free aquaculture inputs.

Update of Database:

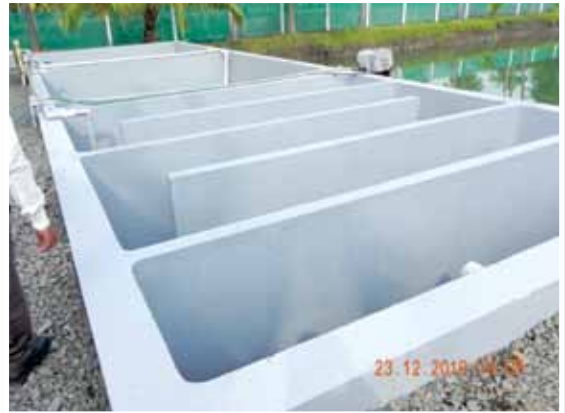
- Data base in CAA website www.caa.gov.in hosted by National Informatics Centre, Chennai updated with new and latest information periodically.

New Regulations:

- In accordance with the decision of the Authority in its 63rd meeting, new regulations for overseas broodstock supply has been prepared to inculcate responsibilities and accountability on the part of the suppliers and importers.

Effluent Treatment System:

- The design of Effluent Treatment System and model calculation was approved by the Authority in its 63rd meeting.



The models of ETS are given below:

Aquatic Animal Health and Quality Testing Laboratory:

- CAA has recognized the “Aquatic Animal Health and Quality Testing Laboratory” at NFDB as the National Referral Laboratory of CAA for Aquaculture under the category of Government of India laboratories to perform the following:
 - ▶ Seed Quality Analysis,
 - ▶ Disease Analysis,
 - ▶ Soil and Water Quality Analysis,
 - ▶ Quality Analysis of Aquaculture Inputs,
 - ▶ Antimicrobial Residual Analysis and
 - ▶ Microbiological Analysis related to aquaculture

Memorandum of Understanding (MOU) with NFDB:

- An MOU has been entered into between CAA and NFDB for the implementation of monitoring and compliance programme for the benefit of coastal aquaculture sector in the country. CAA and NFDB intend to work together in making AAHQ laboratory for ensuring compliances of the aquaculture establishments in India. CAA intends to utilize the services of the National Referral Laboratory for its monitoring of coastal aquaculture.

Pre border quarantine requirement:

- CAA had issued an order No. 57-6/2015 Tech Vol. II dated 12.12.2019 to implement the pre border quarantine requirement of testing done not earlier than 30 days before the actual shipment for the import of SPF *L. vannamei* into India and the same was sent to nodal ministry for necessary amendment in the Notification.

International Collaboration:

- CAA has established contact with University of Arizona, the referral laboratory of OIE with intent to collaborate in the field of aquaculture Pathology. University of Arizona has provided a draft MoU to be executed between CAA and University of Arizona to provide guidance and technical assistance in disease diagnostics, develop therapeutics and biosecurity measures to prevent shrimp diseases. The draft has been incorporated with inputs from CAA and the same has been confirmed by the University of Arizona.

Online File Management System:

- CAA has commenced online File Management System (FMS) in an attempt to make CAA paperless environmental friendly office.

Renewal of Registration of Coastal Aqua Hatcheries:

- The Inspection Committee of CAA constituted for this purpose had inspected 185 hatcheries located at Andhra Pradesh and Tamil Nadu for renewal of registration as provided under sub para (2) of para 1 of Guidelines for regulating hatcheries and farms for introduction of SPF *Litopenaeus vannamei* issued under Annexure II of CAA Rules, 2005. Among these, 170 hatcheries have been processed for renewal of Registration.

Extension of validity SIP and Registration of hatcheries:

- Considering the circumstances owing to the COVID-19 pandemic, the validity of the Registration, Annual Allocation Order and Sanitary Import Permit of the Hatcheries was extended up to 30th June, 2020 whose validity were expiring on 31.03.2020.

CHAPTER 12

INTERNATIONAL SCENARIO



Table 12.1: Contribution of India to World Fish Production in selected years

Year	World production (In MMT)			Contribution of India (In MMT)		
	Total	Marine	Inland	Total	Marine	Inland
2016	166.1	106.8	59.4	11.4	3.6	7.8
2017	172.7	111.2	61.5	12.6	3.7	8.9
2018	178.5	115.2	63.3	13.5	3.8	9.7

Source: SOFIA 2020. – State of Fisheries and Aquaculture in the world
 Note: Fishery statistical data presented in the above table exclude the production for mammals, crocodiles, corals, sponges, pearls, mother – of – pearl and aquatic plants. Totals may not match due to rounding

Fig 44 : World Production(In MMT)

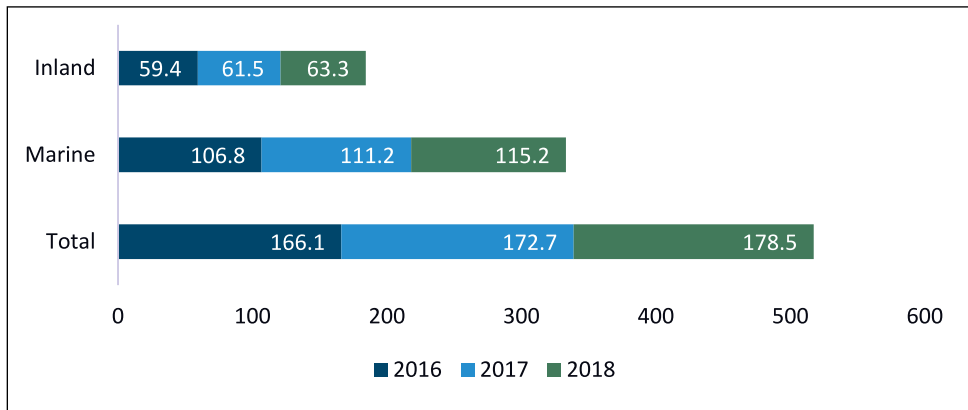


Fig 45 : Contribution of India (In MMT)

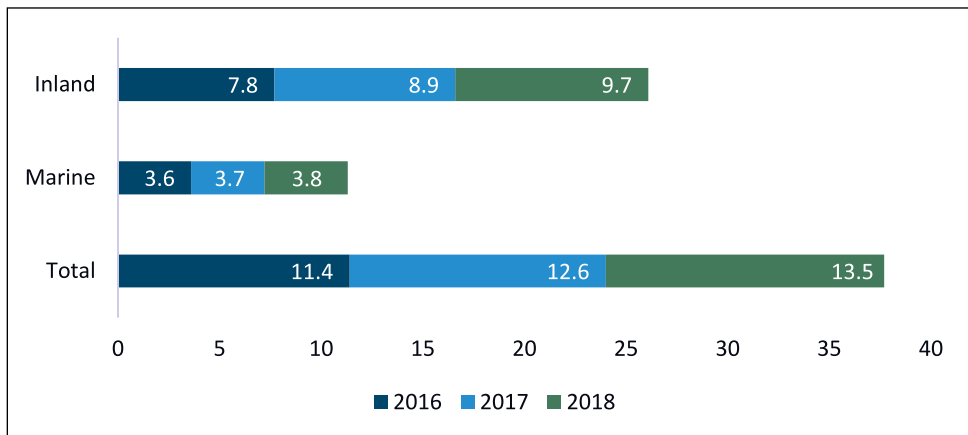



Table 12.2: Fish Production, 2018(live weight equivalent)		
	Production	Of which aquaculture
	2018	2018
	(1000 tonnes)	(1000 tonnes)
Asia	122 404	72820
China	62 207	47559
India	12 386	7066
Indonesia	12 642	5427
Japan	3 774	643
Philippines	2876	826
Republic of Korea	1905	568
Thailand	2598	891
Viet Nam	7481	4134
Africa	12268	2196
Egypt	1935	1561
Nigeria	1169	291
South Africa	566	6
Europe	18102	3075
European union	5879	1167
Norway	3844	1355
Russian Federation	5308	200
North America	6536	660
Canada	1019	191
United States of America	5213	468
Latin America and Caribbean	17587	3140
Argentina	839	3
Brazil	1319	605
Chile	3388	1266
Mexico	1939	247
Peru	7273	104
Oceania	1617	205
Australia	281	97
New Zealand	511	105
World	178529	82095
Developed countries	29233	4603
Developing countries	135096	73330

Source: SOFIA 2020. – State of Fisheries and Aquaculture in the world

Fig 46 : Size of bubble indicates the total fish production (in 1000 Tonnes) in 2018



Fig 47: Major Exporter Countries, 2018

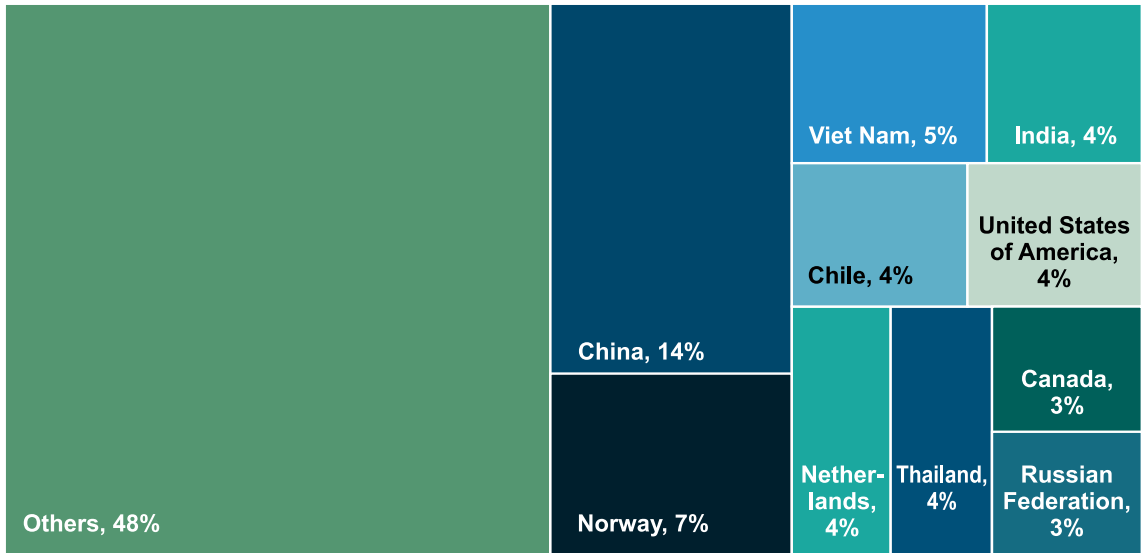


Fig 48: Major Importer Countries, 2018

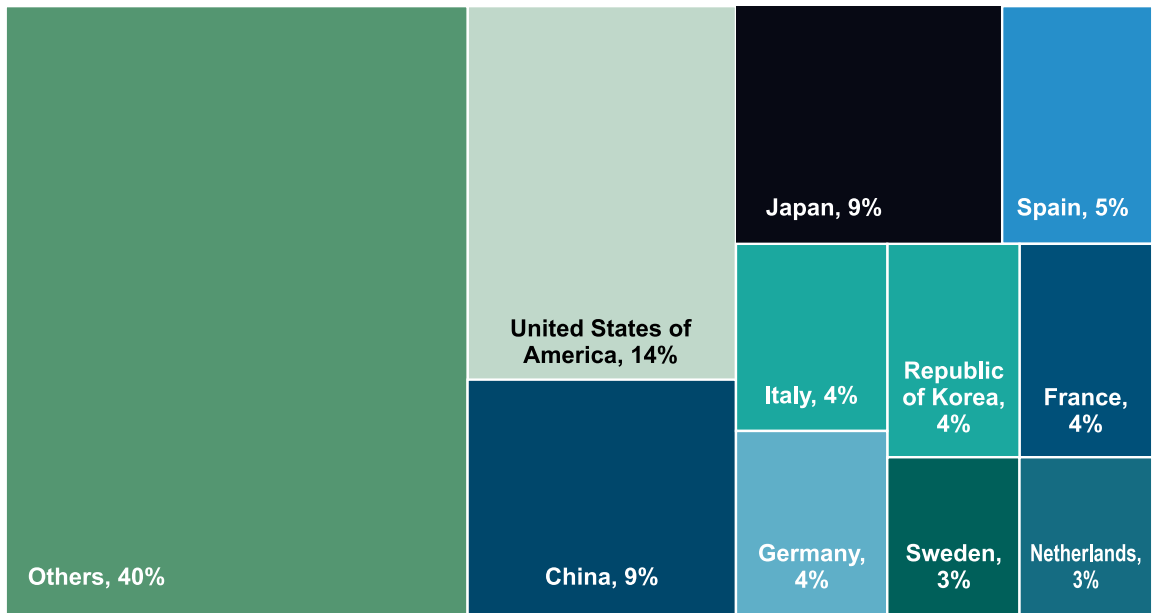


Table 12.3: World Fisheries and Aquaculture Production and Utilization (In Million Tonnes)

	1986-1995	1996-2005	2006-2015	2016	2017	2018
	Average per year					
Production						
Capture						
Inland	6.4	8.3	10.6	11.4	11.9	12
Marine	80.5	83	79.3	78.3	81.2	84.4
Total capture	86.9	91.4	89.8	89.6	93.1	96.4
Aquaculture						
Inland	8.6	19.8	36.8	48	49.6	51.3
marine	6.3	14.4	22.8	28.5	30	30.8
Total Aquaculture	14.9	34.2	59.7	76.5	79.5	82.1
Total world fisheries and aquaculture	101.8	125.6	149.5	166.1	172.7	178.5
Utilization						
Human Consumption	71.8	98.5	129.2	148.2	152.9	156.4
Non-food uses	29.9	27.1	20.3	17.9	19.7	22.2
Population	5.4	6.2	7	7.5	7.5	7.6
Per Capita apparent consumption(kg)	13.4	15.9	18.4	19.9	20.3	20.5
Trade						
Fish exports -in quantity	34.9	46.7	56.7	59.5	64.9	67.1
Share of exports in total production	34.30%	37.20%	37.90%	35.80%	37.60%	37.60%
Fish exports – in value (USD billions)	37	59.6	117.1	142.6	156	164.1

Source: SOFIA 2020. – State of Fisheries and Aquaculture in the world

Note:

Excludes Aquatic mammals, crocodiles, alligators and caimans. Seaweeds and other aquatic plants. Total may not match due to rounding. Utilization data for 2014-2018 are provisional estimates.

Source: SOFIA,2020

Table 12.4: Total and Per Capita Apparent Fish Consumption by Region and Economic Grouping, 2017

Region/Economic Grouping	Total Food Fish Consumption (Million Tonnes)	Per Capita Food Fish Consumption (Kg/Year)
World	152.9	20.3
World (Excluding China)	97.7	16
Africa	12.4	9.9
North America	8.1	22.4
Latin America and the Caribbean	6.7	10.5
Asia	108.7	24.1
Europe	16.1	21.6
Oceania	1	24.2
Developed Countries	31	24.4
Least Developed Countries	12.4	12.6
Other developing Countries	109.5	20.7
Low-Income food-deficit countries	23.6	9.3

Source: SOFIA 2020. – State of Fisheries and Aquaculture in the world

Table 12.5: Inland Waters Capture Production: Major Producing Countries

Country	Production				Percentage of total 2018
	2015	2016	2017	2018	
	(million tonnes, live weight)				
Bangladesh	0.102	1.05	1.16	1.22	10
Brazil	0.23	0.22	0.22	0.22	1
Cambodia	0.49	0.51	0.53	0.54	4
Chad	0.1	0.11	0.11	0.11	1
China	1.99	2	2.18	1.96	16
Democratic Republic of the Congo	0.23	0.23	0.23	0.23	2
Egypt	0.24	0.23	0.26	0.27	2
Ghana	0.09	0.09	0.09	0.09	1
India	1.35	1.46	1.59	1.7	14
Indonesia	0.47	0.43	0.43	0.51	4
Iran (Islamic Republic of)	0.09	0.09	0.1	0.11	1
Kenya	0.16	0.13	0.1	0.1	1
Malawi	0.14	0.15	0.2	0.22	1
Mali	0.09	0.1	0.11	0.09	1
Mexico	0.15	0.2	0.17	0.22	1
Mozambique	0.09	0.1	0.1	0.1	1
Myanmar	0.86	0.89	0.89	0.89	7
Nigeria	0.34	0.38	0.42	0.39	3
Pakistan	0.13	0.14	0.14	0.14	1
Philippines	0.2	0.16	0.16	0.16	1
Russian federation	0.29	0.29	0.27	0.27	2
Thailand	0.18	0.19	0.19	0.2	1
Uganda	0.4	0.39	0.39	0.44	4
United Republic of Tanzania	0.31	0.31	0.33	0.31	3
Viet Nam	0.15	0.15	0.16	0.16	1
Total 25 major producers	9.79	10.01	10.53	10.64	89
Total all other producers	1.39	1.36	1.37	1.38	11
All producers	11.15	11.37	11.91	12.02	100
INLAND WATER CAPTURES, BY REGION					
Asia	7.3	7.44	7.9	7.95	66
Africa	2.84	2.87	3	3	25
Americans	0.57	0.6	0.58	0.63	5
Europe	0.43	0.44	0.41	0.14	3
Oceania	0.02	0.02	0.02	0.02	0
Others					0
World total	11.15	11.37	11.91	12.02	100

Source: SOFIA 2020. – State of Fisheries and Aquaculture in the world

Fig 49: Percentage of Inland Fish production of Major Countries, 2018

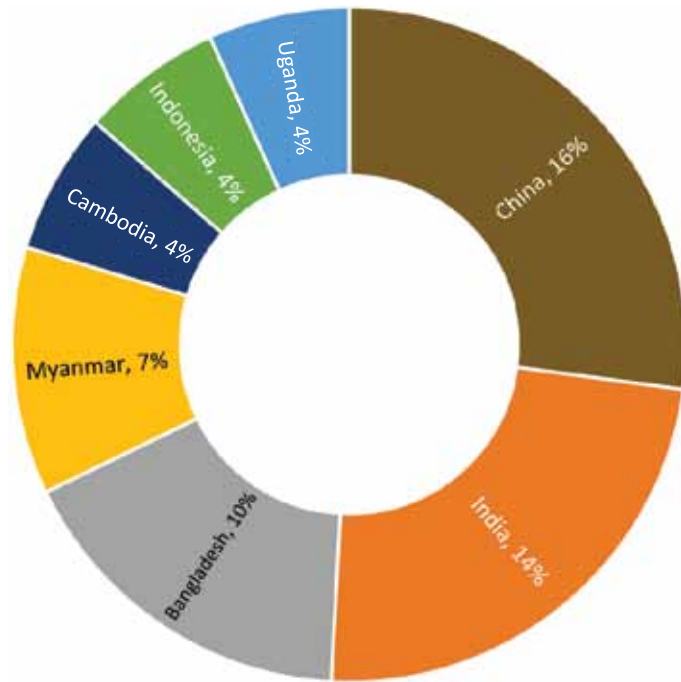


Fig 50: Percentage of Marine Fish production of Major Countries, 2018

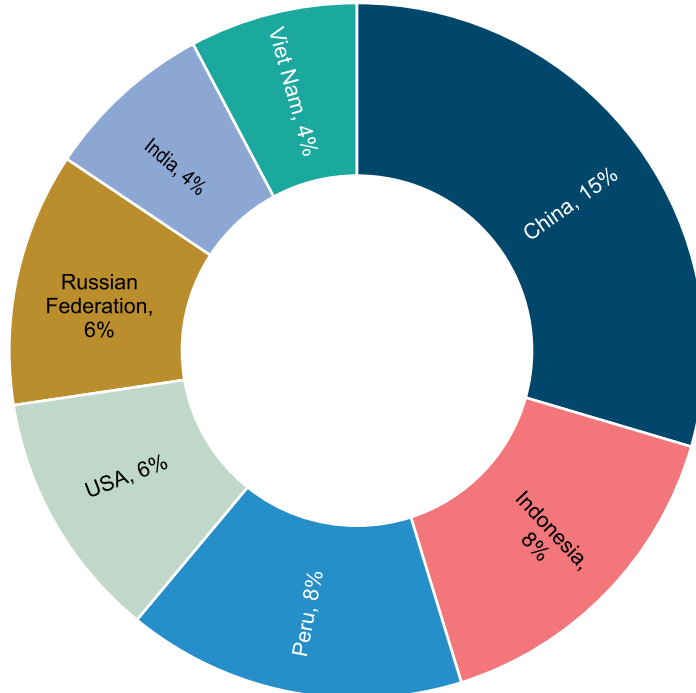


Table 12.6: Marine Capture Production: Major Producing Countries and Territories (million tonnes)

Country or Territory	2015	2016	2017	2018	Percentage of Total 2018
Argentina	0.8	0.74	0.81	0.82	1
Canada	0.82	0.84	0.81	0.78	1
Chile	1.79	1.5	1.92	2.12	3
China	14.39	13.78	13.19	12.68	15
Denmark	0.87	0.67	0.9	0.79	1
Iceland	1.32	1.07	1.18	1.26	1
India	3.5	3.71	3.94	3.62	4
Indonesia	6.22	6.11	6.31	6.71	8
Iran (Islamic Republic of)	0.54	0.59	0.69	0.72	1
Japan	3.37	3.17	3.18	3.1	4
Malaysia	1.49	1.57	1.47	1.45	2
Mauritania	0.39	0.59	0.78	0.95	1
Mexico	1.32	1.31	1.46	1.47	2
Morocco	1.35	1.43	1.36	1.36	2
Myanmar	1.11	1.19	1.27	1.14	1
Norway	2.29	2.03	2.38	2.49	3
Peru	4.79	3.77	4.13	7.15	8
Philippines	1.95	1.87	1.72	1.89	2
Republic of Korea	1.64	1.35	1.35	1.33	2
Russian Federation	4.17	4.47	4.59	4.84	6
Spain	0.97	0.91	0.94	0.92	1
Taiwan Province of China	0.99	0.75	0.75	0.81	1
Thailand	1.32	1.34	1.31	1.51	2
United States of America	5.02	4.88	5.02	4.72	6
Vietnam	2.71	2.93	3.15	3.19	4
Total 25 major producers	65.11	62.58	64.6	67.83	80
Total all other producers	15.39	15.69	16.61	16.58	20
World total	80.51	78.27	81.21	84.41	100

Source: SOFIA 2020. – State of Fisheries and Aquaculture in the world

CHAPTER 13

POST-HARVEST INFRASTRUCTURE



Table 13.1: Major and Minor Fishing Harbours – Outlays and Expenditure, since inception of the scheme in 1964 (Rs in Lakhs)

Plan period	Major Harbours		Minor Harbours and fish landing centre	
	Outlay	Expenditure	Outlay	Expenditure
Third Plan	5	17	0	0
Three Annual Plan (1966-67 to 1968-69)	253	3	295	157
Fourth Plan	1350	158	600	485
Fifth Plan	1800	1210	1200	321
Annual Plan				
i) 1978-79	500	308	600	394
ii) 1979-80	550	206	0	1
Sixth Plan	1700	1320	1900	1795
Seventh Plan	1700	1684	1900	2169
Annual Plan				
i) 1990-91	492	492	432	432
ii) 1991-92	500	545	600	600
Eighth Plan	5213	4575	4675	4903
Ninth Plan*	0	0	11000	6144.96
Tenth Plan*	0	0	10000	7666.84
Eleventh Plan (2007-08 to 2011-12)*	0	0	21571.79	21571.79
12 th Plan (commenced from 2012-13 to 2016-17)*			0	
2012-13	0	0	5375.86	5375.86
2013-14	0	0	5234.605	5234.605
2014-15	0	0	5393.78	5393.78
Blue Revolution Scheme for new projects(2015-16 to 2019-20)				
2015-16	0	0	10076.85	10076.85
2016-17**	0	0	9210.00	9210.00
Total of ongoing 12 th Plan	0	0	35291.095	35287.895
2017-18**	0	0	14814.97	14814.97
2018-19	0	0	29356.17	29356.17
2019-20	0	0	8474.5	7099.00
Total	14,063.00	10,518.00	1,42,710.5	1,33,198.625

* Includes both Major and Minor Fishing harbours

** : Establishment of Fishing Harbours and Fish Landing Canters has been subsumed as a component under the CSS on Blue Revolution: Integrated Development and Management of Fisheries. The scheme is implemented w.e.f. 2016-17 in a convergence mode of implementation with sharing the central liability between the CSS of DoF and Sagarmala of Ministry of Shipping.

*: Includes funds of Rs. 5662.125 lakh released during 2016-17 and Rs. 7496.47 lakh in 2017-18 under Sagarmala of Ministry of Shipping

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 13.2: Major Fishing Harbours

Port	Cost (Rs. Lakhs)*	Year of sanction	Status	Designed Capacity			
				DSV (No)	MFV (No)	Draft (m)	TL
1. Visakhapatnam							
Stage I	955.50	1975	C	90	300	4.5	1,938
Stage II	1,099.20	1978	C				
Stage III	454.30	1998	C				
Stage IV	354.00	2001	C				
2. Chennai							
Stage I	1,334.00	1973	C	50	500	3	1,220
Stage II	850.00	1994	C	No change in capacity. Stage II for additional facilities			
3. Cochin							
Stage I	494.00	1971	C	57	450	6	560
Stage II	77.00 (100)	1993	C	No change in capacity. Stage II for additional facilities			
Modernisation	980.20	2009					
4. Kolkata							
Roychowk	370.00	1971	C	15	--	6	120
5. Paradip							
Paradip	2834.00 (3807)	1990	C	50	500	6	2335
6. Mumbai							
(Sasson Dock)	825 (1,099)	1977	C	--	700	3	1153
7. Petuaghat	6,092.65	2008/2010	C	50	320	3	2871
<p>* -Figures in brackets indicate the revised cost. C - Completed/ Commissioned UC -Under construction DSV -Deep Sea Vessels MFV -Mechanised Fishing Vessels TL -Total length of landing + berthing + outfitting + repair quay/wharf (in meters) Source: Department of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Government of India</p>							

Table 13.3: Fishing Harbours and Fish Landing Centres, constructed / commissioned till, 2019-20

Location	FH/FLC	Sanctioned cost (Rs. Lakhs)	Location	FH/FLC	Sanctioned cost(Rs. Lakhs)
ANDHRA PRADESH			ORISSA		
Kakinada	FH	973.17	Gopalpur	FH	805.30
Nizamapatnam	FH	157.66	Dhamra	FH	70.00
Bhavanapadu	FH	340.00	Naugarh (Astrang)	FH	507.00
Machilipatnam	FH	470.88	Dhamara Stage-II	FH	640.00
Calingapatnam	FLC	60.35	Chandipur	FLC	15.00
Etimoga	FLC	61.57	Pathara	FLC	2.50
Baruva	FLC	83.60	Nairi Stage-I	FLC	5.41
Perupalem	FLC	88.86	Nairi-Stage-II	FLC	6.00
Navvalarevu	FLC	79.35	Jamboo	FLC	73.03
Chintapalli	FLC	79.77	Palaur	FLC	17.00
Pudimadakara	FLC	78.00	Kansabansa	FLC	65.10
Mukkam	FLC	79.77	Soran	FLC	9.97
Mynavanilanka	FLC	59.74	Sabelia	FLC	2.42
Vodarevu	FLC	88.86	Chudamani	FLC	14.06
Gondisamudram	FLC	85.62	Panchubisa	FLC	32.68
Isakapalli Pattapupalem	FLC	84.86	Talchua	FLC	110.70
Thatichetlapalem	FLC	79.00	Kharanasi	FLC	99.90
Bandaruvanipeta	FLC	81.16	Chandrabhaga	FLC	8.32
Mypadu	FLC	92.84	Rushikulya	FLC	9.40
Kothapatanam	FLC	92.47	Tantiapal	FLC	99.06
Anthervedi Pallepalem	FLC	1698.00	Sorala	FLC	70.28
GOA			Bandara	FLC	160.50
Cortalim	FLC	0.51	Khandiapatana	FLC	105.83
Malim	FLC	89.25	Bhusandpur Baliapatpur	FLC	108.60
Cutbona	FLC	89.20	Bahabalpur	FLC	98.04
Qortalim stage II	FLC	89.31	Kirtania	FLC	172.00
Chapora	FLC		Talasari	FLC	162.10
GUJARAT			Gopalpur on Sea	FLC	96.00
Veraval	FH	900.00	Nairi Stage-III	FLC	38.86
Mangrol Stage-I	FH	200.00	TAMIL NADU		
Porbandar	FH	276.00	Tuticorin	FH	210.00
Mangrol Stage-II	FH	701.00	Mallipatnam	FH	10.60
Jhakau	FH	3031.00	Kodiakarai	FH	14.40
Jafrabad	FLC	25.00	Vallinokkam	FH	77.00
Dholai	FH	1477.70	Tondi	FH	56.56
Jakhau-I	FLC	5.00	Pazhayar	FH	67.32
Vansi-Borsi	FLC	16.00	Chinnamuttom	FH	684.00
Kosamba	FLC	13.00	Muttom(BOT Project)	FH	5392.00
Mandvi	FLC	16.00	Chinnamuttom Stage-II	FH	7352.00
Salaya	FLC	17.00	Thengapattinam FH	FH	9740.00

Table 13.3: Fishing Harbours and Fish Landing Centres, constructed / commissioned till, 2019-20

Location	FH/FLC	Sanctioned cost (Rs. Lakhs)	Location	FH/FLC	Sanctioned cost(Rs. Lakhs)
GUJARAT			TAMIL NADU		
Umarsadi	FLC	5.00	Colachal	FH	8775
Jakhau	FLC	5.00	Mookaiyur	FH	11390
Sachana	FLC	20.00	Cuddalore	FLC	12.00
Madhavadi	FLC	17.76	Rameshwaram	FLC	10.00
Surajbari	FLC	31.53	Kottaiapatnam	FLC	22.00
Magod Dungari	FLC	38.74	Muttom	FLC	12.60
Dholai	FLC	54.66	Vallapalam	FLC	7.14
Chorwad	FLC	46.12	Vallavillai	FLC	7.50
Port Onjal	FLC	42.00	Nagapattinam	FLC	0.75
Rajpara	FLC	43.35	Palk Bay	FLC	1.00
Umergaon	FLC	1.00	Erawadi	FLC	26.00
Kolak	FLC	4.15	Poompuhar	FLC	7.87
Hirakot	FLC	0.71	Kodimurai	FLC	7.50
Navapur	FLC	0.61	Punnakkayal	FLC	132.32
Dhamlej	FLC	31.00	Mudasalodi	FLC	132.32
			Pulicat	FLC	132.32
KARNATAKA			Sethubavachatram	FLC	132.32
Karwar Stage-I	FH	30.00	Jagathapathinam	FLC	132.32
Honnavar	FH	75.00	Arcocuttothurai	FLC	132.32
Tadri	FH	4.59	Soliakudi	FLC	132.32
Mangalore Stage-I	FH	33.00	Mondapam	FLC	132.32
Malpe Stage-I	FH	426.00	Nagapattinam	FLC	122.00
Malpe Stage-II	FH	1146.70	KERALA		
Mangaloare Stage -II	FH	75.00	Vizhinjam stage-I	FH	208.00
Karwar Stage-II	FH	130.00	Puthiappa	FH	962.50
Kundapur	FLC	1.00	Munambam	FH	1167.20
Kagal Heni	FLC	0.60	Vizhinjam stage-II	FH	704.00
Gangolli Stage-I	FH	832	Neendakara	FH	672.00
Gangolli	FLC	3.70	Chombal	FH	556.00
Belikeri	FLC	0.99	Mopla Bay	FH	816.00
Keni	FLC	0.99	Thangassery	FH	1930.50
Bhatkal	FLC	6.00	Muthalapozhy	FH	1366.00
Moolky	FLC	0.10	Kayamkulam	FH	624.60
Sadasivgad	FLC	0.99	Thottappally	FH	1458.30
Belambar	FLC	0.99	Ponnani	FH	27.59
Kodibengre	FLC	55.00	Kasaragode	FLC	13.00
Hejmadikudi	FLC	95.00	Cannanore	FLC	1.46
Alvekodi	FLC	223.99	Neeleswaram	FLC	15.00
Belikeri Stage-II	FLC	67.40			

Table 13.3: Fishing Harbours and Fish Landing Centres, constructed / commissioned till, 2019-20

Location	FH/FLC	Sanctioned cost	Location	FH/FLC	Sanctioned cost
KERALA			WEST BENGAL		
Munakkadavu	FLC	19.00	Madanganj	FLC	9.60
Beypore	FLC	2.10	Brajabalapur	FLC	9.65
New Mahe	FLC	24.59	Maya Gaolini ghat	FLC	345.23
Vellayil Beach	FLC	22.00	MAHARASHTRA		
Vallikunu	FLC	17.90	Ratnagiri	FH	1840.50
Chettuvai	FLC	19.50	Agro	FH	414.00
Arthungal	FLC	32.22	Karanja	FLC	11.00
Ponnani	FLC	8.00	Navalgaon	FLC	0.03
Beliapatnam	FLC	13.00	Borli Mandla	FLC	0.52
Thottappally	FLC	30.00	Nandgaon	FLC	0.10
Cheruvathur	FLC	18.00	Nurad	FLC	0.03
Dharmadon	FLC	21.00	Theorinda	FLC	0.01
South Paravoor	FLC	24.94	Ajanala	FLC	0.00
Vizhinjam South	FLC	19.10	Ade-Uttambar	FLC	0.02
Vizhinjam North	FLC	19.10	Borin	FLC	0.03
Chalil Gopalpettah	FLC	25.00	Burondi	FLC	0.05
Quilandy	FLC	23.00	Bagamandla	FLC	1.00
Punnapra	FLC	36.80	Datiware	FLC	0.92
Kattor Pollathai	FLC	50.25	Dahanu	FLC	0.99
Thikkodi	FLC	49.25	Dakti-Dahanu	FLC	0.99
Moylakikadappuram	FLC	85.20	Khardanda	FLC	0.82
Kadapra	FLC		Ekdara	FLC	0.01
WEST BENGAL			Mandavi	FLC	0.51
Fraser Ganj	FH	452.32	Mulgaon	FLC	1.86
Digha Stage-I	FH	139.00	Navapur	FLC	0.20
Digha Stage-II	FH	492.52	Omni-Bhatti	FLC	0.03
Sultanpur	FH	708.16	Thurnvadi	FLC	0.16
(Diamond Harbour)			Thai	FLC	0.55
Harwood point	FH	2462.00	Uttob	FLC	0.02
Namkhana	FLC	7.06	Vashi	FLC	0.31
Jalda	FLC	9.50	Wadrai	FLC	0.74
New Jalda	FLC	5.00	Rajpuri	FLC	0.54
Kharpai	FLC	6.30	Jeevne Bundar	FLC	0.54
Kalinagar	FLC	7.13	Mahim Causeway	FLC	23.07
Bamanagar	FLC	4.18	Alibagh Koliwada	FLC	32.53
Ganeshpur	FLC	5.31	Tarkarli	FLC	53.34
Akhoynagar	FLC	3.08	Taramumbri	FLC	97.02
Junapat	FLC	9.80	Achara Peerwada	FLC	55.16
Soula	FLC	13.27	Rajpuri Koliwada	FLC	73.96

Table 13.3: Fishing Harbours and Fish Landing Centres, constructed / commissioned till, 2019-20

Location	FH/FLC	Sanctioned cost	Location	FH/FLC	Sanctioned cost
MAHARASHTRA			PONDICHERRY		
Ekdara Koliwada	FLC	38.66	Pondicherry	FH	423.00
Agrao	FLC	0.55	Karaikal	FH	3406.50
A & N ISLANDS			Yanam	FH	1885.00
Phoenix Bay	FH	67.00	Mahe	FLC	0.04
Dairy Farm (Junglighat)	FLC	368.00	DAMAN & DIU		
LAKSHADWEEP			Ghoghla	FLC	52.12
Kavaratti	FLC	11.00	Vanakbara	FLC	43.80
Minicoy	FLC	15.52			
Agathi	FLC	5.00			

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 13.4: Fishing Harbours and Fish Landing Centres under construction till 2019-20

LOCATION	FH/ FLC	Sanctioned Cost (Rs. Lakhs)	LOCATION	FH/ FLC	Sanctioned Cost (Rs. Lakhs)
ANDHRA PRADESH			MAHARASHTRA		
1. Juvvaladinne	FH	28880.00	1. Arnala FH	FH	6156.00
2. Biyyaputhippa	FLC	1358.00	2. Mirkarwada (Ratnagiri)	FH	7180.88
GOA			3. Modernization of Sassoon Dock	FH	5217.00
1. Malim	FH	1333.00	4. Karanja	FH	14980.00
2. Cutbona	FH	2874.00	5. Anandwadi	FH	8844.00
3. Chapora	FH	3705.00	ODISHA		
4. Cortalim	FH	506.00	1. Penthakata	FLC	80.20
GUJARAT			2. Chandipur	FH	4994.00
1. Mangrol modernization	FH	614.52	3. Dhamra (Modernization)	FH	1310.00
2. 3 rd Stage of Mangrol	FH	15583.00	TAMIL NADU		
KARNATAKA			1. Veerapandiapattinam	FLC	132.32
1. Mangalore FH Stage-III	FH	5760.00	2. Poompuhar (FH)	FH	14800.00
2. Malpe FH Stage-III	FH	3715.00	3. Kunthukal	FLC	7400.00
3. Honnavar Stage-II	FH	4744.00	PUDUCHERRY		
4. Amadalli FH (Moder)	FH	1874.00	1. Mahe	FH	7162.00
5. Gangoli FH Stgae-II	FH	10211.00	2. Puducherry FH (Up-gradation)	FH	1563.00
6. Kulai	FH	19651.00			
7. Hejamadikodi	FH	13860.00			
8. Taining walls at Alvekodi and Tenginagundi FLCs	FLCs	8608.00			
KERALA					
1. Koyilandi FH	FH	6399.00			
2. Thalai FH	FH	3479.50			
3. Cheruvathur FH	FH	2906.00			
4. Chettuva FH	FH	3024.00			
5. Thanur (FH)	FH	4487.00			
6. Vellayil (FH)	FLC	3930.20			
7. Arthungal (FH)	FH	4939.00			
8. Munakkakkadavu (FLC)	FLC	231.00			
9. Manjeshwaram (FH)	FH	4880.00			
Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying					

Table 13.5: State-wise details of fishing harbours and fish landing centres completed/commissioned and under construction with the central assistance under the CSS								
S. No.	Name of the State/Union Territory	Notified Landing Centres	Centres taken up for development under CSS	FISHING HARBOURS			FISH LANDING CENTRES	
				Major fishing harbours commission	Minor fishing harbours		Commissioned	Under construction
					Commissioned	Under construction		
(i)	(ii)	(iii)	(iv)	(v)	(vi)	(vii)	(viii)	(ix)
1	West Bengal	66	20	2	5	-	13	-
2	Odisha	73	35	1	4	2	28	-
3	Andhra Pradesh	350	28	1	4	1	18	4*
4	Tamil Nadu	302	36	1	12	1	20	2
5	Pondicherry	41	5	-	3	1	1	-
6	Kerala	204	51	1	15	7	27	1
7	Karnataka	115	28	-	10	5	13	-
8	Goa	34	9	-	-	4	5	-
9	Maharashtra	173	43	1	2	4	35	1
10	Gujarat	107	28	-	6	1	21	-
11	Daman & Diu	12	2	-	-	-	2	-
12	Andaman & Nicobar Islands	51	19	-	1	-	1	17**
13	Lakshadweep	20	3	-	-	-	3	-
	Total	1548	307	7	62	26	187	25

* 3 FLCs approved under Tsunami Rehabilitation Package (TRP) and under CSS
 ** 4 FLCs approved under the Tsunami Rehabilitation Package (TRP). Besides, 13 FLCs under the UT plan.
 Creation of infrastructure facilities at a total of 307 fishing centres against 1547 existing fishing centres in the Country has been taken up, which forms about 19.78% coverage.
 Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Total : 12 FHs (TN :3FHs, AP : 4 FHs and Guj : 5 FHs)

Table 13.6: Details of Fishing harbour projects approved under the Fisheries and Aquaculture Infrastructure Development Fund (FIDF) of Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying.		
1 Tamil Nadu		
S. No.	Name of the Project	Total Project Cost (Rs. In crore)
1	Tharangampadi in Nagapatinam	120.00
2	Thiruvottriyur Kuppam in Tiruvallur District	200.00
3	Development of existing Fishing Harbour at Mudhunagar in Cuddalore	100.00
	Total	420.00
2 Andhra Pradesh		
S. No.	Name of the Project	Total Project Cost (Rs. In crore)
1	Uppada in East Godavari	289.40
2	Vodarevu in Prakasham	409.22
3	Machilipattinam in Krishna	252.00
4	Nizampattinam in Guntur	340.78
	Sub Total	1291.40
3 Gujarat		
S. No.	Name of the Project	Total cost (Rs. In crore)
1	Development of Fishery Harbour at Navabandar in Junagadh District	295.85
2	Development of Fishery harbour at Madhwa in Junagadh District	175.07
3	Development of Fishery Harbour at Veraval Phase-2 in Junagadh District	260.00
4	Development of Fishery Harbour Porbandar Phase-2 in Porbandar District	392.00
5	Development of Fishery Harbour at Sutrapada in Gir Somnath	232.00
	Total	1354.92
Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying		

Table 13.7: Fishing Projects taken up under Blue Revolution Scheme

S. No.	Name of FH/FLC	Date of Approval	Approved project cost (Rs. In crore)
MAHARASHTRA			
1	Modernisation of Sassoon Dock FH	Aug-16	52.17
2	Karanja FH	Mar-18	149.8
3	Anandwadi (FH)	Mar-18	88.44
	Total (MH)		290.41
GUJARAT			
4	3 rd Stage of Mangrol FH	Sep-17	155.83
	Total (GU)		155.83
KARNATAKA			
5	Kulai FH	Mar-18	196.51
6	Hejmadi Kodi FH	Jul-18	138.6
7	Taining walls at Alvekodi and Tenginagundi FLCs	Mar-20	86.08
	Total (KA)		421.19
TAMIL NADU			
8	Mookaiyur FH	Sep-16	113.90
9	Kunthukal FLC	Jul-18	74.00
	Total (TN)		187.90
ODISHA			
10	Chandipur FH	Jul-18	49.94
	Total (OR)		49.94
PUDUCHERRY			
11	Up-gradation of Puducherry FH	Jan-19	15.63
	Total (PU)		15.63
ANDHRA PRADESH			
12	Biyyaputhippa FLC	Mar-19	13.58
13	Juvvaladinne	Mar-20	288.8
	Total (AP)		302.38
	Grand Total		1423.28

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 13.8: Region-wise Cold Storages

Centre	Region-wise Cold Storages with Capacity - as on 31/03/2019		Region-wise Cold Storages with Capacity - as on 31/03/2020	
	No.	Capacity	No.	Capacity
RO Chennai	46	41,113.00	48	41,760.00
RO Kochi	131	63,759.40	139	73,377.40
RO Kolkata	51	15,214.48	53	15,728.48
RO Mumbai	61	43,412.10	49	51,007.60
RO Veraval	93	45,485.00	102	52,503.00
RO Vizag	23	12,224.00	28	17,508.10
SRO BBSR	31	17,150.00	32	18,763.00
SRO Bhimavaram	45	21,541.00	52	34,447.50
SRO Goa	16	7,386.50	16	7,386.50
SRO Guwahati	0	0	0	0
SRO Mangalore	27	13,252.70	33	25,001.70
SRO Porbandar	24	14,033.80	24	14,123.80
SRO Quilon	26	8,795.50	26	8,795.50
SRO Tuticorin	38	18,100.20	40	18,657.20
TPO New Delhi	0	0	0	0
Total	612	3,21,467.68	642	3,79,059.78

Source: Marine Products Export Development Authority (MPEDA)

CHAPTER 14

FISHERIES DEVELOPMENT



Table 14.1: Statement of Physical achievements under the component of Motorization of Traditional Craft (MTC) under Blue Revolution Scheme in various States/UTs during last 5 years from 2014-15 to 2018-19

S. N	Name of the States	2014-15	2015-16	2016-17	2017-18	2018-19	Total
1	A & N Islands	76	50	100	100	100	426
2	Andhra Pradesh				500	300	800
	Daman & Diu	25					25
3	Goa	133		60	48	50.00	291
4	Gujarat	733		100			833
5	Karnataka	304	386	300	219	300.00	1509
6	Kerala		400				400
7	Lakshadweep				111	111	222
8	Odisha	1658		437	900	1000	3995
9	Puducherry			167		40	207
10	Tamil Nadu	634	0			2600	3234
	Grand Total	3563	836	1164	1878	4501	11942

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.2: Safety of fishermen at sea Physical under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands	1756					1756
2	Andhra Pradesh	1625					1625
3	Goa		100				100
4	Karnataka				375		375
5	Kerala			120	200		320
6	Maharashtra	224	2735				2959
7	Lakshadweep					35	35
8	Odisha	450	95		500		1045
9	Puducherry				120		120
10	Tamil Nadu	1667				4997	6664
	Grand Total	5722	2930	120	1195	5032	14999

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.3: Assistance to Traditional/Artisanal fishermen for Procurement of FRP boats upto 10m OAL Physical units under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands			20	15		35
2	Andhra Pradesh			50	100		150
3	Daman & Diu						0
4	Goa		25	20	15		60
5	Karnataka		24		30		54
6	Kerala			120	200		320
7	Lakshadweep					110.00	110
8	Maharashtra		10				10
9	Odisha		100	75			175
10	Tamil Nadu		100		200		300
	Grand Total	0	259	285	560	110.00	1214.00

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.4: Open Sea Cage Culture Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands			7			7
2	Andhra Pradesh			318			318
3	Goa			120			120
4	Karnataka		60				60
5	Kerala		160				160
6	Maharashtra		5		100		105
	Grand Total	0	225	445	100	0	770

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.5: Seaweed Cultivation- Rafts sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands			10			10
2	Andhra Pradesh			10000			10000
3	Gujarat		100				100
4	Karnataka				500		500
	Grand Total	0	100	10010	500.00		10610.00

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.6: Bivalve Culture (Rafts) Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Karnataka		50		200		250
2	Kerala			2000	1000		3000
3	Maharashtra		20				20
	Grand Total	0	70	2000	1200	0	3270

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.7: Pearl Culture Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
		Physical (Unit)	Physical (Unit)	Physical (Unit)	Physical (Unit)	Physical (Unit)	Physical (Unit)
1	A & N Islands			1			1
2	Gujarat		1				1
3	Rajasthan			1	2		3
4	Maharashtra				1		1
	Grand Total	0	1	2	3	0	6

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.8: Introduction of deep-sea fishing vessels (24m OAL and above) under PPP mode Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands				2		2
2	Andhra Pradesh			12			12
3	Daman & Diu			5			5
4	Gujarat			10	135		145
5	Tamil Nadu			663			663
6	Karnataka		1				1
7	Odisha					4	4
	Grand Total	0	1	690	137	4.00	832

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.9: Renovation of Ice Plant Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Daman & Diu			1			1
2	Karnataka		120			7.00	127
	Grand Total	0	120	1	0	7	128

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.10: Establishment of FH/FLC Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh					2	2
2	Goa		1				1
3	Gujarat						0
4	Karnataka	Committed liability			1	1	2
5	Kerala						0
6	Maharashtra		3				3
7	Odisha				1		1
8	Puducherry						0
9	Tamil Nadu		1				1
10	West Bengal						0
	Grand Total	0	5	0	2	3	10

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.11: Ice Plants Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh		60		1		61
2	Chhattisgarh		3				3
3	Goa		3				3
4	Gujarat			3			3
5	Karnataka			7.00		4.00	11
6	Madhya Pradesh		2	1		30	33
7	Maharashtra		1	4	70		75
8	Mizoram			2			2
9	Nagaland						0
10	Tamil Nadu						0
11	Telangana				30		30
	Grand Total	0	69	17	101	34	221

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.12: Cold Storage Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh				1		1
2	Goa		3				3
3	Jharkhand		1				1
4	Karnataka			1			1
5	Maharashtra			2			2
	Grand Total	0	4	3	1	0	8

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.13: Ice Plant cum Cold Storage Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	Total
1	Jammu & Kashmir		25			25
2	Karnataka		78			78
3	Maharashtra			1		1
	Grand Total	0	103	1	0	104

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.14: Refrigerated/ Insulated Truck 10t capacity Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh				20		20
2	Andaman & N Is.			1	3		4
3	Arunachal Pradesh			1			1
4	Assam			1			1
5	Bihar				100		100
6	Chhattisgarh				1	1	2
7	Daman & Diu			3			3
8	Goa		13	4	3		20
9	Karnataka		5	1.00	15.00		21
10	Madhya Pradesh			2			2
11	Maharashtra			6	9		15
12	Meghalaya			4	2		6
13	Odisha				7		7
14	Rajasthan				2		2
15	West Bengal			2			2
	Grand Total	0	18	25	162	1	206

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.15: Insulated Truck 6 t capacity Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Arunachal Pradesh			1			1
2	A & N Islands	2		1	1		4
3	Andhra Pradesh		10				10
4	Assam	1		1			2
5	Goa		6				6
6	Karnataka		2	1	35		38
7	Madhya Pradesh					1	1
8	Maharashtra			6	2		8
9	Meghalaya			4			4
10	Odisha				29		29
11	Telangana	2					2
12	Uttarakhand	1	1				2
13	West Bengal		3	2			5
	Grand Total	6	22	16	67	1	112

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.16: Establishment of Retail Fish Outlet Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands	1					1
2	Andhra Pradesh		1				1
3	Assam			2			2
4	Bihar				9		9
5	Chhattisgarh		20	2	40		62
6	Himachal Pradesh				3		3
7	Jammu & Kashmir						0
8	Jharkhand				40		40
9	Karnataka	172	3				175
10	Kerala		50				50
11	Madhya Pradesh		20		10		30
12	Maharashtra	25	4	1	1		31
13	Manipur						0
14	Meghalaya	40	5	20	52		117
15	Nagaland						0
16	Odisha	24		1			25
17	Puducherry						0
18	Punjab		20				20
19	Rajasthan		1				1
20	Tamil Nadu	319	2				321
21	Telangana	1	2		100		103
22	Tripura						0
23	Uttar Pradesh		1			1	2
	Grand Total	582	129	26	255	1	993

Source: Department of Fisheries, State Govt./ UT's Administration

Table 14.17: Setting up mobile/retail fish outlet (Kiosk) Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh		50				50
2	Bihar				31		31
3	Chhattisgarh				5		5
4	Goa		5	4			9
5	Karnataka		3	1	10		14
6	Madhya Pradesh			2	26		28
7	Maharashtra			4			4
8	Odisha	5					5
9	Punjab		25				25
10	Telangana				50		50
11	Uttarakhand					4	4
	Grand Total	5	83	11	122	4	225

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.18: Auto Rickshaw with Ice box units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands	10		10	10		30
2	Andhra Pradesh	1			200		201
3	Assam	43					43
4	Chhattisgarh		38	10	10	10	68
5	Goa		20				20
6	Haryana			80			80
7	Jammu & Kashmir		20	20			40
8	Jharkhand				10		10
9	Karnataka				10.00		10
10	Madhya Pradesh					54	54
11	Maharashtra			7	1		8
12	Odisha		50	80	50		180
13	Rajasthan				1		1
14	Tripura		51			20	71
15	Uttar Pradesh		6		10		16
	Grand Total	54	185	207	302	84	832

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.19: Motor Cycle with Ice box Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Assam	128		3			131
2	Chhattisgarh		166	100	200	200	666
3	Goa		20	20	10		50
4	Jammu & Kashmir		1016				1016
5	Karnataka		150		100		250
6	Madhya Pradesh		14	65	50	682	811
7	Maharashtra			11	66		77
8	Odisha		500		300		800
9	Rajasthan				1		1
10	Tamil Nadu	887					887
11	Uttar Pradesh		56		700	11	767
11	Uttarakhand			8			8
12	West Bengal		100	50			150
	Grand Total	1015	2022	257	1427	893	5614

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.20: Bicycle with Ice box Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Assam	1277					1277
2	Chhattisgarh		800				800
3	Jammu & Kashmir			1200			1200
4	Uttar Pradesh		84				84
	Grand Total	1277	884	1200	0	0	3361

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.21: Solar power support system Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh		10				10
2	Arunachal Pradesh			5			5
3	Assam			45			45
4	Chhattisgarh				10		10
5	Himachal Pradesh		4	7	2		13
6	Jammu & Kashmir			3			3
7	Jharkhand				10		10
8	Karnataka				10		10
9	Madhya Pradesh					3	3
10	Nagaland				10		10
11	Punjab				15		15
12	Sikkim					2	2
13	Tamil Nadu		4				4
14	Tripura		3		4	5	12
15	Uttar Pradesh		9	13		43	65
16	Uttarakhand		1	15			16
	Grand Total	0	31	88	61	53	233

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.22: Innovative Activities Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Arunachal Pradesh			23			23
2	Assam			1			1
3	Himachal Pradesh				1		1
4	Punjab		1				1
5	Sikkim		1				1
6	Telangana				1		1
7	Uttar Pradesh	1					1
8	Uttarakhand	1					1
9	West Bengal			1			1
	Grand Total	2	2	25	2	0	31

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.23: Saving cum Relief Assistance provided to fishers under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Bihar	10000					10000
2	Chhattisgarh	8000	6665	6666	8500	7740	37571
3	Goa	5197	5416				10613
4	Himachal Pradesh	4641	5092		2696	3717	16146
5	Karnataka	39048		34239		35757	109044
6	Kerala	197058				680250	877308
7	Madhya Pradesh	16143	6667	10000	15100	12318	60228
8	Maharashtra		2000				2000
9	Mizoram				5355	6283	11638
10	Odisha	25110		10000		5992.00	41102
11	Puducherry	27691	3333		37488	15379	83891
12	Rajasthan	1451					1451
13	Tamil Nadu	108031					108031
14	Telangana	1123					1123
15	Tripura			835	1000		1835
	Grand Total	443493	29173	61740	70139	767436	1371981

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.24: Number of Housing for fishers sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands	100					100
2	Andhra Pradesh	1300			1340	1500	4140
3	Arunachal Pradesh	92		48	100		240
4	Assam		75	50	200		325
5	Bihar				1000		1000
6	Chhattisgarh	400			200		600
7	Gujarat	100	100				200
8	Himachal Pradesh	133			200	200	533
9	Jammu & Kashmir	133		200	200	657	1190
10	Jharkhand	1000	417		1000		2417
11	Kerala		167		132		299
12	Madhya Pradesh	195	167				362
13	Maharashtra		65				65
14	Mizoram	200		43	50	80	373
15	Manipur			34			34
16	Nagaland	270				1800	2070
17	Rajasthan		20				20
18	Tripura	250		140	1493		1883
19	Uttar Pradesh	327		313		1400	2040
20	Uttarakhand	309	666		600		1575
21	West Bengal			122	300		422
	Grand Total	4809	1677	950	6815	5637	19888

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.25: Construction of community hall Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Assam		1				1
2	Himachal Pradesh			1			1
3	West Bengal			1			1
	Grand Total	0	1	2	0	0	3

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.26: Insurance for Active fishers provided under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
		Physical (No.)	Physical (No.)	Physical (No.)	Physical (No.)	Physical (No.)	Physical (No.)
1	A & N Islands	14839	14839	14839	13296	-	44517
2	Andhra Pradesh	404242	405347		0	-	809589
3	Arunachal Pradesh	10000	7000	1000	1027	1027	18000
4	Assam	164939	157325	157325	139739	142716	479589
5	Bihar	300000	300000	300000	58277	100000	900000
6	Chhattisgarh	210000	210000	210000	205897	214552	630000
7	Daman & Diu	9500	9500	9500	9266	-	28500
8	Delhi			400	103	200	400
9	Goa	12721	11847	11840	11840	-	36408
10	Gujarat	218270	218270	218270	37856	218270	654810
11	Himachal Pradesh	12153	12901	13413	12650	12650	38467
12	Jammu & Kashmir	15000	15000	15000	15961	15402	45000
13	Jharkhand	114500	126000	126000	131451	140000	366500
14	Karnataka	204689	204689	204689	40641	204689	614067
15	Kerala	237501			0		237501
16	Lakshadweep	12052	12052	12052	1204		36156
17	Madhya Pradesh	175199	180988	184933	116941		541120
18	Maharashtra	323838	323838	323838	0	388038	971514
19	Manipur	12000	12000	1000	0		25000
20	Mizoram	10000	10000	1000	1187		21000
21	Odisha	1111111	1150000	1150000	1150000	1150000	3411111
22	Puducherry	54367	54367	54367	43745	29887	163101
23	Punjab	1500	5000	5000	3416	3500	11500
24	Rajasthan	10833	11027	11220	11220	2122	33080
25	Sikkim	7000	7000	1000	411		15000
26	Tamil Nadu	716308	666380	666380	481386	524054	2049068
27	Telangana	276799	326154	326154	265236	303000	929107
28	Tripura	1000	1000	1000	2072	2600	3000
29	Uttar Pradesh	193000	193000	193000	103333	134014	579000
30	Uttarakhand	2000	2000	1000	1324		5000
31	West Bengal	221563			132995		221563
	Grand Total	5056924	4647524	4214220	3039374	3586721	13918668

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.27: Training, Skill development Physical & Financial status under Fisheries Sector for FY 2015-19 (Rs in Lakhs)							
S.N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
		Physical (No.)	Physical (No.)	Physical (No.)	Physical (No.)	Physical (No.)	Physical (No.)
1	Andhra Pradesh		750	2250	525	8685	12210
2	Arunachal Pradesh			100		350	450
3	Assam	60	290	600	500	800	2250
4	Bihar			450	400		850
5	Chhattisgarh	270		600	800	500	2170
6	Goa		200	100			300
7	Gujarat	20		650	250		920
8	Haryana						0
9	Himachal Pradesh	900		200	100	250	1450
10	Jammu & Kashmir	20	520	200	225	100	1065
11	Jharkhand	160	728	700	750		2338
12	Karnataka		50	5525	300		5875
13	Kerala			350	400	1800	2550
14	Madhya Pradesh		150		200		350
15	Maharashtra	250		800	505	1250	2805
16	Manipur	1110	300	200	225	1000	2835
17	Meghalaya	2000					2000
18	Mizoram	256	200	100	100	900	1556
19	Nagaland	440				600	1040
20	Odisha	300		1500		860	2660
21	Punjab	500		150	500	500	1650
22	Rajasthan			775	650	500	1925
23	Sikkim				250		250
24	Tamil Nadu	20		2575	3850		6445
25	Telangana	500	70	3675	625	2220	7090
26	Tripura	1450	250	200	200	1700	3800
27	Uttar Pradesh	1130		3650		250	5030
28	Uttarakhand			100			100
29	West Bengal	120	90	2200	2300	2000	6710
	Grand Total	9506	3598	27650	13655	24265	78674

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.28: Construction of new ponds/Tanks Areas (Ha) for 2014-15 to 2019-20

S. N.	Name of the States	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	A & N Islands			25	0.9	4.1		30.0
2	Andhra Pradesh	57.19	54.61	0				111.8
3	Assam	124.29	304.82	181.65				610.8
4	Arunachal Pradesh					50		50.0
5	Bihar	10	9.63	150.06		500		669.7
6	Chhattisgarh	669		200	288.82	300	550	2007.8
7	Goa				2			2.0
8	Gujarat			16	9.32			25.3
9	Haryana	1786	258.46	100	50	200		2394.5
10	Himachal Pradesh		22	15	0.57	20		57.6
11	Jammu & Kashmir			10	10			20.0
12	Karnataka			68	150.03	105		323.0
13	Kerala		977	15				992.0
14	Madhya Pradesh	1315	227	122	28	100	327.3	2119.3
15	Maharashtra			115		19.21		134.2
16	Manipur	843	450	0	77	100		1470.0
17	Meghalaya			70.5		1000		1070.5
18	Mizoram	2700	1275	25		30		4030.0
19	Nagaland	304	488	50				842.0
20	Odisha	1056	2447	340		130		3973.0
21	Puducherry			11				11.0
22	Punjab			1.12		1000		1001.1
23	Rajasthan			8			10	18.0
24	Tamil Nadu	10.44		100				110.4
25	Telangana	13.48		20	100	500		633.5
26	Tripura		543		208.52	50	20	821.5
27	Uttar Pradesh	3739	3691	22	25	375	300	8152.0
28	Uttarakhand		60	10			11.5	81.5
29	West Bengal	552	931	77				1560.0
	Grand Total	13179.4	11738.52	1752.33	950.16	4483.31	1218.80	33322.52

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.29: Renovation of existing ponds/tanks (Ha) units sanctioned under Blue Revolution Scheme for 2015-16 to 2018-19

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2018-19	Total
1	A & N Islands			30			30
2	Andhra Pradesh			145			145
3	Assam	226.58	32				258.58
4	Arunachal Pradesh				50		50
5	Bihar						0
6	Chhattisgarh	350	100				450
7	Goa		26.7	24			50.7
8	Gujarat			2			2
9	Haryana	196	210				406
10	Himachal Pradesh		10				10
11	Jammu & Kashmir		30				30
12	Karnataka		10				10
13	Kerala		80	150			230
14	Madhya Pradesh	947		9.5			956.5
15	Maharashtra		50				50
16	Manipur						0
17	Meghalaya	4	44				48
18	Mizoram	1000	100				1100
19	Nagaland		120				120
20	Odisha		138	10			148
21	Puducherry						0
22	Punjab		10.16				10.16
23	Rajasthan						0
24	Tamil Nadu	3	70				73
25	Telangana						0
26	Tripura		12.4	3.56			15.96
27	Uttar Pradesh		325	325			650
28	Uttarakhand	40	5		5.37		50.37
29	West Bengal		72.9	24.56			97.46
	Grand Total	2766.58	1446.16	723.62	55.37	0	4991.73

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.30: Renovation of MNERGA ponds & tanks with Input developed under Blue Revolution Scheme for 2015-16 to 2017-18

S. N.	Name of the States	2015-16	2016-17	2017-18	2017-18	Total
		Physical (Ha.)	Physical (Ha.)	Physical (Ha.)	Physical (Ha.)	Physical (Ha.)
1	Bihar		260			260
2	Karnataka				139	139
3	Madhya Pradesh				200	200
4	Maharashtra				66.8	66.8
5	Meghalaya				50	50
6	Mizoram					0
7	Tamil Nadu		30			30
8	Tripura		280		387.5	667.5
9	Uttar Pradesh				500	500
	Grand Total	0	570	0	1343.3	1913.3

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.31: Establishment of BW Hatcheries Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2019-20	Total
1	Andhra Pradesh			6		6
2	Gujarat		3			3
3	Madhya Pradesh		1			1
4	Odisha			8		8
5	Rajasthan			1		1
6	Karnataka				1	1
	Grand Total	0	4	15	1	20

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.32: Establishment of Fish Seed Hatcheries Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Arunachal Pradesh			1	2		3
2	Assam		10	22	20		52
3	Bihar		20		4		24
4	Chhattisgarh		4	3	2		9
5	Gujarat		5				5
6	Haryana			2			2
7	Himachal Pradesh		4	16	12		32
8	Jammu & Kashmir	0	2	2	3		7
9	Jharkhand		4	4			8
10	Karnataka		1		10		11
11	Madhya Pradesh		4	10	8		22
12	Maharashtra	1	9		7		17

Table 14.32: Establishment of Fish Seed Hatcheries Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
13	Manipur	0		6	6		12
14	Meghalaya	2	3				5
15	Mizoram	0	4	4	4	7	19
16	Nagaland	0	2		4		6
17	Odisha	0	10	12			22
18	Punjab			10			10
19	Rajasthan		1			2	3
20	Sikkim				3		3
21	Tamil Nadu	0		5			5
22	Telangana		5	17	60		82
23	Tripura		3	10	2	2	17
24	Uttar Pradesh		10	33	2	7	52
25	Uttarakhand		1				1
26	West Bengal		2	4			6
	Grand Total		104	161	149	18	435

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.33: Construction of Brackish water Nursery pond (Ha) sanctioned under Blue Revolution Scheme for 2015-16 to 2018-19

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	Total
1	Andhra Pradesh			70		70.00
2	Gujarat			1		1.00
3	Odisha				48	48.00
	Grand Total	0	0	71	48	119

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.34: Construction of Brackish water Grow out pond (Ha) sanctioned under Blue Revolution Scheme for 2015-16 to 2017-18

S. N.	Name of the States	2015-16	2016-17	2017-18	Total
1	Andhra Pradesh			75	75
2	Goa			1	1
3	Gujarat			22	22
4	Tamil Nadu			60	60
5	Odisha			100	100
	Grand Total	0	0	258	258

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.35: Construction of Raceways Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Arunachal Pradesh			22	40		62
2	Himachal Pradesh		106	117	330		553
3	Jammu & Kashmir		114	59	80		253
4	Meghalaya				10		10
5	Mizoram		10				10
6	Sikkim		100		250	310	660
7	Uttarakhand		60	96	158	138	452
8	West Bengal		25				25
	Grand Total	0	415	294	868	448	2025

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.36: Development of Waterlogged Area (Ha) sanctioned under Blue Revolution Scheme for 2015-16 to 2018-19

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2018-19	Total
1	Bihar				1123.6		1123.6
2	Haryana		20		100		120
3	Kerala			80	80		160
4	Mizoram		10		20		30
5	Odisha		55				55
6	West Bengal		160				160
7	Uttar Pradesh					7	7
8	Uttarakhand				10	2	12
	Grand Total	0	245	80	1333.6	9	1667.6

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.37: Productive Utilization for Pond Construction in Alkaline Saline (Ha) sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Delhi			10			10
2	Haryana		15	21	150.00		186
3	Himachal Pradesh		25				25
5	Punjab			50	100		150
6	Rajasthan					10	10
7	Uttar Pradesh					10	10
	Grand Total	0	40	81	250	20	391

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.38: Fish Seed Rearing Area (ha) sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh			100			100
2	Arunachal Pradesh			4			4
3	Assam	20		90			110
4	Bihar				1151		1151
5	Chhattisgarh		13.5	142	150	250	555.5
6	Haryana			256			256
7	Himachal Pradesh			13			13
8	Karnataka		10	2			12
9	Madhya Pradesh			25	52	48	125
10	Maharashtra		10		10		20
11	Manipur			11.4	60		71.4
12	Mizoram		10	9.4	22	30	71.4
13	Nagaland	15			60		75
14	Rajasthan			33	50		83
15	Telangana		10	76	500		586
16	Tripura			21			21
17	Uttar Pradesh	41.91	20	265		23	349.91
18	Uttarakhand		14	30	26.15		70.15
19	West Bengal			5			5
	Grand Total	76.91	87.5	1082.8	2081.15	351	3679.36

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.39: Brood Bank Facility Physical sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Chhattisgarh				1		1
2	Jammu & Kashmir			1			1
3	Meghalaya			1	1		2
4	Punjab		1	1			2
5	Telangana				1		1
6	Uttar Pradesh			1			1
7	Uttarakhand			1	1		2
	Grand Total	0	1	5	4	0	10

*Punjab has been sanctioned 1 integrated Hatchery @cost of Rs 10.00 Crore
Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.40: Craft & Gear for Inland Capture Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh		500	480			980
2	Arunachal Pradesh				10		10
3	Assam			592			592
4	Goa		50	20	10		80
5	Haryana		37				37
6	Himachal Pradesh				250		250
7	Jammu & Kashmir		59				59
8	Karnataka				500		500
9	Maharashtra		25		22		47
10	Mizoram		5				5
11	Odisha		300		250		550
12	Uttar Pradesh				10		10
13	Tripura					250	250
	Grand Total	0	976	1092	1052	250	3370

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.41: Construction of landing centers Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh		50				50
2	Chhattisgarh				10	20	30
3	Goa		3	2	1		6
4	Himachal Pradesh						0
5	Jammu & Kashmir		5				5
6	Jharkhand				10		10
7	Mizoram		5	3			8
8	Odisha		1		30		31
9	Telangana		4				4
	Grand Total	0	68	5	51	20	144

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.42: Number of Conservation and Awareness in Riverine Fisheries programme sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Arunachal Pradesh				1		1
2	Haryana		10				10
3	Jammu & Kashmir		1				1
4	Karnataka		1				1
5	Meghalaya		25				25
6	Sikkim		1				1
7	Tripura					1	1
8	West Bengal						0
9	Uttara Khand			1			1
	Grand Total	0	38	1	1	1	41

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.43: Integrated Development of Reservoirs Physical & Financial status under Fisheries Sector for FY 2015-16 to 2019-20 (Rs in Lakhs)

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Himachal Pradesh		11				11
2	Karnataka		1		1		2
3	Madhya Pradesh		16				16
	Grand Total	0	28	0	1		29

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.44: Establishing fish feed mills (1-5q/d) Physical & Financial status under Fisheries Sector for FY 2015-16 to 2019-20 (Rs in Lakhs)

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Arunachal Pradesh				1		1
2	Andhra Pradesh		10				10
3	Assam		12		2		14
4	Bihar		5				5
5	Chhattisgarh		5				5
6	Gujarat		5				5
7	Himachal Pradesh				15		15
8	Jharkhand		1		1		2
9	Madhya Pradesh		5	5	10		20
10	Maharashtra		10		32		42
11	Meghalaya				10		10
12	Mizoram		2			5	7
13	Telangana		4				4
14	Uttar Pradesh		1	9	2	42	54
15	Uttarakhand				2	1	3
16	West Bengal		2				2
	Grand Total	0	62	14	75	48	199

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.45: Establishing fish feed mills(6-10t/hr) Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh		3				3
2	Bihar		1				1
3	Chhattisgarh		1			3	4
4	Gujarat		1	1			2
5	Jharkhand		2				2
6	Karnataka				4		4
7	Madhya Pradesh					4	4
8	Punjab		6				6
9	Telangana				2		2
10	Uttar Pradesh		1				1
11	Uttarakhand			1			1
	Grand Total	0	15	2	6	7	30

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.46: Installation of cages/pens in reservoirs Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
1	Andhra Pradesh	288	72	67			427
2	Assam				8		8
3	Bihar		84		550		781
4	Chhattisgarh			117	48	960	1125
5	Daman & Diu			25			25
6	Delhi			48			48
7	Goa			12			12
8	Haryana						0
9	Himachal Pradesh				24		24
10	Jharkhand		2815				2815
11	Jammu & Kashmir				72		72
12	Karnataka		96		24		120
13	Kerala		200				200
14	Madhya Pradesh		310	250	120	66	746
15	Maharashtra		60		5380		5440
16	Manipur			24	48		72
17	Meghalaya			20			20
18	Mizoram		50	66			116
19	Odisha			24			24
20	Rajasthan		170				170
21	Tamil Nadu						40
22	Telangana		800		300		1116
23	Tripura		40	64		64	168

Table 14.46: Installation of cages/pens in reservoirs Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2019-20	Total
24	Uttar Pradesh			260		260	520
25	Uttarakhand		48	48			96
	Grand Total	288	4745	1025	6574	1350	13982

Source: Department of Fisheries, State Govt./ UT's Administration

Table 14.47: Re-circulatory Aquaculture Systems Physical units sanctioned under Blue Revolution Scheme for 2015-16 to 2018-19

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	2018-19	Total
1	Andhra Pradesh			5			5
2	Assam			4	10		14
3	Bihar			1			1
4	Chhattisgarh			7		1	8
5	Delhi			2			2
6	Haryana			16	15		31
7	Himachal Pradesh				1		1
8	Jammu & Kashmir			1			1
9	Jharkhand			8			8
10	Karnataka					1	1
11	Kerala			100	125		225
12	Madhya Pradesh			10	10		20
13	Manipur			1	2		3
14	Meghalaya			1			1
15	Mizoram			1		2	3
16	Odisha			4	2		6
17	Punjab			6			6
18	Rajasthan				1	2	3
19	Sikkim				2	14	16
20	Telangana		1	2	10		13
21	Uttar Pradesh			27	18	107	152
22	Uttarakhand				2		2
23	West Bengal			2			2
	Grand Total	0	1	198	198	127	524

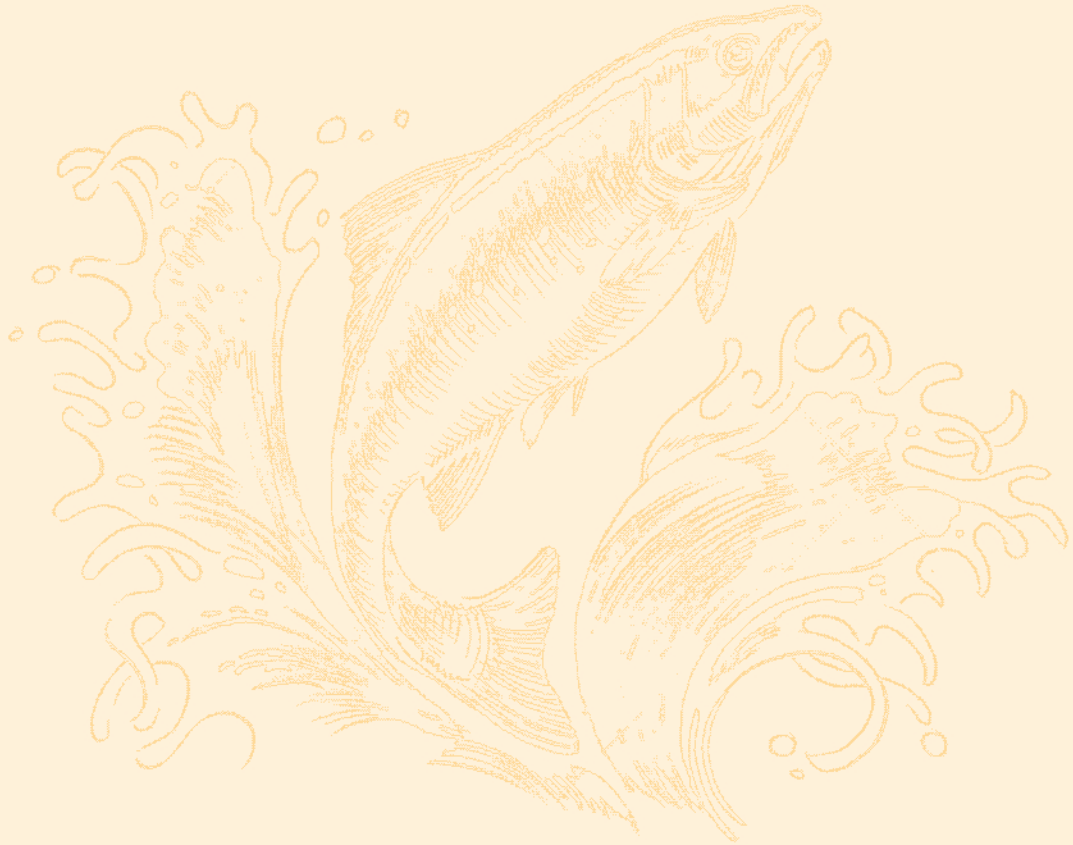
*During 2014-15& 2015-16 RAS has not been introduced.

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying

Table 14.48: Stocking of fish fingerlings in beels (ha) sanctioned under Blue Revolution Scheme for 2015-16 to 2019-20

S. N.	Name of the States	2015-16	2016-17	2017-18	2018-19	Total
1	Arunachal Pradesh				100	100
2	Bihar		1000			1000
3	Chhattisgarh	33.22				33.22
4	Jharkhand	21.56				21.56
5	Karnataka	66.5				66.5
6	Madhya Pradesh	38.12				38.12
7	Odisha	129.4				129.4
8	Telangana	121.32				121.32
9	Tripura		1125			1125
	Grand Total	410.12	2125	0	100	2635.12

Source: Department of Fisheries, M/o Fisheries, Animal Husbandry & Dairying



Department of Fisheries
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