



सत्यमेव जयते

ANNUAL REPORT

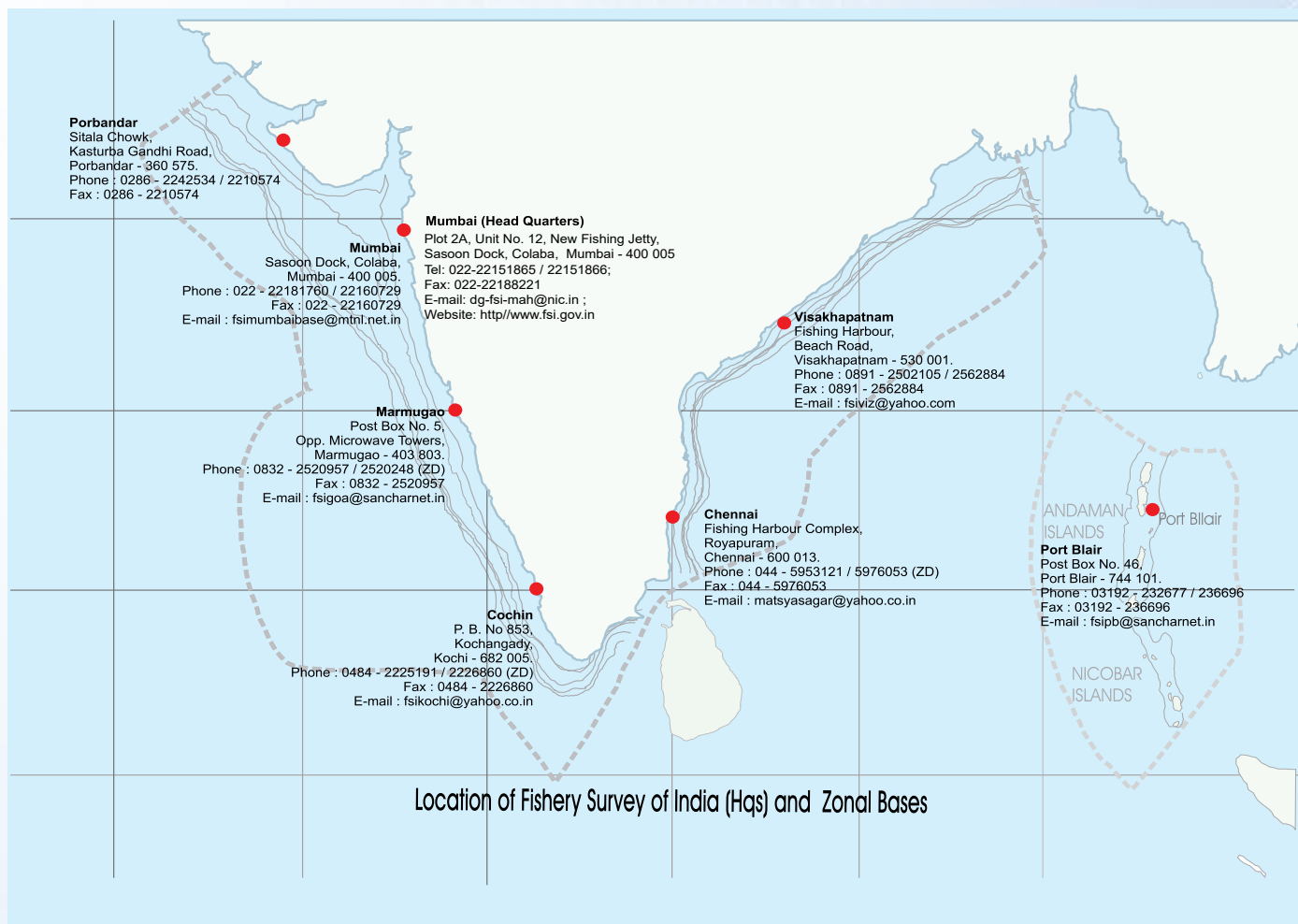
2016 - 17



FISHERY SURVEY OF INDIA

Department of Animal Husbandry, Dairying & Fisheries
Ministry of Agriculture & Farmers' Welfare





Department of Animal Husbandry, Dairying & Fisheries
Ministry of Agriculture and Farmers Welfare
Government of India
Krishi Bhawan, New Delhi, India-110 001.

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ANNUAL REPORT 2016 - 17



FISHERY SURVEY OF INDIA

Dept. of Animal Husbandry, Dairying & Fisheries, Mumbai
Ministry of Agriculture & Farmers' Welfare
Government of India



Annual Report 2016 -17

- Compiled by** : Shri Babu M. Raut and Shri Ashish Kumar
- Edited by** : Dr. Vinod Kumar Mudumala and Shri P. C. Rao
- Hindi Translation** : Smt. Meera Vellan Rajiv
- Secretarial Assistance** : Shri Vishal Kharat
- Published by** : Shri Mahesh Kumar Farejiya, Director General (I/C)



Fishery Survey of India

Plot 2A, Unit No. 12, New Fishing Jetty,
Sasoon Dock, Colaba, Mumbai - 400 005

Tel: 022-22151865 / 22151866; **Fax:** 022-22188221

E-mail: dg-fsi-mah@nic.in ; **Website:** <http://www.fsi.gov.in>



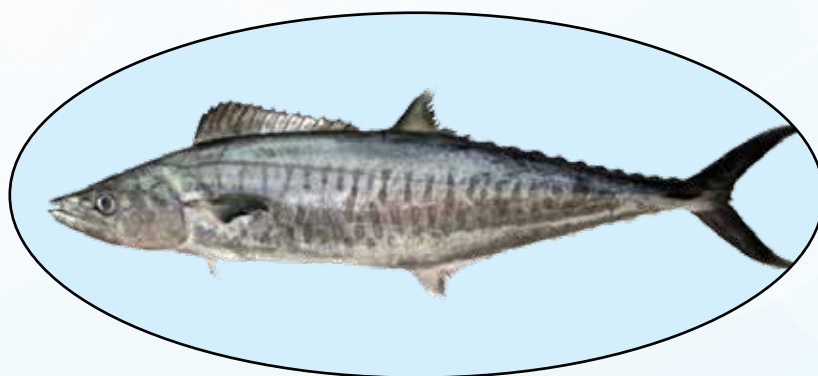


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From the Head of the Department's Desk



Mahesh Kumar Farejiya

The Fishery Survey of India, is the nodal fisheries institute under the aegis of Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture & Farmers' Welfare has been bestowed with the responsibility of carrying out the Survey, Assessment and Monitoring of Marine Fishery resources of the Indian EEZ and to generate vital information for sustainable exploration of Marine Fishery resources. It is indeed a great opportunity for me to present the activities and achievements of FSI for the year 2016-17. I take the privilege to thank DAHD&F, MoA&FW, officers and staff of FSI for extending constant support for fulfilling the mandate of the Institute. The highlights of the Survey-cum-research and allied activities carried out during 2016-17 are presented in this Annual Report.

In order to accomplish the survey activities, a planned survey programme was drawn and the same was presented before the Consultative Committee consisting of members from Fisheries Departments of Maritime States, representatives from Central Institutes and from the Fishing Industry. In view of their suggestions/inputs, the survey programme was finalized. Accordingly, the survey fleet was deployed.

For disseminating the survey results regional workshops, open-houses and Marine Fisheries exhibitions in all the maritime states including Andaman & Nicobar Islands were conducted for the benefit of the fishers, fishing industry and other user groups. The institute has released Hindi version of Bulletin No. 28 on "Fishery resources of the Indian Exclusive Economic Zone around Andaman & Nicobar Islands" and English version of Bulletin No. 32 on "Demersal fishery resources off the West coast of India- an update", July 2016. The Resources Information Series (RIS), a quarterly publication was published in English and in regional language of the respective maritime states.

Under the Inter-institutional Project on “Satellite Telemetry Studies on Migration Pattern of Tunas in Indian Seas” funded by INCOIS, tuna tagging experiments were conducted, wherein, 18 tunas were tagged and released in the Indian EEZ. The project on “Remote Sensing and GIS for Ecosystem based Marine Living Resources Management” funded by SAC is also being implemented by the institute.

As part of the capacity building programme on tuna longlining, about 15 fishermen sponsored by the Department of Fisheries, Tamil Nadu state including fisheries officials were trained and the training was funded by NFDB, Hyderabad. The institute provides practical training to the CIFNET students onboard survey vessels of FSI for acquiring sea service.

As per directive received from the Government of India, focus was on Swachchhata Abhiyan. During the year, the FSI has successfully implemented the programme. The Vigilance Awareness Week was observed in order to give the awareness to the employees of the institute in bringing the transparency in the official work. Hindi Pakhwada was celebrated to create an atmosphere to work in Hindi and also Hindi workshops were conducted to update the knowledge in Hindi for day to day official works.

During the year under report, the fleet of 11 vessels of the institute collectively achieved 1507 days out at sea expending a sampling effort of 2594 hours and 188373 hooks. The incidental fish catch during the survey was 52.95 tonnes, realizing a revenue of ₹ 14.15 lakhs as the sale proceeds. The budget grant of the Institute for the year 2016-17 was ₹ 61.23 Crores and the expenditure was ₹ 55.05 Crores.



Mahesh Kumar Farejiya
Director General (I/C)



MANDATE

The Fishery Survey of India, Mumbai, under the Ministry of Agriculture and Farmers' Welfare, Department of Animal Husbandry, Dairying and Fisheries is the nodal agency for carrying out the survey, assessment and monitoring of the marine fishery resources of the Indian EEZ within the framework of 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 present mandate of the Institute 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 Agriculture and Farmers' Welfare, 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.



3. OPERATIONAL BASES AND SURVEY VESSELS

The survey fleet of the Institute comprised of 11 vessels. Details of these survey vessels and their major specifications are furnished below:



MFV Matsya Vrushti

OAL (m)	: 37.5
GRT (t)	: 465
BHP	: 1100
TYPE	: Monofilament Longliner
YEAR	: 2005
BUILT	: China
Operational Base	: Mumbai (Maharashtra)



MFV Matsya Nireekshani

OAL (m)	: 40.5
GRT (t)	: 329.3
BHP	: 2030
TYPE	: Stern trawler
YEAR	: 1978
BUILT	: Holland
Operational Base	: Mumbai (Maharashtra)



MFV Yellowfin

OAL (m)	: 35.7
GRT (t)	: 310
BHP	: 800
TYPE	: Tuna Longliner
YEAR	: 1989
BUILT	: Japan
Operational Base	: Mormugao (Goa)



MFV Sagarika

OAL (m)	: 28.8
GRT (t)	: 189
BHP	: 650
TYPE	: Stern Trawler
YEAR	: 1994
BUILT	: Japan
Operational Base	: Mormugao (Goa)



MFV Matsya Varshini

OAL (m) : 36.5
GRT (t) : 268.8
BHP : 1160
TYPE : Trawler-cum-purse-seiner
YEAR : 1980
BUILT : Denmark
Operational Base : Cochin (Kerala)



MFV Lavanika

OAL (m) : 24
GRT (t) : 151
BHP : 500
Type : Stern trawler
YEAR : 1995
BUILT : India
Operational Base : Cochin (Kerala)



MFV Matsya Drushti

OAL (m) : 37.5
GRT (t) : 465
BHP : 1100
TYPE : Monofilament Longliner
YEAR : 2005
BUILT : China
Operational Base : Chennai (Tamilnadu)



MFV Samudrika

OAL (m) : 28.8
GRT (t) : 189
BHP : 650
TYPE : Stern Trawler
YEAR : 1994
BUILT : Japan
Operational Base : Chennai (Tamilnadu)

***MFV Matsya Shikari***

OAL (m) : 39.8
 GRT (t) : 352.4
 BHP : 1740
 TYPE : Stern Trawler
 YEAR : 1979
 BUILT : Holland
 Operational Base : Visakhapatnam
 (Andhra Pradesh)

***MFV Matsya Darshini***

OAL : 36.5 m
 GRT (t) : 268.8
 BHP : 1160
 TYPE : Trawler-cum-purse-seiner
 YEAR : 1980
 BUILT : Denmark
 Operational Base : Visakhapatnam
 (Andhra Pradesh)

***MFV Blue Marlin***

OAL (m) : 35.7
 GRT (t) : 310
 BHP : 800
 TYPE : Tuna Longliner
 YEAR : 1989
 BUILT : Japan
 Operational Base : Port Blair (A&N Islands)





4. MARINE FISHERY RESOURCES, ASSESSMENT & RESEARCH PROJECT

4.1 DEMERSAL AND PLEGIIC RESOURCES SURVEY AND MONITORING

WEST COAST

Project 1 **Demersal resources survey, assessment and monitoring of fish stocks along North Maharashtra and Gujarat coast between latitude 18°N and 23°N.**

Project components

1. Exploratory survey of demersal resources using fish trawl in 100-500 m depth.
2. Monitoring of demersal resources using fish trawl in 30-100 m depth.
3. Exploratory survey of shrimp resources using shrimp trawl in 30-100 m depth.
4. Experiments for assessment of fishing gear efficiency
5. Mesh selectivity study with cod-end cover

Gear

- 34 m fish trawl
- 45 m shrimp trawl

Vessel *MFV Matsya Nireekshani*

Base Mumbai

Project Co-ordinator Dr. L. Ramalingam, Zonal Director

Project Leader Shri A. S. Kadam, Fisheries Scientist

Results

A. Catch per unit effort (kg/hr)

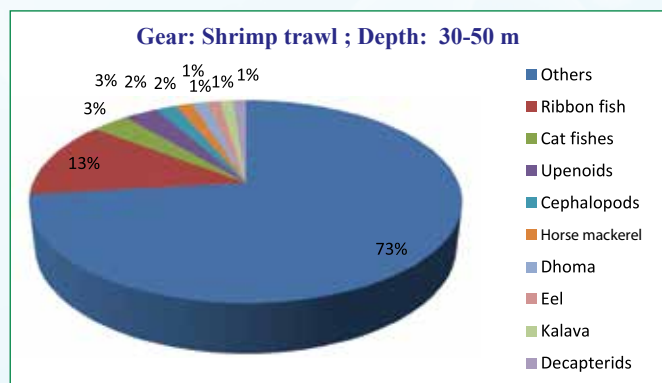
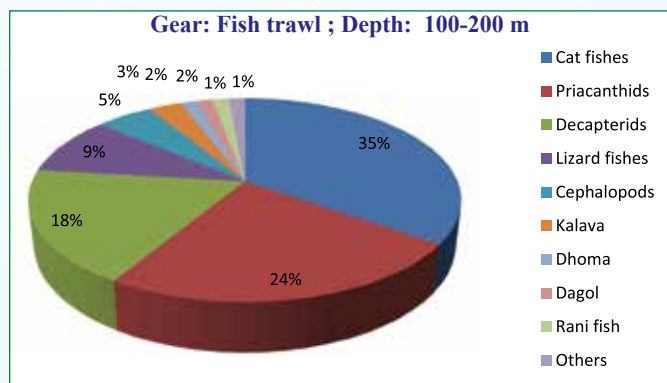
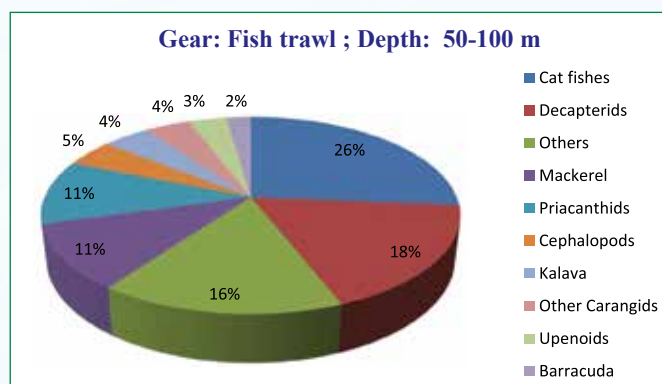
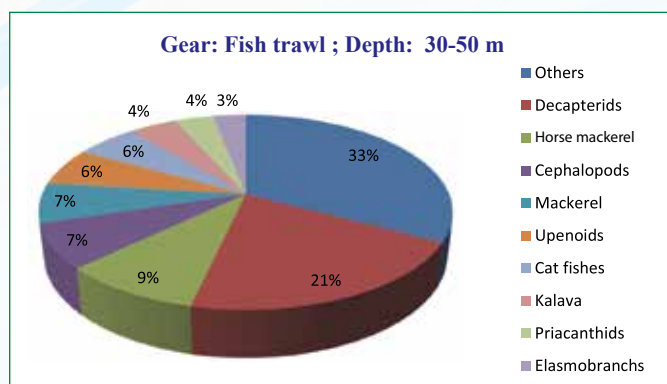
Latitude (°N)	Gear / Depth zone (m)		
	Fish trawl		Shrimp trawl
	30-100	100-200	30-100
18	22.12	-	50.15
19	-	-	-
20	17.79	25.83	49.83
21	52.35	20.33	-

B. Catch Composition (%)

Species / Group	Gear /Depth zone (m)			
	Fish trawl			Shrimp trawl
	30-50	50-100	100-200	
Elasmobranchs	3.10	0.33	-	-
Eels	1.04	1.01	-	1.17
Lizard fishes	0.70	1.87	9.35	0.33
Cat fishes	5.72	26.30	34.53	3.33
Lesser sardine	0.72	0.38	-	-
Bombay duck	0.23	-	-	-
Priacanthids	3.58	10.51	23.74	-
Kalava	4.48	4.37	2.88	1.17
Other Perches	1.53	1.22	-	0.50
Dhoma	2.19	0.90	1.44	1.33
Upenoids	6.25	3.48	-	3.00
King fish	0.20	0.11	-	-
Koth	0.12	-	-	-
Polynemids	0.06	0.05	-	-
Barracuda	1.89	2.28	0.72	0.33

Species / Group	Gear /Depth zone (m)			
	Fish trawl			Shrimp trawl
	30-50	50-100	100-200	
Pomfrets	0.43	0.14	-	-
Carangids	1.18	0.35	-	-
Other Carangids	0.15	4.16	-	-
Dagol	0.34	0.11	1.44	-
Horse mackerel	9.28	1.68	-	1.50
Decapterids	20.78	17.77	17.99	1.17
Ribbon fishes	2.09	0.57	0.72	12.33
Mackerel	6.63	10.70	-	0.33
Seer fishes	1.22	1.77	-	-
Crabs	1.79	0.46	-	-
Cephalopods	7.40	4.51	5.04	1.83
Rani fish	2.48	0.98	1.44	0.83
Flat fishes	0.38	0.05	-	0.17
Shrimps	0.09	0.03	-	0.50
Other fishes	13.97	3.91	0.72	70.17

Gear-wise and depth-wise catch composition of top 10 species for *MFV Matsya Nireekshani*



**C. Salient observations**

- In all the depth zones the catches were dominated by Cat fishes and decapterids during the year.
- The highest catch rate of 57.35 kg/hr was recorded in 30-100 m depth zone in Lat.21°N by Fish trawl followed by 49.83 kg/hr in the same depth zone of Lat. 20°N by Shrimp trawl.
- During the post-monsoon, in the month of September juveniles of the species such as Decapterids, priacanthids, mackerel, upenoids, barracuda, kalava, squids were recorded in the catches.

D. Biological studies

A total of 2126 specimens belonging to 34 species were examined for Length frequency studies, of which, 118 specimens were investigated for 18 species for Length-weight, sex, maturity and food & feeding habit studies.

E. Biomass estimation

Area : Lat. 18°N - 23°N

(in tonnes)

Species / Group	Depth zone (m)		
	30-50	50-100	100-200
Elasmobranchs	563	156	-
Eels	208	482	-
Lizard fishes	133	899	357
Cat fishes	1093	12609	1319
Nemipterids	463	469	55
Lesser sardine	130	182	-
Bombay duck	42	-	-
Priacanthids	649	5041	907
Kalava	832	2097	110
Other perches	286	586	-
Dhoma	419	430	55
Upenoids	1184	1667	-
Koth	22	-	-
Polynemids	11	26	-
Flat fishes	72	26	-

(in tonnes)

Species / Group	Depth zone (m)		
	30-50	50-100	100-200
Barracuda	349	1094	27
Pomfrets	78	65	-
Carangids	214	169	-
Other Carangids	28	1993	-
Dagol	61	52	55
Horse Mackerel	1709	808	-
Decapterids	3792	8519	687
King fish	36	52	-
Ribbon fishes	585	274	27
Mackerel	1209	5132	-
Seer fishes	222	847	-
Crabs	325	221	-
Cephalopods	1373	2162	192
Shrimps	25	13	0
Other fishes	3703	1876	27

Project 2

Demersal fishery resources survey, assessment and monitoring of fish stocks along South-Maharashtra, Goa, Karnataka and North Kerala coast between latitude 12°N and 18°N.

- Project components
1. Exploratory survey of demersal resources in 100-300 m depth.
 2. Monitoring of demersal resources using fish trawl in 30-100 m depth.

- Gear
- 27 m fish trawl
 - 30 m shrimp trawl

Vessel *MFV Sagarika*

Base Mormugao

Project Co-ordinator Shri S. K. Jaiswal, Mechanical Marine Engineer

Project Leader Shri S. G. Patwari, Jr. Fisheries Scientist

Results

A. Catch per unit effort (kg/hr)

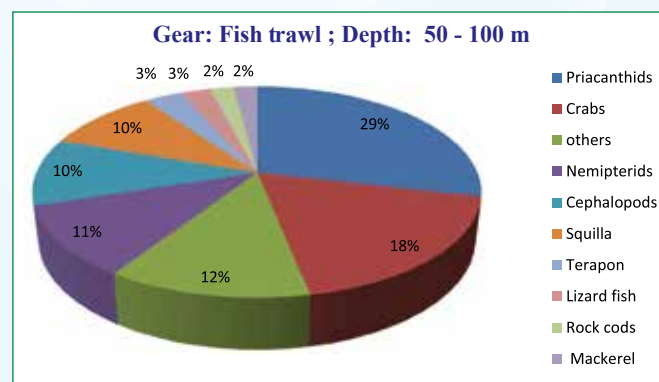
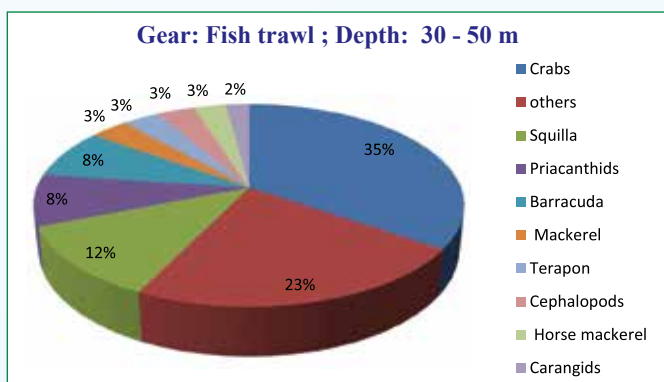
Latitude (°N)	Gear / Depth zone (m)	
	Fish trawl	
	30-50	50-100
12	13.82	28.66
13	37.70	12.66
14	27.18	-
15	28.05	2.56
16	82.27	36.76
17	22.42	24.66

B. Catch composition (%)

Species / Group	Gear / Depth zone (m)	
	Fish trawl	
	30 - 50	50 - 100
Elasmobranchs	0.13	-
Cat fishes	0.59	0.12
Clupeids	0.60	0.12
Lizard fishes	1.73	2.62
Priacanthids	8.27	28.61
Nemipterids	1.97	10.85
Sciaenids	0.22	-
Silverbellies	0.55	-
Barracuda	7.88	1.19
Pomfrets	0.07	-
Carangids	2.06	0.83

Species / Group	Gear / Depth zone (m)	
	Fish trawl	
	30 - 50	50 - 100
Horse mackerel	2.90	0.24
Decapterids	1.92	1.07
Ribbon fishes	0.96	0.95
Mackerel	3.38	2.03
Seer fishes	0.63	-
Crabs	34.59	18.24
Squilla	11.67	9.77
Terapon	3.35	3.22
Cephalopods	3.26	10.25
Rock cods	1.14	2.03
Other fishes	12.14	7.86

Gear-wise and depth-wise catch composition of top 10 species for MFV Matsya Sagarika



**C. Salient observations**

- The highest catch rate of 82.27 kg/hr was recorded from 30-50 m depth zone in Lat. 16°N.
- Swarming crabs (34.59%), squilla (11.67%), priacanthids (8.27%), barracuda (7.88%), mackerel (3.38%), terapon (3.35%), cephalopods (2.62%), horse mackerel (2.90%) and carangids (2.06%) were the major components of the catch in 30-50 m depth zone.
- Priacanthids (28.61%), swarming crabs (18.24%), nemipterids (10.85%), cephalopods (10.25%), squilla (9.77%), terapon (3.22%), lizard fish (2.62%), mackerel (2.03%) and rock cods (2.03%) were dominant in the catches from 50-100 m depth zone.

D. Biological studies

A total of 5478 specimens belonging to 18 species were examined for Length frequency studies, of which, 1411 specimens were investigated for Length-weight, sex, maturity and food & feeding habit studies.

E. Biomass estimation

Area: Lat. 12°N - 18°N

(in tonnes)

Species / Group	Depth zone (m)	
	30 - 50	50 - 100
Elasmobranchs	18	-
Cat fishes	83	23
Clupeids	85	23
Lizard fishes	245	498
Priacanthids	1172	5428
Nemipterids	279	2058
Sciaenids	30	-
Silverbellies	79	-
Barracuda	1116	226
Pomfrets	11	-
Carangids	291	158

(in tonnes)

Species / Group	Depth zone (m)	
	30 - 50	50 - 100
Horse mackerel	411	45
Decapterids	271	203
Ribbon fishes	136	181
Mackerel	479	384
Seer fishes	90	-
Crabs	4902	3460
Squilla	1654	1854
Terapon	475	611
Cephalopods	462	1945
Rock cods	161	384
Other fishes	1720	1492

Project 3

Demersal fishery resources survey, assessment and monitoring along South - West coast, Wadge Bank and Gulf of Mannar between latitude 7°N and 11°N.

Project components

1. Demersal finfish resources survey in the South - West Coast, Quilon Bank, Wadge Bank and Gulf of Mannar between Lat. 7°N and 11°N in 100-500 m depth
2. Monitoring of demersal resources using fish trawl in 30-100 m depth
3. Exploration of shellfish resources in 30-500 m depth
4. Exploratory survey of cephalopods resources in 30-500 m depth.

Gear

- Expo model fish trawl
- 47 m shrimp trawl
- Cephalopod trawl

Vessel**MFV Matsya Varshini**

Base

Cochin

Project co-ordinator

Shri D. K. Gulati, Zonal Director

Project Leader

Dr. Sijo P. Varghese, Sr. Fisheries Scientist

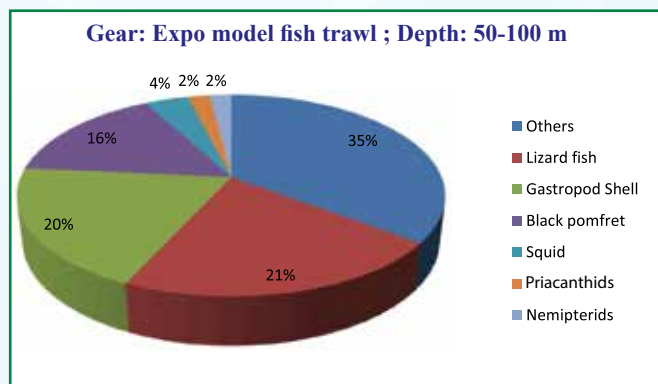
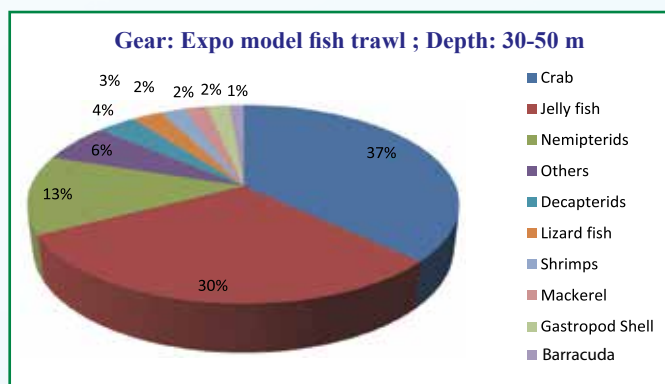
Results**A. Catch per unit effort (kg/hr)**

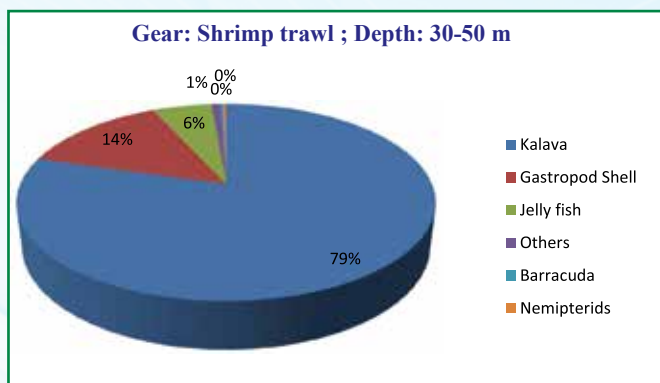
Latitude (°N)	Gear / Depth zone (m)		
	Expo model fish trawl		Shrimp trawl
	30-50	50-100	30-50
8	44.75	3.5	-
9	138.08	20	84.88
10	75.54	20	-

B. Catch Composition (%)

Species / Group	Gear / Depth zone (m)		
	Expo model fish trawl		Shrimp trawl
	30 - 50	50-100	30-50
Elasmobranchs	0.03	-	-
Eels	0.08	-	-
Clupeids	0.06	-	-
Lizard fishes	2.67	21.57	-
Priacanthids	0.30	1.96	-
Nemipterids	12.81	1.96	0.27
Kalava	1.05	-	79.45
Red snapper	0.03	-	-
Sciaenids	0.03	-	-
Silverbellies	0.02	-	-
Flat fishes	0.11	-	-
Barracuda	1.27	-	0.27
Black pomfret	0.10	15.69	-
Carangids	0.03	-	-
Decapterids	3.45	-	-
Dagol	0.01	-	-

Species / Group	Gear / Depth zone (m)		
	Expo model fish trawl		Shrimp trawl
	30 - 50	50-100	30-50
King fish	0.06	-	-
Ribbon fishes	0.02	-	-
Mackerel	2.05	-	-
Seer fishes	0.21	-	-
Chub mackerel	0.57	-	-
Indian tarbot	0.01	-	-
Lactarius	0.04	-	-
Moon fish	0.01	-	-
Shrimps	2.17	-	-
Crabs	37.10	-	-
Octopus	0.01	-	-
Cephalopods	0.98	3.92	-
Jelly fish	30.12	-	5.48
Gastropod Shells	2.02	19.61	13.70
Other fishes	2.57	35.29	0.82

Gear-wise and depth-wise catch composition of top 10 species for MFV Matsya Varshini



C. Salient observations

- The highest catch rate of 138.08 kg/hr was recorded in the depth zone of 30-50 m in Lat. 9°N by fish trawl.
- In 30-50 m depth zone, from the expo model fish trawl, Crabs (37.10%), nemipterids (12.81%) and jelly fish (30.12%) were the dominant species whereas, in 50-100 m depth zone, lizard fish (21.57%), black pomfret (12.81%) and gastropod shell (19.61%) were the dominant species.
- The species Kalava (79.45%) was dominated in the shrimp trawl operation in the depth zone 30-50 m.
- During North-east monsoon swimming crab, *Charybdis smithii* and Jelly fish were recorded in large quantities.

D. Biological studies

A total of 4824 specimens of 25 species were examined for Length frequency studies, of which, 974 specimens were investigated for biological studies.

Project 4 Experimental drift gill net fishing for perches and large pelagics in the submerged banks and sea mounts of Lakshadweep sea between latitude 7° N and 10° N

Project components Survey of perches and large pelagic resources by using drift gill net.

Gear Drift gill net

Vessel *MFV Matsya Varshini*

Base Cochin

Project Co-ordinator Shri D. K. Gulati, Zonal Director

Project Leader Dr. Sijo P. Varghese, Sr. Fisheries Scientist

Results

The survey couldn't be undertaken in the submerged banks and sea mounts of Lakshadweep Sea between Lat. 7° N and 10° N, since the MMD restricted the area of operation to 20 nautical miles from the VHF shore station, Kochi due to the absence of functional Digital Selective Calling (DSC) facility in the RT set available on board. Therefore, the drift gill net operations were carried out in near shore waters in Lat. 9°N.

A. Catch

In latitude 9°N, in the drift gillnet, a total of 12 nos. of fishes such as Black perch (*Lobotes surinamensis*), Indian mackerel (*Rastrelliger kanagurta*), Black pomfret (*Parastromateus niger*) and *Sardinella sp.* were recorded and their catch composition is given below.

B. Catch composition (%)

Species	Gear
	Drift gill net
<i>Rastrelliger kanagurta</i>	8.63
<i>Lobotes surinamensis</i>	80.14
<i>Parastromateus niger</i>	10.21
<i>Sardinella sp.</i>	1.02

Project 5 **Demersal fishery resources survey, assessment and monitoring along South - West coast between latitude 8°N and 11° N.**

Project components 1. Demersal finfish resources survey in 30-100 m depth
2. Shellfish resources survey in 20-100 m depth

Gear ➤ 700 mesh fish trawl
➤ 28 m shrimp trawl

Vessel *MFV Lavanika*

Base Cochin

Project co-ordinator Shri D. K. Gulati, Zonal Director

Project Leader Shri J. E. Prabhakar Raj, Sr. Fisheries Scientist

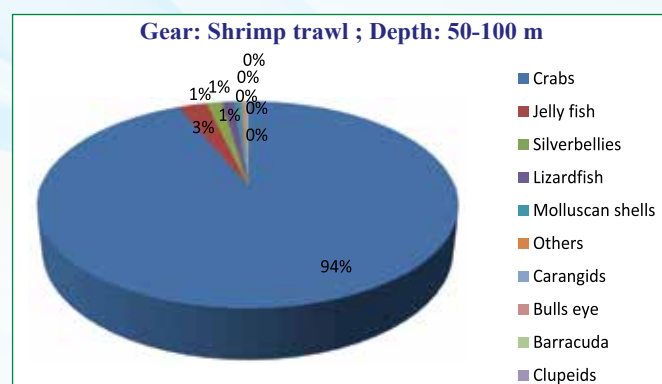
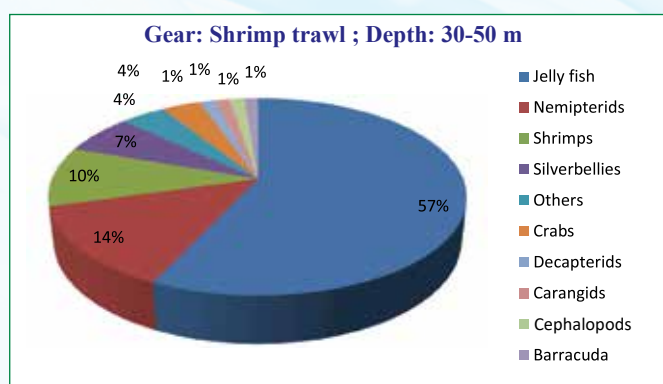
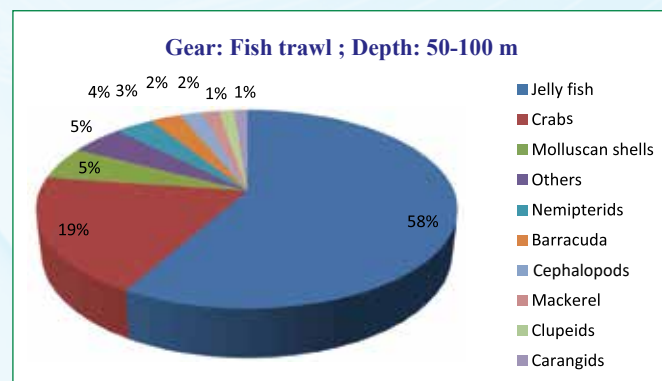
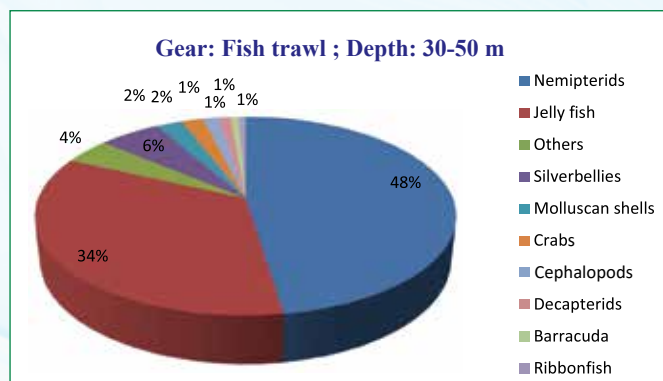
Results**A. Catch per unit effort (kg/hr)**

Latitude (°N)	Gear / Depth zone (m)			
	Fish trawl		Shrimp trawl	
	30-50	50-100	30-50	50-100
8	1.11	1.56	5.67	-
9	13.51	5	10.38	205.27
10	7.38	3.51	6.33	15.33

B. Catch composition (%)

Species / Group	Gear / Depth zone (m)			
	Fish trawl		Shrimp trawl	
	30 - 50	50-100	30-50	50-100
Eels	0.07	-	-	-
Clupeids	0.54	1.39	0.78	0.03
Lizard fishes	0.29	0.69	0.97	1.11
Priacanthids	-	0.69	-	0.06
Silverbellies	5.64	1.04	6.52	1.42
Barracuda	0.72	2.78	1.27	0.03
Carangids	0.47	1.22	1.36	0.22
Decapterids	1.09	-	1.46	-
Ribbon fishes	0.65	-	0.15	-

Species / Group	Gear / Depth zone (m)			
	Fish trawl		Shrimp trawl	
	30 - 50	50-100	30-50	50-100
Mackerel	0.54	1.56	0.19	-
Shrimps	0.36	0.00	9.79	0.00
Crabs	1.99	19.10	3.55	93.56
Kalava	0.22	-	0.39	-
Nemipterids	47.58	3.47	13.58	-
Molluscan shells	2.35	5.38	-	0.65
Cephalopods	1.56	2.08	1.41	-
Jelly fish	34.37	58.16	56.96	2.62
Other fishes	1.56	2.43	1.61	0.31

Gear-wise and depth-wise catch composition of top 10 species for *MFV Lavanika***C. Salient observations**

- The highest catch rate of 205.27 kg/hr was recorded in the depth zone of 50-100 m of Lat. 9°N by shrimp trawl operation and 13.51 kg/hrs in 30-50 m depth range of same latitude by the fish trawl.
- The survey results revealed that Nemipterids dominated in the catch during monsoon period, while the swimming crabs (*C. Smithii*) constituted bulk of the catch during the post-monsoon season.
- Non-conventional resource, jelly fish were recorded from all the latitudes in large quantities.
- The Crabs (93.5%) was the dominant group in 50-100 m depth zone by the shrimp trawl operation.

D. Biomass estimation

Area: Lat. 8°N - 10°N

(in tonnes)

Species / Group	Depth zone (m)
	30-100
Eels	2
Clupeids	33
Lizard fishes	56
Priacanthids	5
Kalava	12
Silverbellies	281
Barracuda	52
Carangids	45
Decapterids	49

(in tonnes)

Species / Group	Depth zone (m)
	30-100
Ribbon fishes	17
Mackerel	23
Shrimps	173
Crabs	2689
Nemipterids	1325
Cephalopods	69
Molluscan shells	96
Jelly fish	2085
Other fishes	82

EAST COAST

Project 6 Demersal fishery resources survey, assessment and monitoring along South-East coast between latitude 10°N and 16°N.

- Project components**
1. Exploratory survey of demersal resources using fish trawl in 100-300 m depth
 2. Monitoring of demersal resources using fish trawl and shrimp trawl in 30-100 m depth.
 3. Exploratory survey of demersal resources using shrimp trawl in 30-300 m depth.
 4. Exploratory survey using cephalopod trawl in 30-300 m depth

- Gear**
- 27.5 m fish trawl
 - 30 m shrimp trawl
 - 36.2 m cephalopod trawl

Vessel *MFV Samudrika*

Base Chennai

Project co-ordinator Shri A. Tiburtius Sr. Fisheries Scientist

Project leader Dr. J. C. Dhas, Jr. Fisheries Scientist

Results

A. Catch per unit effort (kg/hr)

Latitude (°N)	Gear / Depth zone (m)					
	Fish trawl			Cephalopod trawl	Shrimp trawl	
	30-50	50-100	100-200	30-50	30-50	200-500
10	9.83	9.21	7.33	12.39	10.46	7.96
11	10.1	10.1	8.52	17.36	22.77	3.79
12	16.85	13.69	8.28	14.67	14.59	11.96
13	13.44	9.08	9.21	17.81	21.75	2.92
14	16.52	51.20	4.70	43.18	11.72	2.56
15	18.98	13.80	4.17	17.00	11.24	3.07

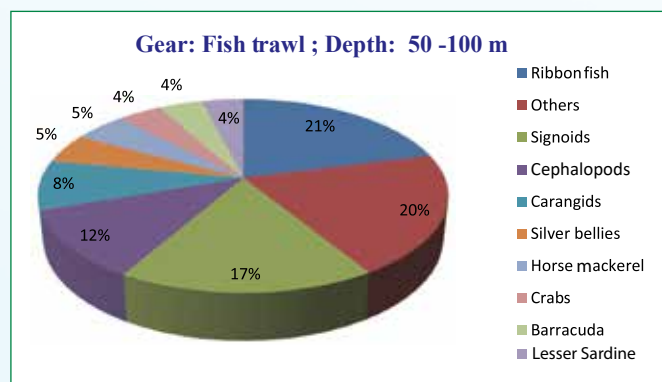
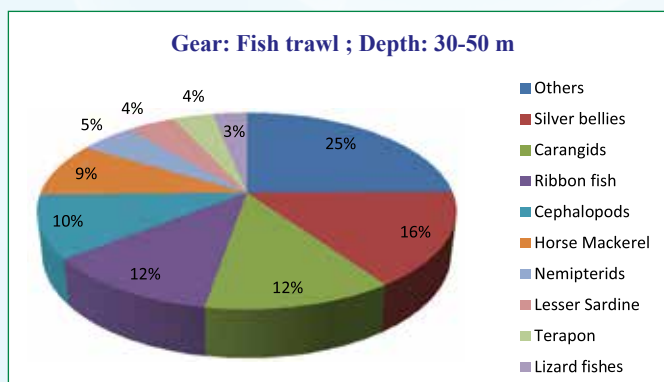
B. Catch composition (%)

Species / Group	Gear / Depth zone (m)					
	Fish trawl			Cephalopod trawl	Shrimp trawl	
	30-50	50-100	100-200	30-50	30-50	200-500
Elasmobranchs	1.75	0.64	1.21	0.18	-	-
Eels	0.15	0.19	-	-	-	-
Cat fishes	0.44	0.92	0.66	0.26	-	-
Chirocentrus	1.82	1.24	1.91	1.14	0.32	-
Anchovies	0.05	-	0.06	-	-	-
Lesser Sardine	4.44	3.79	4.42	0.59	-	-

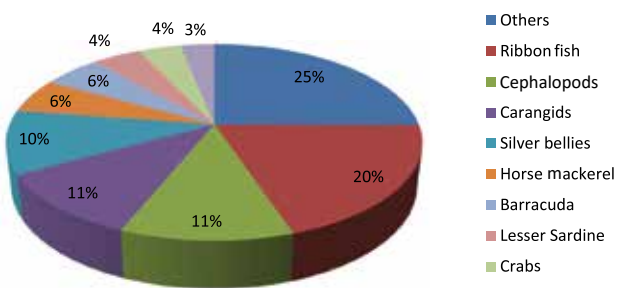


Species / Group	Gear / Depth zone (m)					
	Fish trawl			Cephalopod trawl	Shrimp trawl	
	30-50	50-100	100-200	30-50	30-50	200-500
Lizard fishes	3.18	3.37	3.14	4.09	6.79	3.79
Priacanthids	-	0.25	0.16	42.41	9.79	4.30
Perches	1.09	0.43	0.66	-	-	-
Nemipterids	4.99	3.68	2.92	3.20	14.84	2.78
Kalava	0.07	0.51	0.51	0.33	-	-
Upenoids	2.40	0.80	0.37	0.44	0.16	-
Polynemids	2.45	0.24	0.27	0.37	0.16	-
Dhoma	0.32	0.33	0.31	0.64	1.03	2.53
Silverbellies	15.54	4.76	10.35	4.29	-	-
Flat fishes	0.27	0.10	0.27	0.09	-	-
Barracuda	1.72	3.95	5.42	2.93	0.32	0.51
Carangids	12.36	7.97	10.72	7.16	2.13	-
Pomfrets	0.65	0.67	0.70	0.40	-	-
Dagol	0.15	0.16	0.18	-	-	-
Horse mackerel	8.97	4.63	5.65	3.29	1.10	-
Decapterids	0.22	0.22	0.64	0.02	0.71	0.13
King fish	1.38	0.49	1.13	0.81	-	-
Ribbon fishes	11.66	20.21	19.68	9.83	0.47	-
Mackerel	1.33	1.93	0.82	0.37	-	-
Deep sea fishes	0.05	-	-	-	11.52	36.92
Seer fishes	0.95	0.56	1.15	0.70	0.16	-
Black ruff	-	-	-	0.18	2.76	20.10
Gerrids	0.46	0.57	0.02	-	-	-
Terapon	3.73	1.10	2.83	1.38	-	-
Shrimps	0.46	0.29	0.35	0.20	0.24	0.76
Deep sea shrimps	-	-	-	-	0.95	12.01
Crabs	2.96	4.09	3.96	3.75	40.57	14.92
Cephalopods	10.35	10.99	11.28	7.69	2.84	0.76
Jelly fish	-	-	-	-	-	0.51
Signoids	0.51	16.45	2.75	0.75	-	-
Indian drift fish	0.10	1.59	0.21	0.15	0.16	-
Other fishes	3.05	2.90	4.91	2.30	3.00	-

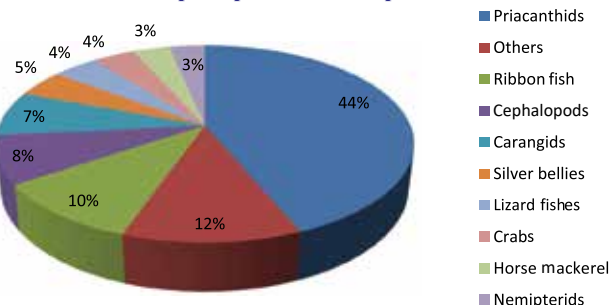
Gear-wise and depth-wise catch composition of top 10 species for *MFV Samudrika*



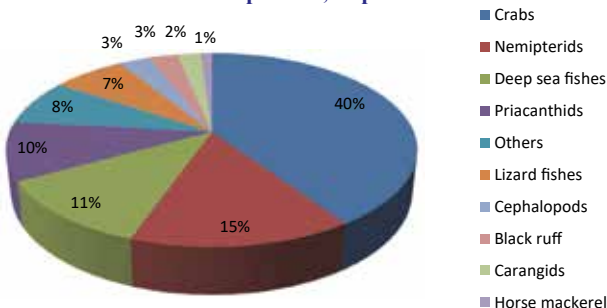
Gear: Fish trawl ; Depth: 100-200 m



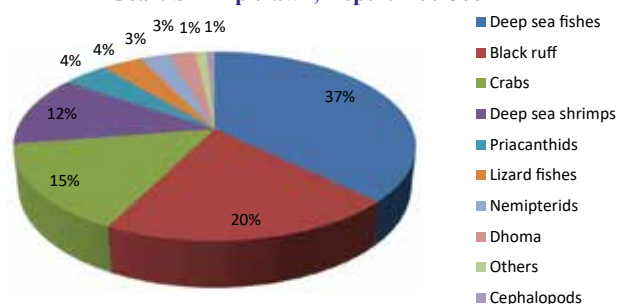
Gear: Cephalopod Trawl ; Depth: 30-50 m



Gear: Shrimp trawl ; Depth: 30-50 m



Gear: Shrimp trawl ; Depth: 200-500 m



C. Salient observations

- The highest catch rate of 51.20 kg/hr was recorded in 50-100 m depth zone in Lat. 14°N by using fish trawl, followed by 43.18 Kg /hr in 30-50 m depth zone in lat. 14°N by using cephalopod trawl.
- In the depth zone of 30-50 m, the catch was dominated by Priacanthids (42.41%) in cephalopod trawl followed by crabs (40.57%) and silverbellies (15.54%) by shrimp trawl and fish trawl operations respectively.
- The catch of 50 - 100 m depth zone was mainly comprised of Ribbon fish (20.21%), signoids (16.45%) and cephalopods (10.99%).
- Ribbon fishes (19.68%), cephalopods (11.28%) and carangids (10.72%) were the dominant groups caught in 100-200 m depth.
- In 200-500 m depth zone Deep sea fishes (36.92%), black ruff (20.10%) and crabs (14.92%) were the dominant species.

D. Biological studies

A total of 7111 no. of specimens were measured for length frequency studies for 41 species and the biological studies carried out for 2682 no. of specimens belonging to 32 species during the period.



E. Biomass estimation

Area: Lat. 10° N-16° N

(in tonnes)

Species / Group	Depth zone (m)			
	30-50	50-100	100-200	200-300
Elasmobranchs	16	2	-	-
Eels	1	-	-	-
Cat fishes	11	8	-	-
Anchovies	1	-	-	-
Lesser Sardine	64	23	-	-
Lizard fishes	45	138	28	7
Priacanthids	3	505	61	12
Nemipterids	62	85	91	8
Perches	7	-	-	-
Kalava	6	4	-	-
Upenoids	14	6	1	-
Polynemids	16	16	-	-
Dhoma	4	13	4	8
Flat fishes	3	2	-	-
Silverbellies	132	172	-	-
Barracuda	46	80	1	2
Pomfrets	7	7	-	-
Carangids	127	184	11	-
Decapterids	4	1	4	-

(in tonnes)

Species / Group	Depth zone (m)			
	30-50	50-100	100-200	200-300
Horse mackerel	85	100	4	-
King fish	16	23	-	-
Ribbon fishes	206	228	2	-
Mackerel	17	12	-	-
Deep sea fishes	-	-	81	85
Seer fishes	10	13	4	-
Blackruff	-	3	19	54
Gerrids	6	-	-	-
Shrimps	6	5	-	-
Deep sea shrimps	-	-	4	27
Terapon	35	45	-	-
Crabs	35	75	223	32
Jelly fish	-	-	-	1
Signoids	57	13	-	-
Indian drift fish	7	4	1	-
Cephalopods spp.	156	232	44	2
Chirocentrus	22	26	1	-
Other fishes	47	43	20	-

Project 7

Demersal fishery resources survey, assessment and monitoring along Upper East coast between latitude 16°N and 21°N.

Project components

1. Exploratory survey of demersal resources using fish trawl in 100-200 m depth.
2. Monitoring of demersal resources using fish trawl in 30-100 m depth.
3. Exploratory survey using shrimp trawl in 30-500 m depth.
4. Estimation of abundance, distribution and biological features of Hilsa using Resource Specific Gear.
5. Experiments for assessment of fishing gear efficiency
6. Mesh selectivity study with cod-end cover.

Gear

- 34 m fish trawl
- 34 m shrimp trawl
- Resource specific fish trawl for Hilsa

Vessel

MFV Matsya Shikari

Base

Visakhapatnam

Project co-ordinator & Shri K. Govindaraj, Sr. Fisheries Scientist

Project leader

Results

A. Catch per unit effort (kg/hr)

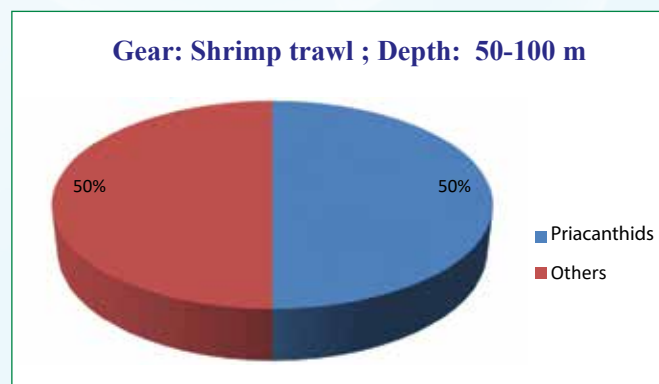
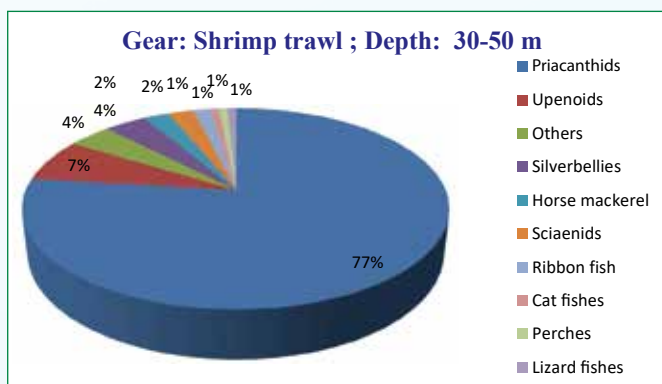
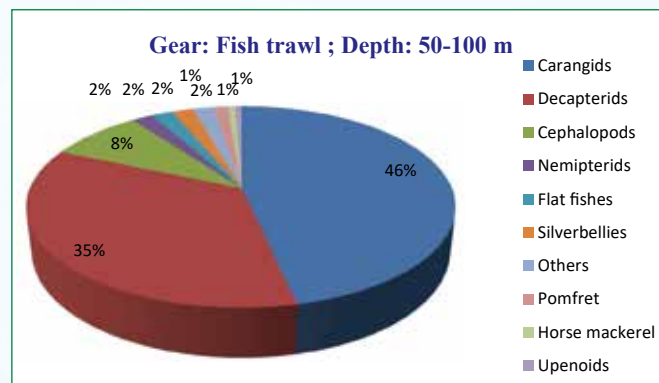
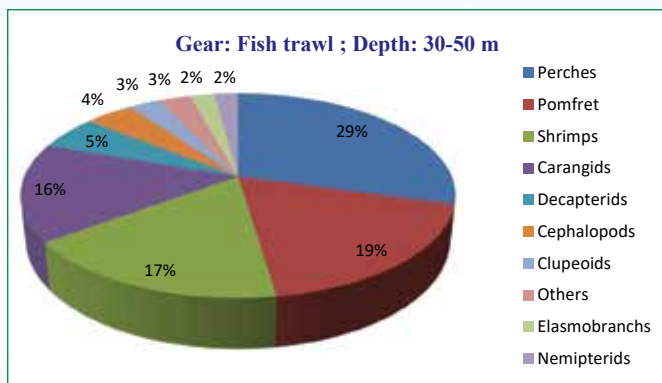
Latitude (°N)	Gear / Depth zone (m)			
	Fish trawl		Shrimp trawl	
	30-50	50-100	30-50	50-100
17	127.5	33.3	28.9	2.7
18	122.0	38.0	-	-

B. Catch composition (%)

Species / Group	Gear / Depth zone (m)			
	Fish trawl		Shrimp trawl	
	30 - 50	50-100	30-50	50-100
Elasmobranchs	2.1	-	-	-
Cat fishes	1.4	-	0.8	-
Clupeids	2.8	-	-	-
Lizard fishes	-	-	0.8	-
Priacanthids	-	-	76.9	50.0
Nemipterids	2.1	1.9	-	-
Perches	28.8	-	0.8	-
Upenoids	0.4	0.6	6.9	-
Sciaenids	-	-	2.3	-
Silverbellies	-	1.9	3.8	-
Flat fishes	0.3	1.9	-	-
Barracuda	0.5	-	-	-

Species / Group	Gear / Depth zone (m)			
	Fish trawl		Shrimp trawl	
	30 - 50	50-100	30-50	50-100
Pomfrets	18.1	1.3	-	-
Carangids	15.3	46.5	-	-
Horse mackerel	0.3	0.6	2.3	-
Decapterids	5.3	35.0	-	-
Ribbon fishes	-	-	1.5	-
Mackerel	0.4	-	-	-
Seer fishes	0.2	-	-	-
Shrimps	16.9	-	-	-
Gerrids	-	-	0.8	-
Cephalopods	4.2	8.3	0.4	-
Other fishes	0.7	1.9	2.7	50.0

Gear-wise and depth-wise catch composition of top 10 species for *MFV Matsya Shikari*



**C. Salient observations**

- The highest catch rate of 127.5 kg/hr was recorded in the depth zone of 30-50 m in the Lat. 17°N by fish trawl.
- A total catch of 1130 Kgs was recorded during the April, 2016 cruise and dominated by Sciaenids (22.7%) followed by carangids (19.6%), perches (15.2%) and priacanthids (9.1%).
- The catch was dominated by Perches (28.8%), pomfret (18.1%), shrimps (16.9%) and carangids (15.3%) in 30-50 m depth zone whereas, carangids (46.5%), decapterids (35.0%) and cephalopods (8.3%) in 50-100 m depth zone by fish trawl.
- In shrimp trawl operation, Priacanthids were the dominant species in both the depth zones.

D. Biological studies

A total of 333 specimens belonging to 6 species were examined for the length frequency studies, of which, 248 specimens were investigated for biological studies.

Project 8 Demersal fishery resources survey, assessment and monitoring along the Upper-East coast between latitude 16°N and 21°N.

Project component Survey of shrimp and demersal finfish resources using shrimp trawl and expo model fish trawl along the Upper East Coast between Lat. 16°N and 21°N in 30-200 m depth

Gear ➤ 45.6 m expo model fish trawl
 ➤ 34 m shrimp trawl

Vessel *MFV Matsya Darshini*

Base Visakhapatnam

Project co-ordinator Shri K. Govindaraj, Sr. Fisheries Scientist

Project leader Dr. Annada Bhusan Kar, Fisheries Scientist

Results**A. Catch per Unit effort (kg/hr)**

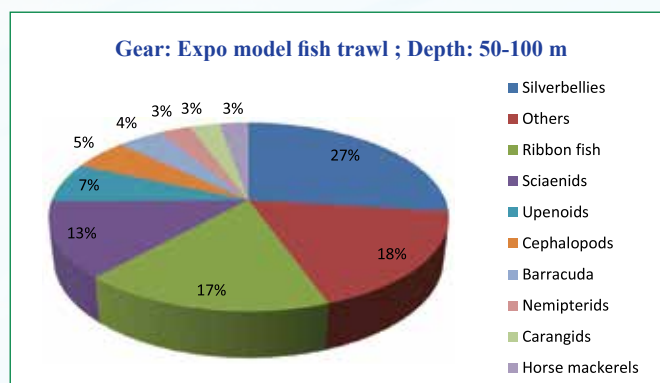
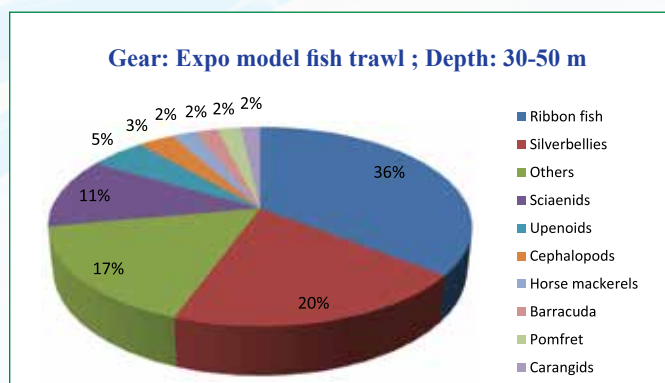
Latitude (°N)	Gear / Depth zone (m)	
	Expo model fish trawl	
	30-50	50-100
16	147.2	68.1
17	54.7	65.4
18	43.0	156.3
19	68.7	30.7

B. Catch composition (%)

Species / Group	Gear / Depth zone (m)	
	Expo model fish trawl	
	30-50	50-100
Elasmobranchs	0.3	1.7
Cat fishes	1.1	1.4
Clupeids	0.8	0.4
Lizard fishes	1.1	0.7
Priacanthids	0.1	0.4
Nemipterids	1.1	3.1
Perches	0.4	2.6
Upenoids	5.1	6.8
Sciaenids	11.4	13.0
Silverbellies	19.9	27.0
Barracuda	2.1	4.3

Species / Group	Gear / Depth zone (m)	
	Expo model fish trawl	
	30-50	50-100
Pomfrets	2.1	1.3
Carangids	1.8	2.9
Horse mackerel	2.2	2.8
Decapterids	0.6	0.8
Ribbon fishes	35.6	17.3
Mackerels	0.9	0.9
Seer fishes	0.9	1.1
Gerrids	-	0.2
Crabs	1.6	0.9
Cephalopods	3.2	5.4
Other fishes	7.6	5.2

Gear-wise and depth-wise catch composition of top 10 species for *MFV Matsya Darshini*



C. Salient observations

- The highest catch rate of 177 kg/hr was recorded in a single haul in the area Lat. 17° 59.8'N/ Long. 83° 57.9'E at a depth of 52 m.
- A total of 5502 kg of fish catch was recorded during the September 2016 voyage and the catch was dominated by Ribbon fish (44.9%), croakers (17.6%), silverbellies (5.8%), cephalopods (5.6%) and goat fishes (4.6%).
- Juveniles of *Parastromateus niger*, *Pampus argenteus*, *Pampus Chinenses*, *Scomberomorus guttatus*, *Lepturacanthus savala*, *Megalaspis cordyla*, *Sphyræna obtusata*, *Otolithes ruber* were recorded during the month of June and September 2016.
- New species of Buckler crab, *Cryptopodia angulata* was reported during the August 2016 voyage.

D. Biological studies

A total of 4628 specimens belonging to 43 species were examined for the length frequency studies, of which, 1417 specimens were investigated for biological studies.



E. Biomass estimation

Area: Lat. 16° N-19° N

(in tonnes)

Species / Group	Depth zone (m)	
	30-50	50-100
Elasmobranchs	13	169
Cat fishes	51	139
Clupeoids	38	39
Lizard fishes	50	65
Priacanthids	4	35
Nemipterids	52	304
Perches	20	254
Upenoids	234	677
Sciaenids	523	1285
Silverbellies	910	2668
Barracuda	96	423

(in tonnes)

Species / Group	Depth zone (m)	
	30-50	50-100
Pomfrets	95	125
Carangids	81	287
Horse mackerel	100	282
Decapterids	27	80
Ribbon fishes	1629	1712
Mackerel	42	88
Seer fishes	43	106
Gerrids	-	18
Crabs	73	94
Cephalopods	145	537
Other fishes	349	513

Project 9

Survey of coastal pelagic resources by mid-water trawling along the Upper-East coast between latitude 16°N and 21°N.

Project component Pelagic fishery resources survey by using pelagic trawl

Gear 12.92 x 12.92 fathom mid-water trawl

Vessel *MFV Matsya Darshini*

Base Visakhapatnam

Project co-ordinator Shri K. Govindaraj, Sr. Fisheries Scientist

Project leader Dr Annada Bhusan Kar, Fisheries Scientist

Results

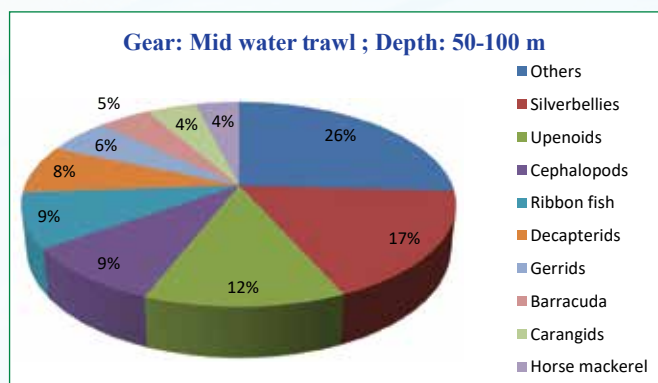
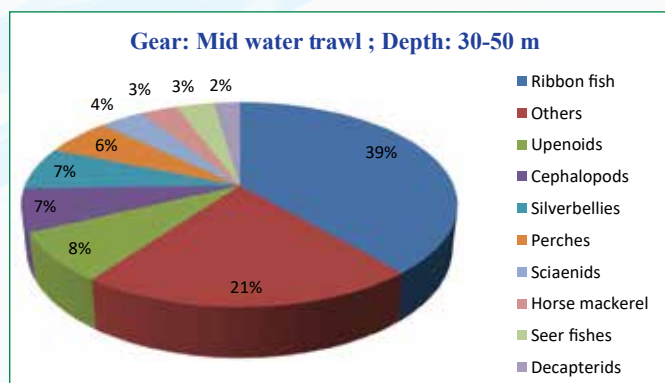
A. Catch per unit effort (kg/hr)

Latitude (°N)	Gear / Depth zone (m)	
	Mid water trawl	
	30-50	50-100
16	8.0	-
17	17.9	9.4
18	13.2	24.9
19	6.0	3.9

B. Catch composition (%)

Species / Group	Gear / Depth zone (m)	
	Mid water trawl	
	30-50	50-100
Elasmobranchs	2.1	0.1
Cat fishes	1.1	0.4
Clupeids	1.9	1.8
Lizard fishes	1.3	2.0
Nemipterids	0.1	3.8
Perches	5.9	2.0
Upenoids	7.8	12.6
Sciaenids	3.9	2.7
Silverbellies	6.7	17.5
Flat fishes	0.1	-
Indian Drift fish	0.1	1.1
Barracuda	0.9	4.6

Species / Group	Gear / Depth zone (m)	
	Mid water trawl	
	30-50	50-100
Pomfrets	0.8	0.4
Carangids	1.3	4.4
Horse mackerel	3.3	3.9
Ribbon fishes	38.7	8.7
Decapterids	2.3	7.6
Mackerel	0.7	3.1
Seer fishes	3.3	2.0
Gerrids	2.2	5.6
Shrimps	-	0.2
Cephalopods	6.8	9.3
Other fishes	8.6	6.3

Gear-wise and depth-wise catch composition of top 10 species for MFV Matsya Darshini**C. Salient observations**

- The highest catch rate of 24.9 kg/hr was recorded in 50-100 m depth zone of Lat. 18°N.
- A total catch of 828 kgs were recorded during March 2017 and dominated by Decapterids (15.4%), squids (13.8%), gerrids (12.0%), upenoids (11.7%) and silverbellies (7.6%) etc.
- During November 2016 voyage, larvae of *leptocephalus*, *stomatopod*, *bothus*, ribbon fish and *phyllosoma* were recorded.
- During January 2017 voyage, Jellyfish blooms (*Crambionella stuhlamanni*) were recorded.
- Juveniles of *Lepturacanthus savala* and *Trichiurus lepturus* and squids were recorded during the month of February 2017.
- Rare occurrence of *Rhina ancylostoma* commonly known as mud skate was recorded during February 2017 voyage.
- *Antennarius hispidus* (Shaggy Frogfish) and *Pteroeides sparmanni* (Sea Pen) recorded during February 2017 cruise to be the first record in Visakhapatnam coast.

D. Biological studies

A total of 1475 specimens belonging to 19 species were examined for the length frequency studies, of which, 969 specimens were investigated for biological studies.



4.2 OCEANIC TUNA RESOURCES SURVEY

Project 10 **Survey of oceanic tunas and allied resources using regular longline in Indian EEZ along Central-West coast between latitude 8°N -18°N.**

Project component Survey of oceanic tunas and allied resources by longlining in the Indian EEZ along Central-West coast including Lakshadweep

Gear Multifilament tuna long line with 5 hooks/ basket

Vessel *MFV Yellowfin*

Base Mormugao

Project Co-ordinator Shri S.K. Jaiswal, Mechanical Marine Engineer

Project Leader Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist

Results

A. Hooking rate (%)

Month	Hooks operated	Hooking rate (%)							
		YFT	SKJ	SAI	MAR	SWO	SHA	OTH	Total
April 2016	4,800	0.12	-	0.02	-	0.10	0.04	0.10	0.38
May 2016	5,350	-	-	0.02	-	-	0.06	0.01	0.09
June 2016	500	-	-	-	-	-	-	-	-
July 2016	-	Vessel was non-operational for main engine over hauling							
August 2016	2,900	-	-	-	-	-	-	-	-
September 2016	3,700	-	-	-	-	0.02	0.06	0.02	0.10
October 2016	2,200	-	-	-	-	-	-	-	-
November 2016	6,700	0.03	0.02	-	-	-	-	0.04	0.09
December 2016	4,050	0.02	-	-	-	0.02	0.05	0.02	0.11
January 2017	6,050	0.13	-	-	0.02	0.05	-	0.08	0.28
February 2017	4,500	0.02	-	0.07	-	0.02	0.02	0.07	0.20
March 2017	1750	-	-	-	-	0.11	-	0.11	0.23

YFT – Yellow fin tuna, SKJ – Skipjack tuna, SAI – Sail fish, MAR – Marlin, SWO – Sword fish, SHA – Shark, OTH - Others

B. Salient observations

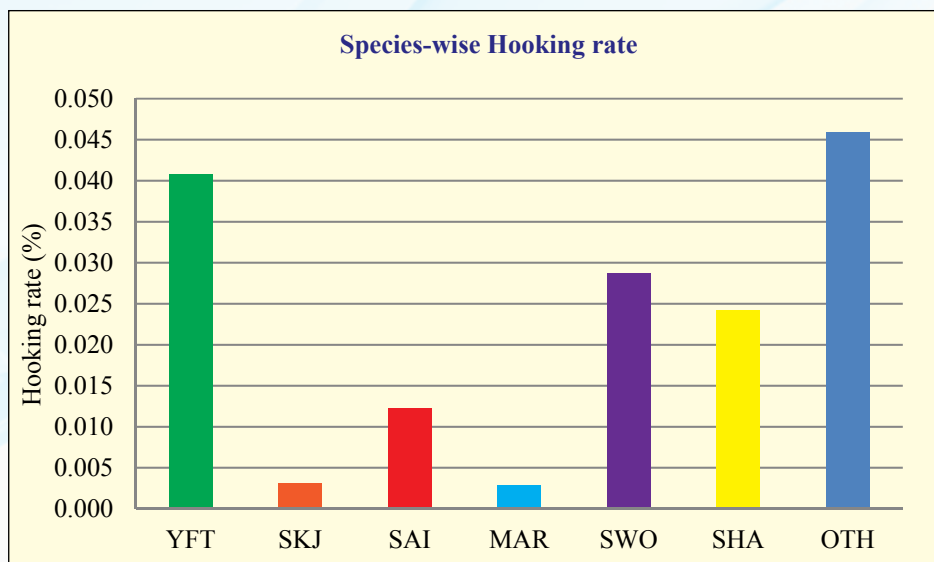
- The highest aggregate hooking rate of 0.54%, 0.28%, 0.23% and 0.20% were recorded during April, 2016, January 2017, March 2017 and February 2017 respectively.

- The species Yellow fin tuna, sword fish, sharks and marlin were the main component of the catch during January 2017 and February 2017.
- The highest hooking rate of 0.13% & 0.12% was recorded for yellow fin tuna during January 2017 and April 2016 respectively.

C. Biological studies

The Length frequency and biological studies for 67 specimens belonging to 21 species were carried out during the year

Species-wise Hooking rate (%) for the vessel *MFV Yellowfin*



Project 11

Tuna resources survey in Indian EEZ around Andaman and Nicobar Island between latitude 5°N and 15°N.

- | | |
|--------------------|---|
| Project components | <ol style="list-style-type: none"> 1. Survey of oceanic tunas and allied resources by using regular longlining in Andaman and Nicobar waters. 2. Survey of Sword fish resources by using drift longline with light sticks in Andaman and Nicobar waters. 3. Survey of Big-eye tuna resources by using deep longline gear in Andaman and Nicobar waters. 4. Survey of Perch resources by using bottom set vertical longline in Andaman and Nicobar waters. |
| Gear | <ul style="list-style-type: none"> ➤ Multifilament Tuna long line with five hooks per baskets. ➤ Modified deep set long line with 7/9 hooks per basket for big eye tuna. ➤ Bottom set vertical long line with 30 hooks per basket for perch resources. ➤ Drift long line with 5 hooks per basket with light sticks for sword fish. |

Vessel

MFV Blue Marlin

- | | |
|----------------------|--|
| Base | Port Blair |
| Project co-ordinator | Dr. S. Ramachandran, Sr. Fisheries Scientist |
| Project leader | Dr. H. D. Pradeep, Fisheries Scientist |



Results

A. Multifilament tuna longlining - Hooking rate (%)

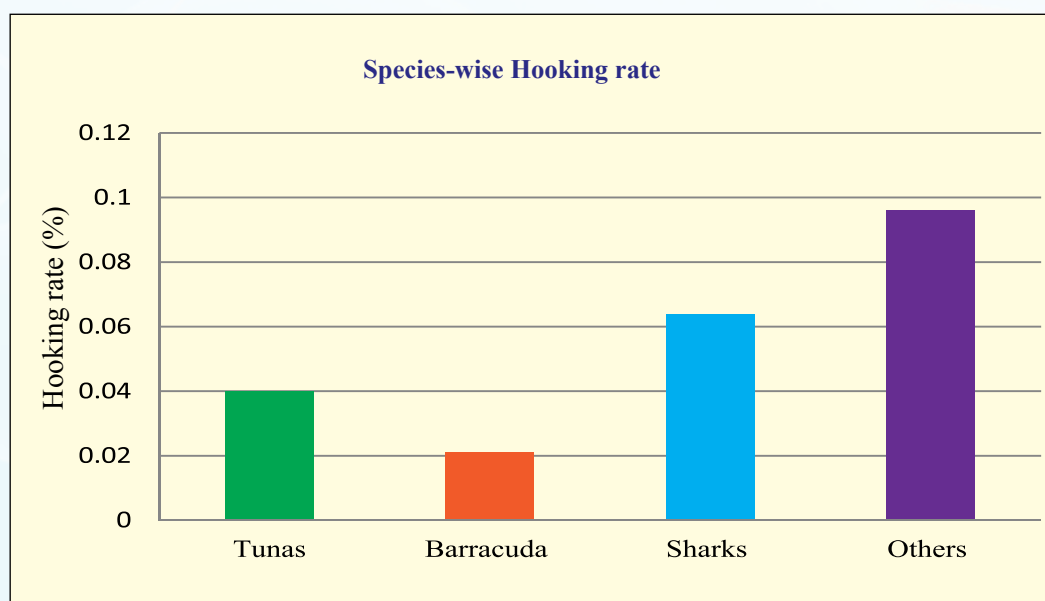
Months	Hooks operated	Hooking rate (%)				
		Tunas	Barracuda	Sharks	Others	Total
April 2016	9375	0.04	0.021	0.064	0.096	0.22
May 2016	During the period from 28 th April, 2016- 26 th March, 2017 the vessel <i>MFV Blue Marlin</i> was at M/s Cochin Shipyard Limited, Cochin and MED Jetty, Kochi for her Annual dry docking and afloat repairs.					
June 2016						
July 2016						
August 2016						
September 2016						
October 2016						
November 2016						
December 2016						
January 2017						
February 2017						
March 2017	The LSA/FFA certificate was received on 24 th March 2017 from MMD, Cochin. The vessel sailed from MED Jetty, Kochi on 27.03.2017 to Port Blair.					

YFT – Yellow fin tuna, SHA – Shark, SWO – Sword fish, MAR – Marlin, SAI – Sail fish, DOL – Dolphin fish, OTH - Others

B. Salient observations

- During the survey cruise of April, 2016 the vessel conducted survey in the area between Lat. 10°N - 12°N and Long. 92°E - 93°E with an aggregate hooking rate of 0.22%. Sharks dominated the catch with a hooking rate of 0.064% followed by tunas and barracuda.
- As a part of Inter- institutional collaboration of FSI, HQs, Mumbai with INCOIS, Hyderabad on the project SATTUNA, a Yellowfin Tuna was tagged with PSAT tag on 19.04.2016 at Lat. 10° 37.46'N and long. 92° 47.27'E onboard the vessel and was released in live condition. The Fork length of the tagged specimen was 152 cm, weighing about 48 Kg.

Species-wise Hooking rate (%) for the vessel *MFV Blue Marlin*



Project 12**Tuna resources survey using monofilament longlining along the West coast of India between latitude 4°N and 23°N.**

Project component 1. Survey of oceanic tunas and allied resources using monofilament longlining in the Indian EEZ.
2. Bottom topography sampling, environmental parameters studies plankton collection.

Gear Monofilament long line with 7 hooks per basket

Vessel *MFV Matsya Vrushti*

Base Mumbai

Project Co-ordinator Dr. L. Ramalingam, Zonal Director

Project Leader Dr. S. K. Dwivedi, Fisheries Scientist

Results**A. Hooking rate (%)**

Month	Hooks operated	Hooking rate (%)							
		YFT	SHA	SWO	MAR	SAI	DOL	OTH	Total
April 2016	Vessel was idle due to Main engine turbocharger problem								
May 2016									
June 2016	5040	0.20	0.36	-	0.14	0.54	0.02	0.02	1.27
July 2016	4880	0.06	0.47	-	0.04	0.04	0.06	0.01	0.70
August 2016	6800	-	0.27	-	0.04	0.03	-	0.04	0.44
September 2016	5200	0.02	0.19	0.08	-	0.02	0.02	0.40	0.71
October 2016	9600	0.16	0.19	0.06	0.03	0.03	0.11	0.28	0.86
November 2016	8048	0.04	0.21	0.01	-	0.02	0.26	0.20	0.75
December 2016	7096	0.08	0.18	-	-	0.01	0.61	0.10	1.03
January 2017	7584	0.76	0.17	-	-	-	0.37	0.20	1.46
February 2017	Vessel was idle for want of renewal of storm valve								
March 2017									

YFT – Yellow fin tuna, SHA - Shark, SWO – Sword fish, MAR – Marlin, SAI – Sail fish, DOL – Dolphin fish, OTH - Others

B. Salient observations

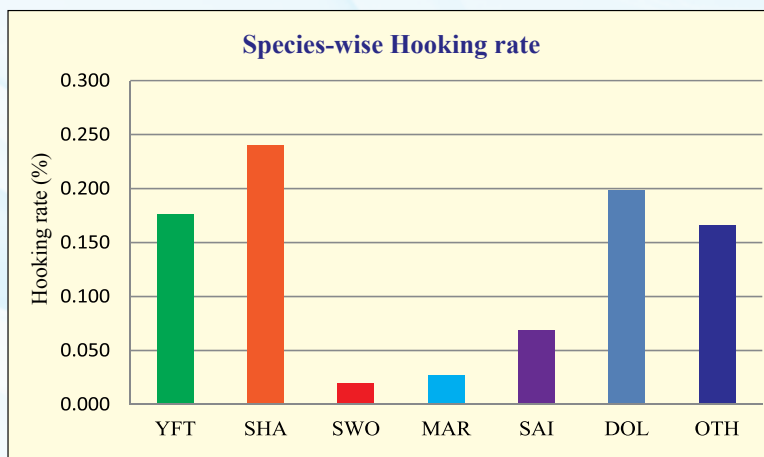
- An aggregate hooking rate of 0.91% was recorded, wherein, the Yellow fin tuna hooking rate was 0.18% during the year.
- The highest aggregate hooking rate of 2.69 % was recorded in the area of Lat. 18°N / Long. 70°E, followed by 2.56% in lat. 11°N / Long. 73°E, 2.50 % in Lat. 7°N / Long. 75°E and 1.79% in Lat. 21°N / Long 67°E.
- The highest hooking rate of 0.76% for Yellow fin tuna was recorded during the month of January 2017, wherein, the Yellow fin tuna constituted about 52.25% of the catch.
- The catch during the year mainly comprised of Shark (25.10%), dolphin fish (22.27%) and yellow fin tuna (19.64%).



C. Biological studies

A total of 412 specimens belonging to 19 species were examined for Length frequency, Length-weight, sex, maturity and food & feeding habit studies.

Species-wise Hooking rate (%) for MFV Matsya Vrushti



Project 13

Tuna resources survey using monofilament longline in the Bay of Bengal including international waters between latitude 10°N and 20°N.

Project components Tuna resources survey using monofilament longlining in Bay of Bengal between Lat.10°N and 20°N.

Gear Monofilament longline with 7 hooks per basket

Vessel **MFV Matsya Drushti**

Base Chennai

Project co-ordinator Shri A. Tiburtius, Sr. Fisheries Scientist

Project leader Shri J. E. Prabhakar Raj, Sr. Fisheries Scientist
Shri P. Tamilarasam, Fisheries Scientist

Results

A. Hooking rate (%)

Month	Hooks operated	Hooking rate %							Total
		YFT	SKJ	MAR	SWO	SAI	SHA	OTH	
April 2016	9450	0.09	0.02	-	0.01	-	-	0.05	0.18
May 2016	5670	0.07	0.14	-	-	0.02	-	-	0.23
June 2016	6300	0.06	0.08	-	-	-	-	0.02	0.16
July 2016	Main Engine Overhauling.								
August 2016	1260	-	-	-	-	-	-	-	-
September 2016	8190	0.21	0.05	0.01	0.01	-	-	0.32	0.60
October 2016	9450	0.70	-	-	-	0.03	0.04	0.32	1.09
November 2016	9450	0.75	0.04	-	-	-	-	0.40	1.19
December 2016	8820	1.99	0.03	0.02	0.01	0.02	-	0.11	2.20
January 2017	7560	0.27	-	-	0.01	0.03	-	0.16	0.48
February 2017	9450	0.13	-	-	-	0.06	-	0.07	0.26
March 2017	6650	0.18	0.01	-	0.01	-	-	0.09	0.30

YFT – Yellow fin tuna, SKJ – Skipjack tuna, MAR – Marlin, SWO – Sword fish, SAI – Sail fish, SHA – Shark, OTH – Others

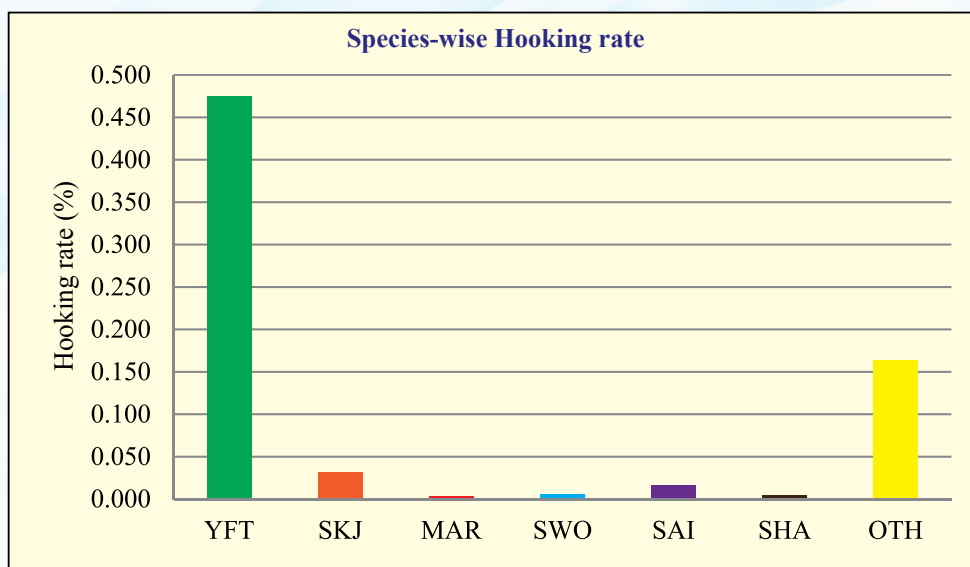
B. Salient observations

- The highest aggregate hooking rate of 2.20% was recorded during December 2016 followed by 1.19% in November 2016 and 1.09% in October 2016.
- The highest hooking rate of 1.99 % was recorded for Yellow fin tuna in December 2016.
- An aggregate hooking rate of 0.70% and yellow fin tuna hooking rate of 0.48% was recorded during the year.

C. Biological studies

During the year biological studies such as Length frequency, Length-weight, Sex, Maturity and Food and Feeding habits were carried out for 528 specimens belonging to 11 Species viz. *Thunnus albacares*, *Katsuwonus pelamis*, *Xiphias gladius*, *Istiophorus platypterus*, *Coryphaena hippurus*, *Makaira mazara*, *Sphyrna barracuda*, *Rachycentron canadum*, *Alepisaurus ferox*, *Galeocerdo cuvieri* and *Acanthocybium solandri*.

Species-wise Hooking rate (%) for MFV Matsya Drushti



5. PHYSICAL TARGET AND ACHIEVEMENTS

Physical targets and achievements in terms of voyages, days out at sea, fishing days and sampling effort of the survey vessels during 2016-17 are given below:

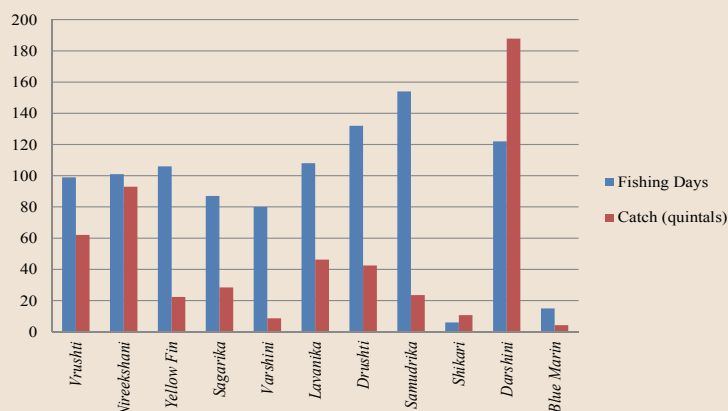
Base	Vessels	Target				Achievements			
		Voyages	Days out at sea	Fishing days	Sampling efforts	Voyages	Days out at sea	Fishing days	Sampling efforts
Mumbai	<i>MFV Matsya Vrushti</i> @	10	200	146	91980	9	153	99	54248
	<i>MFV Matsya Nireekshani</i> *	11	220	176	825	8	142	101	391
Mormugao	<i>MFV Yellow fin</i> @	10	190	143	89375	11	200	106	42500
	<i>MFV Sagarika</i> *	9	170	136	637.5	7	120	87	355
Cochin	<i>MFV Matsya Varshini</i> *	11	220	170	375	9	138	80	198
	#				918				541
	<i>MFV Lavanika</i> *	20	200	160	750	16	140	108	469
Chennai	<i>MFV Matsya Drushti</i> @	11	220	155	77490	11	201	132	82250
	<i>MFV Samudrika</i> *	10	200	160	750	11	198	154	730
Visakhapatnam	<i>MFV Matsya Shikari</i> *	10	200	160	750	2	21	6	20
	<i>MFV Matsya Darshini</i> *	11	220	176	375	10	174	122	252
	**				252				179
Port Blair	<i>MFV Blue Marin</i> @	10	200	150	75280	1	20	15	9375
	&				18750				-
Efforts	Total	123	2240	1732		95	1507	1010	
*: Bottom trawling (Hrs.)					4462.5				2415
**: Mid water trawling (Hrs.)					252				179
@: Tuna Longline (Hooks)					334125				188373
&: Bottom set vertical longline (Hooks)					18750				-
#: Drift gill net fishing (Hrs.)					918				541

6. VESSEL-WISE CATCH AND VALUE

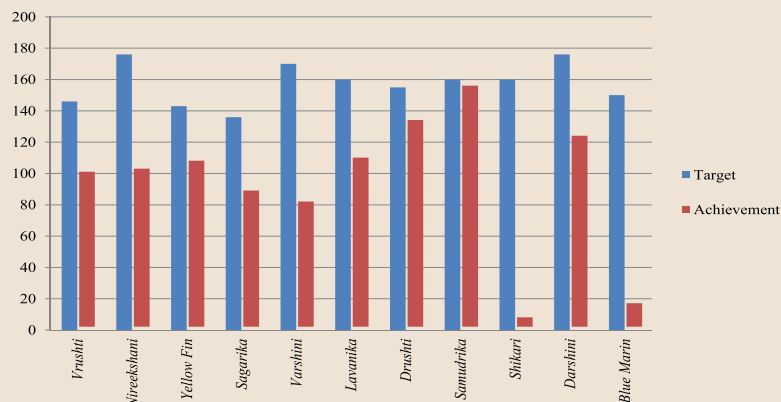
Catch and values registered by the FSI survey vessels during 2016-17

Base	Vessels	Catch (Kgs.)	Value (₹)
Mumbai	MFV Matsya Vrushti	6209	322430
	MFV Matsya Nireekshani	9298	180639
Mormugao	MFV Yellow fin	2228	237303
	MFV Sagarika	2845	8940
Cochin	MFV Matsya Varshini	865	14254
	MFV Lavanika	4622	76837
Chennai	MFV Matsya Drushti	4251	214720
	MFV Samudrika	2357	69043
Visakhapatnam	MFV Matsya Shikari	1065	9699
	MFV Matsya Darshini	18791	236760
Port Blair	MFV Blue Marin	426	44552
	Total	52957	1415177

Vessel-wise Fishing Days and Catch



Vessel-wise Target and Achievement in terms of Fishing Days



7. SCIENTIST PARTICIPATION IN SURVEY CRUISES

For collection of fishery resources data, Scientists of the institute regularly participate in survey cruises of the vessels. Details of the Scientist participation during the year is given below.

Vessel	Name and Designation of Scientist participants	No. of cruises	Days out at sea
<i>MFV Matsya Vrushti</i>	Dr. D. E. Uikey, Sr. Scientific Assistant	2	36
	Shri A. V. Tamhane, Sr. Scientific Assistant	3	57
	Shri A. Siva, Sr. Scientific Assistant	1	20
	Shri Rahulkumar B. Tailor, Sr. Scientific Assistant	1	18
	Dr. Kiran S. Mali, Sr. Research Fellow	2	21
<i>MFV Matsya Nireekshani</i>	Dr. S. K. Dwivedi, Fisheries Scientist	3	35
	Shri Ashok S. Kadam, Fisheries Scientist	2	36
	Shri Jacob Thomas, Jr. Fisheries Scientist	2	38
	Dr. D. E. Uikey, Sr. Scientific Assistant	1	14
	Shri Saurabh Upadhye, Jr. Research Fellow	1	20
<i>MFV Yellow fin</i>	Shri Raju S. Nagpure, Sr Scientific Assistant	1	20
	Shri Puran Singh Sr. Scientific Assistant	1	20
	Shri Solly Solomon, Sr. Scientific Assistant	3	45
	Shri A. E. Ayoob, Jr. Fishing Gear Technologist	1	15
	Shri Rahulkumar B. Tailor, Sr. Scientific Assistant	1	13
	Shri Kanhu Charan Sahu, Sr. Research Fellow	1	20
	Shri Surender Kumar, Jr. Research Fellow	3	58
<i>MFV Sagarika</i>	Dr. Vinod Kumar M., Sr. Fisheries Scientist	1	19
	Shri S. G. Patwari, Jr. Fisheries Scientist	1	8
	Shri Raju S. Nagpure, Sr. Scientific Assistant	2	33
	Shri Puran Singh, Sr. Scientific Assistant	2	40
	Shri A. E. Ayoob, Jr. Fishing Gear Technologist	1	10
<i>MFV Matsya Varshini</i>	Dr. Sijo P. Varghese, Sr. Fisheries Scientist	3	35
	Dr. S. Ramachandran, Sr. Fisheries Scientist	2	37
	Shri N. Unnikrishnan, Jr. Fisheries Scientist	3	43
	Shri A. E. Ayoob, Jr. Fishing Gear Technologist	2	33
<i>MFV Matsya Drushti</i>	Dr. M. K. Sinha, Jr. Fisheries Scientist	1	20

Vessel	Name and Designation of Scientist participants	No. of cruises	Days out at sea
	Dr. A. John Chembian, Jr. Fisheries Scientist	2	20
	Shri C. Babu, Sr. Scientific Assistant	3	45
	Shri H. D. Joshi, Sr. Scientific Assistant	1	19
	Shri V. Murugan, Jr. Research Fellow	6	117
	Dr. Kiran S. Mali, Sr. Research Fellow	1	19
<i>MFV Samudrika</i>	Shri P. Tamilarasan, Fisheries Scientist	2	39
	Dr. J. Jeyachandra Dhas, Jr. Fisheries Scientist	1	20
	Dr. M. K. Sinha, Jr. Fisheries Scientist	1	17
	Dr. A. John Chembian, Jr. Fisheries Scientist	1	20
	Shri Y. Tharumar, Sr. Scientific Assistant	3	60
	Shri H. D. Joshi, Sr. Scientific Assistant	2	30
<i>MFV Matsya Shikari</i>	Dr. A. B. Kar, Fisheries Scientist	1	6
	Shri S. K. Pattanayak, Sr. Scientific Assistant	1	15
<i>MFV Matsya Darshini</i>	Dr. A. B. Kar, Fisheries Scientist	1	19
	Shri N. Jagannadh, Jr. Fisheries Scientist	2	24
	Shri G. V. A Prasad, Jr. Fisheries Scientist	2	39
	Shri S. K. Pattanayak, Sr. Scientific Assistant	2	28
	Shri K. Silambarasan, Sr. Scientific Assistant	4	64
<i>MFV Blue Marlin</i>	Shri Pratyush Das, Jr. Fishing Gear Technologist	1	20

8. FLEET MAINTENANCE

A. Dry-docking of the vessels undertaken during the year

Name of the vessel	Name of the shipyard	Period of Docking & Afloat Repairs	Supervisor
<i>MFV Blue Marlin</i>	M/s CSL, Kochi	Docked: 25.05.2016 to 02.07.2016 Afloat: 03.07.2016 to 25.03.2017	Shri Manoj Kumar O.T, Service Engineer (I/C) Shri C. Murugan, Chief Engineer Gr.I Shri B. Bhoopathi, Bosun (Skipper-in-charge)
<i>MFV Sagarika</i>	M/s CSL, Kochi	Docked: 25.05.16 to 02.07.16 Afloat: 03.08.2016 to 31.10.2016	Shri S. K. Jaiswal, Mech. Marine Engineer Shri A. K. Mohapatra, Skipper
<i>MFV Samudrika</i>	M/s HSL, Visakhapatnam	Docked: 04.02.2017	Shri Bhama Reddy, Mech. Marine Engineer Shri A. Lawrence, Chief Engineer Gr.I Shri V. V. S. Murthy, Skipper-in- charge
<i>MFV Matsya Shikari</i>	M/s HSL, Visakhapatnam	Docked: 21.12.2016 to 01.03.2017	Shri C. D. Rao, Mech. Marine Engineer Shri A. P. Udayappan, Skipper

B. Major Overhauling of the Machinery & Equipment

Name of the vessel	Machinery Overhauled	Period of the Overhauling	Agency	Supervision
<i>MFV Drushti</i>	Aux. Engine	24.03.2016 to 07.04.2016	Dept. Workshop	Shri Bhama Reddy, Mech. Marine Engineer Shri S. Kanthen, Mech. Supervisor (Sr.) Shri G. Elangoven, Mech. Supervisor (Sr.) Shri M. Sam Sundar, Chief Engineer Gr. I.
<i>MFV Drushti</i>	Main Engine MAN Diesel	01.07.2016 to 12.08.2016		
<i>MFV Matsya Nireekshani</i>	Main Engine	05.07.2016 to 28.8.2016	Dept. Workshop	Shri B. Balanayak, Service Engineer (Mech.) Shri M. Muthedan, Chief Engineer
<i>MFV Matsya Darshini</i>	Aux. Engine (STBD)	17.10.2016 to 05.11.2016	Dept. Workshop	Shri C. D. Rao, Mech. Marine Engineer Shri S. Pasha, Mech. Supervisor (Sr.)
<i>MFV Matsya Vrushti</i>	Main Engine Turbocharger	April - May 2016	M/s Haresh Electricals	Shri B. Balanayak, Service Engineer (Mech.) Shri Rajendra Dokare, Mech. Supervisor (Sr.)

C. Acquisition of Vessels for FSI

The proposal for acquisition of vessels is under consideration of the Ministry of Agriculture & Farmers' Welfare, New Delhi.

D. Import of spare parts for the maintenance of machinery and equipment of the fleet

Spare parts worth of ₹197.00 lakhs have been imported towards maintenance of the vessels from the different countries such as Japan, Denmark, Singapore, UAE, etc. during the year.

9. INFRASTRUCTURE FACILITIES

9.1 Construction of Fishery Survey of India Facility Research Centre at Sasoon Dock, Colaba, Mumbai (HQs)

The construction of building in respect of Civil aspects has been completed. However, the electrical works such as commissioning of lifts and Air conditioners of the building are yet to be completed. The potable water connection is yet to be materialized. In this connection, these matters are being pursued with the CPWD/MGMC.

9.2 Shifting to the New Building

Fishery Survey of India (Headquarters) and Mumbai Base office have been occupied the newly constructed building located at Plot No. 2, Unit No. 12, New Fishing Jetty, Sasoon Dock, Colaba, Mumbai-400005 during July 2016.

9.3 Performance of Marine Engineering Division (MED), Kochi

Description	Supervision
A total no. of 14 vessels were hauled-up in the Slipway of the Marine Engineering Division for their under-water repair works and an amount of ₹40,73,858/- was realized during the year. Further, during the same period, 37 nos. of Life Rafts were serviced and an amount of ₹3,09,784/- was realized. Fabrication of protective cages for P1 remote/ spread adapter was completed on chargeable basis and an amount of ₹53,000/- was realized during the year under report.	Shri Dharamveer Singh, Mechanical Marine Engineer Shri B. Sathees Kumar, Assistant Engineer (Workshop) Shri Josh Asokan Chepalli, Superintendent (PS & C)



Slipway Dockyard



Marine Engineering Workshop



Under water repair works at slipway



Life Raft Servicing Station

10. TRAINING

10.1 The following officers and staff attended various training programmes during the year 2016-17

Name	Designation	Subject/Institute/Place/Period
Shri P. Tamilarasan Dr. J. C. Dhas Dr. Manas Kumar Sinha Dr. A. John Chembian Shri Y. Tharumar Shri C. Babu Shri Pratyush Das Shri V. Murugan	Fisheries Scientist Jr. Fisheries Scientist Jr. Fisheries Scientist Jr. Fisheries Scientist Sr. Scientific Assistant Sr. Scientific Assistant Jr. Fishing Gear Technologist Jr. Research Fellow	Training on P-SAT tags of Yellow fin Tuna, Chennai, 7 April 2016
Shri B. L. Anjana	Jr. Translator	Training on Hindi Translation, Belapur, Navi Mumbai, 6-10 June 2016
Smt. Sunita N. Motwani Smt. Mallika P. Shri Subhrajit Das Ms. Vandana C. Waghmare Smt. Archana N. Pradhan Smt. Aruna Vinodkumar Shri C. N. Raithatha Shri Rakesh Kumar	Stenographer, Gr. I Stenographer, Gr. I Stenographer, Gr. II Upper Division Clerk Upper Division Clerk Upper Division Clerk Upper Division Clerk Lower Division Clerk	Training on Seniority, Promotion and DPC, RTC, Mumbai, 15-16 June 2016
Shri Udaya Kumar Shri K. N. Swamy	Office Superintendent Upper Division Clerk	Training on Public Financial Management System (PFMS) conducted by PAO, Mumbai, 14 July 2016.
Shri A. V. K. Jogi Raju Shri Gopal Thule Shri Yogesh R. Gangurde	Office Superintendent Office Superintendent Data Entry Operator	Training on Government e-Market place (GeM) organized by DGS & D, Mumbai, 3 November 2006
Shri M. K. Farejiya Dr. L. Ramalingam Shri D. K. Gulati Shri S. K. Jaiswal Shri A. Tiburtius Shri K. Govindraj Dr. H. D. Pradeep Dr. Ansuman Das	Director General (I/C) Zonal Director Zonal Director Mech. Marine Engineer Sr. Fisheries Scientist Sr. Fisheries Scientist Fisheries Scientist Fisheries Scientist	Training on Aligning Public Authorities under DADF with RTI Online Portal of DoPT, New Delhi, 28 November 2016.
Smt. M. K. Sreemathi Shri Gopal Thule Smt. Sunita N. Motwani Shri Sanjeev Kumar Singh Shri D. K. Pandya Ms. Vandana C. Waghmare Smt. Archana N. Pradhan Smt. Aruna Vinodkumar Shri Subhash Chandra Bala Shri Santosh Babu P. Shri C. N. Raithatha	Office Superintendent Office Superintendent Stenographer, Gr. I Stenographer Gr. II Upper Division Clerk Upper Division Clerk Upper Division Clerk Upper Division Clerk Upper Division Clerk Upper Division Clerk Upper Division Clerk Upper Division Clerk	Training on Roaster Maintenance organized by the faculty of the RTC, Mumbai at FSI (HQs), Mumbai, 22-23 December 2016

Name	Designation	Subject/Institute/Place/Period
Shri Swapnil S. Shirke Shri Nashad M.	Sr. Scientific Assistant Sr. Scientific Assistant	Training on Recent trends in Bio-informatics, Port Blair, 24-25 January 2017
Shri Sanjeev Kumar Singh Shri Subhrajit Das	Stenographer Gr. II Stenographer Gr. II	Training on “e-Bhavishya” application at Regional Training Centre, Mumbai, 8 February 2017

10.2. Training to CIFNET trainees

As a part of Human Resources Development, the Institute continued to provide on-the-job-training to CIFNET trainees. The Base-wise details of onboard training imparted are given below:

Base	No. of Trainees			
	At the beginning of the year	Appointment during the year	Completed training during the year	At the end of the year
Mumbai	10	1	11	-
Mormugao	2	1	1	2
Chennai	1	-	1	-

10.3 Capacity building programme and training to fishermen

i) Mumbai Base:

As a part of training programme, the Mumbai Base of FSI trained 5 fishermen of Tamil Nadu including one State Fisheries Officer on board the monofilament tuna longline vessel *Matsya Vrushti*. The training was conducted from 09.01.2017 to 13.01.2017. The Scientist participant, Shri A. V. Tamhane, Sr. Scientific Assistant on board and the Skipper of the vessel explained about the oceanic & deep sea fishing and tuna long lining operations. For training purpose 79 baskets with 8 hooks per basket were operated at 1500 m depth. The catch was comprised of yellow fin tuna, shark, dolphin and ray fishes.



Preparation of Monofilament long line gear for operation by the trainees onboard *MFV Matsya Vrushti*



The trainees witnessing the catches onboard *MFV Matsya Vrushti*

ii) Chennai Base:

- (a) Chennai base of FSI conducted 1st phase of the Special training programme on the capacity building and hands on training on “Tuna long lining to traditional fishers” in association with CIFNET, Chennai and Dept of Fisheries, Govt. of Tamilnadu with the financial assistance from National Fisheries Development Board (NFDB), Hyderabad during 03.01.2017 to 13.01.2017. The trainees were provided theoretical lectures by CIFNET instructors and FSI scientists from 03.01.2017 to 06.01.2017. On 09.01.2017, three fishermen and one Inspector of Fisheries, Dept of Fisheries, Govt. of Tamil Nadu reported onboard *Matsya Drushti* for practical on hand training programme and the vessel sailed out on the same day. After completion of training programme the vessel returned to port along with the trainees on 13.01.2017.



Trainees along with Scientists, Officers and Crew of the vessel before departing for Practical training onboard *MFV Matsya Drushti*



Involvement of trainees in shooting the Monofilament long line onboard *MFV Matsya Drushti*

- (b) The 2nd phase of the Special training programme on the capacity building and hands on training on “Tuna long lining to traditional fishers” was conducted from 09.03.2017 to 17.03.2017. The trainees were provided theoretical lectures by CIFNET instructors and FSI scientists from 09.03.2017 to 12.03.2017. On 13.03.2017, five fishermen reported onboard *MFV Matsya Drushti* for practical on hand training programme and the vessel sailed out on the same day. After completion of training programme the vessel returned to port along with the trainees on 17.03.2017.



The cruise leader and the trainees displaying the catch caught in the Long line onboard *MFV Matsya Drushti* during the training programme



Involvement of trainees in Radio buoy deployment during the fishing operation

11. PUBLICATIONS

The Institute has been effectively disseminating the resources survey findings to the industry and other end-users through various publications such as annual report, magazines, charts, special publications, bulletins, Resources Information Series(RIS), scientific papers etc. Some of the FSI Publications were translated into regional languages for the benefit of the local fishermen and mechanized boat operators. During the year following publications were released.

Hindi Magazine

Matsya Kiran by FSI (HQs.), Mumbai [6th edition]

Matsya Kirti by Mormugao Base [4th and 5th edition]

Meena News

Meena News	Vol. XXXII. No. : 2, 3 & 4	April - December 2015	(Bilingual)
Meena News	Vol. XXXIII. No. : 1, 2 & 3	January - September 2016	(Bilingual)
Meena News	Vol. XXXIII. No. : 4	October - December 2016	(Bilingual)
Meena News	Vol. XXXIV. No. : 1	January - March 2017	(Bilingual)

Survey Programme

Fishery Resources Survey, Assessment & Research Programme 2016-17

Fishery Bulletin

Fishery Bulletin No. 28, "Fishery resources of the Indian exclusive economic zone around Andaman & Nicobar islands" (Published in Hindi)

Fishery Bulletin No. 32, "Demersal fishery resources off the west coast of India- an update", July 2016

Reports

Annual Report 2015-16 (Bilingual)

Resources Information Series - 18 issues

Four issues each from Goa, Visakhapatnam and Chennai and three issues each from Mumbai and Cochin Bases were published in respective local languages for the benefit of fishermen.

Papers published / presented by scientists

Paper published in Journals / Magazines

Siva A., Ansuman Das, Premchand, A. B. Kar, N. Jagannadh and S. K. Pattnayak (2016), Biology and growth parameters of Spotted Seer fish *S. guttatus* (Bloch & Schneider, 1801) from North East coast of India, IJMS, 2016, Vol. 6, No. 44.

Reddy K.S.N., A. Siva and Premchand (2016), Morphometric, meristic and some biological aspects of *Acropoma Japonicum* (Guntur, 1859) recorded from the Indian waters, IJMS, 2016, Vol. 6, No. 45.

Pradeep H.D., Swapnil S Shirke and S Monalisha Devi (2016), Report of Epizootic Cirripede, *Conchoderma Virgatum* (Spengler, 1790) on *Pennella instructa* (Wilson, 1917) parasitic on Indo-Pacific Sailfish *Istiophorus platypterus* caught from Andaman Sea. Journal of Entomology and Zoology Studies. 4(4): 1208-1210

Varghese, S.P. and V.S. Somvanshi, (2016), Feeding ecology and consumption rates of yellowfin tuna *Thunnus albacares* (Bonnaterre, 1788) in the eastern Arabian Sea. Indian Journal of Fisheries 63(1):16-26.

Pradeep H.D., S.S. Shirke and A.B. Kar (2017), Estimates of length-based population parameters of the Skipjack tuna, *Katsuwonus pelamis* (Linnaeus, 1758) in the Andaman waters. Journal of Fisheries, 5(2): 1-6



Vinod Kumar M., M.K. Farejiya., Kiran S. Mali, K.C. Sahu and Rahulkumar B. Tailor (2017), Observation on the food preferences, growth parameters and biological aspects of *Coryphaena hippurus* Linnaeus, 1758 exploited through the longline survey operation along the West coast of India, International Journal of Fisheries and aquatic Studies; 240-248.

Pradeep H.D., Swapnil S. Shirke, M. Nashad and S. Monalisha Devi (2017), New host and geographical record of the pandarid copepod, *Pandarus cranchii* (Leach, 1819) on the pelagic thresher shark, *Alopias pelagicus* Nakamura, 1935 from Andaman Sea. Journal of Entomology and Zoology Studies 2017; 5(1): 834-838

Swapnil S. S., S. Ramachandran, H.D. Pradeep, M. Nashad, M. D Sukham and M.K. Sinha (2017), First record of the Taper-tail ribbon fishes *Zu elongatus* Heemstra & Kannemeyer, 1984 from Indian EEZ, Fish Taxa 2(1): 43-47.

Sahu K.C., Ansuman Das, M. K. Farejiya and Kiran S. Mali (2017), Study on Migration pattern of Yellow fin Tuna (*Thunnus albacares*) from pop-up Satellite Archival Tags (PSAT) along the Indian EEZ, International Journal of Basic and Applied Biology (IJBAB), Volume-4, Issue 1; 33-36.

Papers presented in other Workshops/ Seminars/ Symposiums

Pradeep H. D., 2016, “Code of conduct for responsible fisheries” on the occasion of World Fisheries Day celebration at Guptapura fish landing centre, Sippigghat organized by the Directorate of Fisheries, Andaman and Nicobar Administration, Port Blair in collaboration with CIARI, Port Blair on 21st November 2016.

Pradeep H. D., 2016, “Distribution, Abundance and Diversity of Billfishes occurring in Andaman and Nicobar waters of Indian EEZ on the occasion of International conference on “Climate change adaptation and biodiversity, ecological sustainability and resource management for livelihood security” from 8-10th December, 2016 at CIARI, ICAR, Port Blair.

Silambarasan K., 2017, “DNA Barcoding and Morphological identification of finfish larvae from Alamparai Estuary, Tamilnadu, India” presented in National Conference on Environmental Protection and sustainability (NCEPS- 2016) held at P. G. & Research Department of Zoology, Sir Theagaraya College, Chennai during 31st December 2016 - 1st January 2017.

Papers presented in the Workshops under extension activities of FSI

Papers presented in the regional workshop on “Marine Fishery Resources of the Upper East-coast of India” held at Puri, Odisha on 5th August 2016.

Kar. A. B., “Marine fishery resources of the upper east coast of India”

Pattnayak. S. K., “Code of Conduct for Responsible Fisheries (CCRF)” and “Safety at Sea”

Papers presented in the regional Workshop on “Marine Fishery Resources of Andaman & Nicobar Islands and Eco-friendly Fishing Methods” held at Gram Panchayat Hall, Beodnabad, Burmanallah, South Andaman on 28th September 2016

Shirke. Swapnil. S., “Code of Conduct for Responsible Fisheries” and “Safety at Sea”

Das. Pratyush, “Eco friendly Fishing Methods and Suitability of Bottom Set Vertical Longline for the exploration of Perch resources”

Sarma. G. V. S., “Maintenance of outboard engines in fishing boats”

Paper presented in the workshop on “Marine Fishery Resources of Tamil Nadu coast” held at Pazhaverkadu, Thiruvallur Dist. Tamilnadu, on 3rd November 2016.

Babu C., “Marine Fishery Resources of Tamil Nadu coast”

Tamilarasan. P., “Code of Conduct for Responsible Fisheries”

Dhas. J. C., “Diversified Fishing Methods”

Papers presented in the regional workshop on “Marine Fishery Resources off Maharashtra and Diversified Fishing Methods” held at Karanja, Uran, Maharashtra on 5th November 2016.

Dwivedi. S. K., “Safety at Seas”

Kadam. A. S., “Marine Fishery Resources off Maharashtra”

Uikey. D. E., “Code of Conduct for Responsible Fisheries”

Papers presented in the regional workshop on “Marine Fishery Resources of Goa: Sustainable Utilization, Development and Management” held at Canacona, Goa on 2nd December, 2016.

Nagpure. Raju S., “Demersal fisheries resources of Goa coast change over the decades”

Solomon. Solly, “Oceanic fisheries resources and harvesting method”

Singh. Pura, “Code of Conduct for Responsible Fisheries”

Suranje. Rohidas, “Sea Safety and Navigation”

Jaiswal. S. K., “Fuel Conservation”

Papers presented in the regional workshop on “Marine Fishery Resources of the Andhra Pradesh Coast” held at Kalingapatnam, Srikakulam, Andhra Pradesh on 6th December 2016.

Jagannadh. N., “Marine fishery resources of Andhra Pradesh Coast”

Prasad. G. V. A., “Code of Conduct for Responsible Fisheries (CCRF)” and “Safety at Sea”

Papers presented in the regional workshop on “Marine Fishery Resources of Andaman & Nicobar Islands and Diversified Fishing Methods” held at Nilambur, Baratang, North and Middle Andaman on 30th January 2017.

Shirke. Swapnil. S., “Code of Conduct for Responsible Fisheries” and “Safety at Sea”

Das. Pratyush, “Eco friendly Fishing Methods and Suitability of Bottom Set Vertical Longline for the exploration of Perch resources”

Paper presented in the regional workshop on “Marine Fishery Resources of Tamil Nadu coast” held at Mahabalipuram, Kanchipuram district on 15th February, 2017.

Babu. C., “Overview of Oceanic tuna fishery resources in Indian EEZ”

Prabhakar Raj. J. E., “Marine fishery resources of Tamil Nadu coast”

Chembian. John. A., “Onboard fish handling and post harvest practices



12. RESEARCH AND SURVEY ACTIVITIES

12.1 Highlights of the Surveys/ Research



12.1.1 Two gravid pelagic Sharks (*Alopias pelagicus* & *Alopias superciliosus*) from the Andaman Sea

The vessel *Blue Marlin* while conducting tuna longline surveys in the area Lat. 11° & 12° N and Long. 93°E during April' 2016 cruise, two gravid pelagic sharks viz., *Alopias pelagicus* (TL=286 cm) and *Alopias superciliosus* (TL=353 cm) were caught from the Eastern part of Andaman Sea respectively. While carrying out biological studies onboard, two pups of TL 120 cm and 122 cm of *Alopias pelagicus* and two pups of TL 140 cm and 143 cm of *Alopias superciliosus* were reported in the abdominal ovarian sac.

12.1.2 Occurrence of Cephalopod Eggs (Squid and Cuttle Fish) during trawl surveys

The vessel *Samudrika* attached to the Chennai Base of FSI, while conducting trawl surveys during May, 2016 cruise, a cluster of Squid and Cuttle fish eggs were entangled with the trawl net in Lat. 12° 38'N/ Long. 80° 19'E, which indicates that the Cuttle fish and Squid breeds in this ground and revealed that the Squid and Cuttle fish breeds during this month.



Cuttle fish eggs



Squid eggs



12.1.3 Occurrence of Bat crab *Cryptopodia angulata* from Visakhapatnam Coastal waters, East coast of India

The vessel *Matsya Darshini* attached to the Visakhapatnam Base of FSI, during August, 2016 cruise, a single female specimen of *Cryptopodia angulata* (Batcrab, Buckler crab and Domed elbow crab) was collected from Visakhapatnam coastal waters in Lat. 17° 54.9'N / Long. 83° 45.7'E, at the depth of 49 m with sandy and coralline sea bed. The species belongs to the family *Parthenopidae*. The species has wide distribution along the coast of Maldives, Sri Lanka, Singapore, Australia and Gulf of Thailand but it is not common in Indian waters.

12.1.4 Juveniles caught during the trawl surveys



Upeneus moluccensis



Rastrelliger kanagurta

A) The vessel *Samudrika* attached to Chennai Base of FSI while conducting trawl surveys during August, 2016 cruise, juveniles of *Upeneus moluccensis* with the size range between 9.0-12.5 cm, *Rastrelliger kanagurta* (11.5-15.5 cm), *Parastromateus niger* (8.5-11.0 cm) and *Leiognathus splendens* (2.1-9.5 cm) were observed in the catches obtained onboard the vessel. These juveniles were caught in the cod end with the mesh size of 30 mm.



Parastromateus niger



Leiognathus splendens



Pampus argenteus



Pampus chinensis

B) The vessel *Matsya Darshini* attached to Visakhapatnam Base of FSI, the juvenile species of Black Pomfret, *Parastromateus niger* with the size range between 16.0-18.0 cm, White pomfret, *Pampus argenteus* (18.0-21.0 cm), Chinese pomfret, *Pampus chinensis* (17.0-21.0 cm), Horse mackerel and *Megalaspis cordyla* (16.0-17.5 cm) were recorded during September, 2016 cruise, while conducting exploratory fishery resources surveys for demersal resources in northeast off Kakinada (Lat. 17° 37'N/Long. 82° 29'E, depth 39 m).

C) The vessel *Matsya Nireekshani* attached to Mumbai Base of FSI recorded the occurrence of large numbers of juvenile fishes from North-West coast of India from the area Lat. 18° 00.6'N / Long. 72° 16.5'E and Lat. 20° 43.1'N / Long. 69° 34.9'E at a depth range of 30-80 m during November, 2016 cruise. Wherein, Juveniles of Cat fish, *Arius tenuispinis* with the size range between 26.0-57.0 cm, Squid, *Loligo duvaucelli* (5.5-25.0 cm), Perch, *Epinephelus diacanthus* (12.0-40.5 cm), Mackerel, *Rastrelliger kanagurta* (21.5-27.5 cm), Horse mackerel, *Megalaspis cordyla* (24.5-27.5 cm) and Dhoma, *Otolithes ruber* (13.5-32.5 cm) were observed. Length frequency studies revealed that almost all the specimens were in the juvenile stage. The occurrence of large quantities of juveniles may be attributed to fishing pressure by the trawlers, resulting that these fishes are not getting enough time to grow up to harvestable size for the fishery. A similar occurrence was also reported during December 2015 cruise.

12.1.5 Presence of Sucker fish on pectoral fin of Black Marlin in the West coast of India



Sucker fish, *Remora osteochir*

The vessel *Matsya Vrushti*, attached with Mumbai Base of Fishery Survey of India while conducting longline survey operation along in the month of October, 2016, on 17.10.2016, while hauling the longline in the Lat. 15°03'N / Long. 70° 56'E at the depth of 2740 m, a Black marlin, (*Makaira indica*) with a total Length 235 cm and weighed around 82 kg was hooked along with the other fishes, viz., Sword fish, Skipjack, Oceanic Sharks, Sail fish and Dolphin fish. It was observed that a live sucker fish sized 32 cm and weighing 400 gm was attached near the pectoral fin of the black Marlin, and it was identified as *Remora osteochir* (Cuvier, 1829). The literature revealed that, these sucker fishes mostly available in the temperate and also in tropical seas all around the oceans of the world. These sucker fishes will attach mainly to the Marlins, sail fish and other large fishes.

12.1.6 An unusual catch of Priacanthids in the tuna longline (monofilament) survey



Priacanthids, *Priacanthus hamrur*

The vessel *Matsya Vrushti* attached to Mumbai Base of FSI, while conducting longline surveys during the month of October, 2016, in Lat. 14°35'N/ Long. 70°57'E, at the depth of 2265 m; Lat. 14°46'N / Long. 70°39'E (2025 m depth), Lat. 14°54'N/ Long. 72°09'E (1985 m depth) and Lat. 15°36'N/ Long 72°05'E (1870 m depth), a total of 8 numbers of *Priacanthus hamrur* with the size range between 22-24 cm and weight 90-120 gm were hooked with the circle hook used for catching Yellowfin tuna. The bait used on the day was Squid and Mackerel. Along with Priacanthids, puffer fish (*Diodon sp.*), deep sea ray were also caught in the hook more than the targeted species (about 3% of total catch).

12.1.7 Abundance of Yellowfin tuna, *Thunnus albacares* along the East coast

A) The Monofilament Tuna longline survey vessel *Matsya Drushti* attached to Chennai Base of FSI while conducting longline surveys during October, 2016 cruise, recorded an appreciable quantity of Yellowfin tuna, *Thunnus albacares* (66 Nos.) by deploying 9450 hooks in the area between Krishnapatnam to Visakhapatnam along the Andhra coast (Lat. 14° 17.9'N / Long. 82° 10.8'E and Lat. 17° 14.6'N/ Long. 83° 56.2'E) with an aggregate Hooking Rate (HR) of 0.70%. In a single set, in the area Lat. 16° 09.8'N / Long. 82° 33.4'E off Narsapur, 25 Nos. of Yellowfin tuna were hooked (HR -3.97%) followed by 17 Nos. of Yellowfin tuna (HR 2.70%) in the area Lat. 14°17.9'N / Long. 82°



10.8'E at a distance of 28 nm off Krishnapatnam. The size range of Yellowfin tuna were between 91-186 cm and weight between 9-70 kg. The ovaries observed were mostly in IInd and IIIrd stage of maturity. Gut content studies revealed the presence of semi digested crab, squid and fishes in the gut. Along with *Thunnus albacares*, other species like *Istiophorus platypterus*, *Galeocerdo cuvier*, *Sphyrna barracuda*, *Coryphaena hippurus* and *Alepisaurus sps.* were also caught, with an aggregate hooking rate of 1.08% for all fishes.



B) The vessel *Matsya Drushti*, a monofilament tuna longliner attached to Chennai Base of FSI while conducting longline surveys during the month of November, 2016 had operated 9450 hooks in North-East coast between Lat. 10°-14°N. During the voyage, a total of 113 fishes were caught with an aggregate hooking rate of 1.19 %. Out of which, 71 Nos. of Yellowfin tuna (62.83%) were caught with a hooking rate of 0.75%. In a single set from Lat. 12°N / Long. 82° E, 18 Nos. of Yellowfin tuna were recorded with a hooking rate of 2.80 %, which is the highest YFT catch during the voyage. The depth of operation was 3462-3478 m. The average length and weight of the tuna recorded were between length of 106 - 188 cm and weight 15-40 kg respectively. The gonadal study indicated that the most of the species are at IVth stage of maturity. Four Skipjack tunas were also caught with a hooking rate of 0.04%.

C) The vessel *Matsya Drushti*, a Monofilament tuna longline survey vessel attached to the Chennai Base of FSI conducted tuna and allied resources survey using monofilament longlining along the Coromandel coast between Lat. 14°N and 18°N in the depth range



between 1568-3652 m. During December, 2016 voyage, the vessel conducted fishing for 14 days and recorded 194 fishes weighing 2452 Kg by operating 8820 hooks. An aggregate hooking rate recorded during the voyage was of 2.20%. The Yellowfin tuna (*Thunnus albacares*) was the dominant species, constituting 176 Nos. with an aggregate hooking rate of 1.99 % followed by Skipjack tuna (0.03%), Dolphin fish (0.02%), Black marlin (0.02%), Barracuda (0.01%), Sailfish (0.01%) and Sword fish (0.01%). A total of 60 Nos. of Yellowfin tuna were recorded in a single set in the area Lat. 14° 19'N / Long. 81° 29'E which is 128 nm from Nellore, Andhra Pradesh. This is the highest

hooking rate of Yellowfin tuna recorded from the Coromandel coast in the recent past.

12.1.8 Large quantity of Juvenile crabs *Charybdis smithii* along south of Maharashtra coast.

The vessel *Sagarika* attached to Mormugao Base of FSI while conducting the demersal surveys during November 2016 cruise, recorded large quantity of Juvenile crabs *Charybdis smithii* (1.2 tonnes) in a single haul off-Devghad region of South Maharashtra in the area Lat. 16° 23.5'N/Long 73° 16.0'E at a depth of 30 m. The haul consisted of only juvenile crabs with a CPUE of 800 kg/hr. Fishing gear used for the survey was 27 m fish trawl and the sampling area was sandy and muddy. Generally, the crabs are inhabited in the rocky and coral areas. Such bulk quantity of juvenile crab catch was not reported in this area during last many years. The carapace length range was observed between 2.0-3.0 cm and weight 10-15 gm. During the voyage along with the Crabs (65.03%) decapterids (17.40%), priacanthids (7.66%) and shells (4.20%) were also recorded. These juvenile crabs were released into the sea in live condition.



12.1.9 Observation of Copepod parasite on the Indo-Pacific Sail fish - *Istiophorus platypterus*



An incidental by catch of Indo-Pacific sail fish - *Istiophorus platypterus* was hooked while multifilament longline operation of the vessel *Yellowfin* in the area Lat. 14°N/Long. 70°E during the month of November 2016. While carrying out biological studies it was observed that a deep tissue embedded copepod parasite *Pennella instructa* on the ventral side of its abdominal region. The fish was caught on 19.11.2016 at a depth of 2822 m. The parasite was about 16 cm in length with a massive colonisation of about 16 large and several small striped goose barnacle, *Conchoderma virgatum* on its trunk. Though under natural conditions parasitic copepod does not bring about the death of hosts, it is established that they do deteriorate the epidermis and subsequently the tissues down below the dermis.



12.1.10 Potential fishing ground of tuna and allied resources off Maharashtra

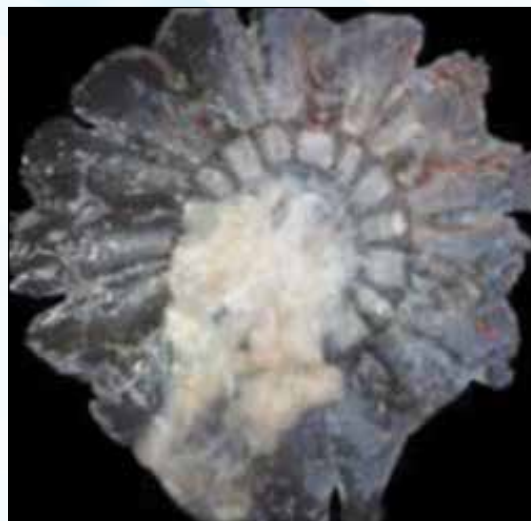


The vessel *Matsya Vrushti*, a monofilament tuna longliner attached to Mumbai Base of FSI while conducting the longlining surveys during the month of January 2017, recorded a total of 24 Nos. of fishes in a single set in the area Lat.19° 36.2'N / Long.68° 50.4'E at a depth of 2900 m on 25.01.2017. The catch was constituted by Yellowfin tuna (*Thunnus albacares*) 19 Nos., Dolphin fish (*Coryphaena hippurus*) 3 Nos., Silky Shark (*Carcharhinus falciformis*) 1 no. and barracuda (*Sphyraena barracuda*) 1 no. The Yellowfin tuna (YFT) dominated the catch with hooking rate of 3.01% out of total hooking rate of 3.80%. The total length of the YFT ranged between 96 cm - 163 cm and weighing between 13 - 57 kg. Biological studies of YFT revealed that out of 19

fishes, 13 fishes were found to be males and 6 were females. The females ranged between 96 cm - 143 cm (TL) and observed to be in the Ist and IIIrd stage of maturity.

12.1.11 Jellyfish blooms *Crambionella stuhlmanni* off coastal waters of Visakhapatnam

The vessel *Matsya Darshini* attached to the Visakhapatnam Base of FSI while conducting for pelagic resources survey in the North-East coast of India during January to March 2017 observed jelly fish blooms off Visakhapatnam. In the month of January 2017, a total of 220 kg of jelly fishes were recorded in between the area Lat.17° 46'N/Long.83° 31'E and Lat.17° 45'N/Long. 83°30'E in the depth range of 39-42 m. Similarly, in the month of February, 2017, around 50 kg of Jelly fishes in the area between Lat.18°01'N/Long. 83° 51'E and Lat. 18° 05'N/Long. 83° 59'E in the depth range of 33 - 34 m and in the month of March, 2017 these blooms also were observed in the area Lat. 17° 45.6'N / Long. 83° 40.5'E and Lat.17° 57.5' N / Long.83° 45.7'E at a depth range of 39-51 m. The collected species was identified as *Crambionella stuhlmanni* (Chun, 1896). The blooming of this group interferes with fisheries by clogging the fishing nets. Thus, increase in population size of jelly fishes can affect the coastal fisheries considerably.



12.2 Inter-institutional projects

Fishery Survey of India, jointly with other National institutes, participated in implementation of the following Research projects relevant to Marine fisheries.

12.2.1 Satellite telemetric studies on migration pattern of tunas in Indian seas (SATTUNA)

Objectives:

1. To develop the baseline database on the environment and biological parameters influencing the tuna migration and breeding.
2. To develop and improve the tuna fishery forecast system with better accuracy levels in predicting the probable tuna fishing grounds.

Study Area : Indian EEZ

Duration of the project : 2011 to March 2017

Principal Investigator : Shri Mahesh Kumar Farejiya, Director General (I/C), Fishery Survey of India

Co-Principal Investigators : Dr. L. Ramalingam, Zonal Director, Mumbai Base
Shri S. K. Jaiswal, Mech. Marine Engineer, Mormugao Base
Shri A. Tiburtius, Sr. Fisheries Scientist, Chennai Base
Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist, Mumbai (HQs)

Results

The tagging experiments are conducted in order to understand migration pattern, growth and breeding of the migratory fish i.e. Yellowfin tuna, under the project “Satellite telemetry studies on migration pattern of tunas in Indian seas” (SATTUNA) sponsored by Indian National Centre for Ocean Information Services (INCOIS), Hyderabad. The vessel-wise tuna tagging experiments carried out are detailed below.



Tagging experiment by *MFV Matsya Drushti*

- The vessel *Matsya Drushti* attached to Chennai Base of FSI had conducted tuna tagging programme. During the month of April 2016, two tags in Lat. 12° 08'N/Long. 80° 19'E and one tag in Lat. 14° 08'N/Long. 80° 32'E were implanted to yellowfin tuna. The scientist participants Dr. M. K. Sinha, Jr. Fisheries Scientist and Shri V. Murugan, Jr. Research Fellow had carried out the tagging experiment.
- During the month of October 2016, two tags were implanted to yellow fin tuna in Lat. 15° 32'N/ Long. 84° 28'E and Lat. 15° 25'N/Long. 82° 27'E. The scientist participants Shri C. Babu, Sr. Scientific Assistant had carried out the tagging experiment.



- During the month of November 2016, one tag was implanted to yellow fin tuna in Lat. 13° 07'N/ Long. 82° 07'E by the scientist participant Shri V. Murugan, Jr. Research Fellow.
- During the month of January 2017, one tag was implanted to yellow fin tuna in Lat. 13° 55'N/ Long. 81°00'E by the scientist participant Shri C. Babu, Sr. Scientific Assistant.
- During the month of March 2017, three tags were implanted to yellow fin tuna in Lat. 14° 05'-14° 59' N/ Long. 80° 31' - 81° 55'E by the scientist participants Dr. A. John Chembian, Jr. Fisheries Scientist, Shri C. Babu, Sr. Scientific Assistant and Dr. Kiran S. Mali, Sr. Research Fellow.

Tagging experiment by *MFV Matsya Vrushti*

- The vessel *Matsya Vrushti* attached to Mumbai Base of FSI while conducting tuna longline surveys in the area Lat. 19° 03'-19° 35'N/ Long. 68° 42'-68° 54'E during the month of June 2016, eight tags were implanted to yellow fin tuna. The scientist participant Dr. Kiran S. Mali, Sr. Research Fellow had carried out the tagging experiment.

Tagging experiment by *MFV Blue Marlin*

- The vessel *Blue Marlin* attached to Port Blair Base of FSI while conducting exploratory survey in the Lat. 10° 37'N/ Long. 92° 47'E during the month of April 2016, one tag was implanted to yellow fin tuna by the scientist participants Shri Pratyush Das, Jr. Fishing Gear Technologist and Shri Kanhu Charan Sahu, Sr. Research Fellow.

12.2.2 Remote Sensing and GIS for Ecosystem Based Marine Living Resources Management

The Fishery Survey of India (FSI) has undertaken an inter-institutional project on “Remote Sensing and GIS for Ecosystem Based Marine Living Resources Management” with the Space Application Centre (SAC), Ahmedabad. The ongoing collaborative project funded by SAC commenced in November 2014.

Objectives:

1. To designate marine fishery resources habitat for PFZs exploration/management and conservation using remote sensing and GIS.
2. To study signatures of oceanic variables synergistically.
3. To study patterns, spatio-temporal variability in oceanographic events/features with reference to their occurrence, intensity, persistence, re-occurrence and seasonality.
4. To derive essential fish habitat index based on statistical analysis and weights.
5. To designate PFZs and to designate sites, conservation sites for fishes through area/time/gear closure.
6. To transfer methodology for integrated PFZs and designated spatial zones to INCOIS for closure of PFZs forecast in designated areas.

Study area : Arabian Sea

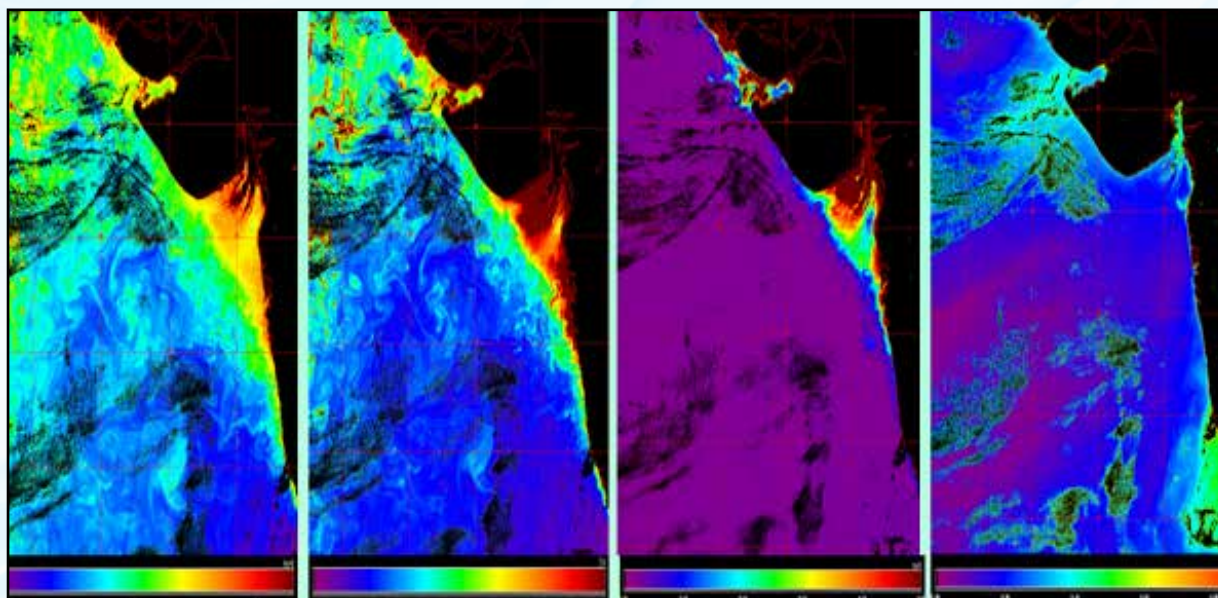
Duration of the project : 2014-2018

Principal Investigator : Shri M. K. Farejiya, Director General (I/C), Fishery Survey of India

Co Principal Investigators : Dr. L. Ramalingam, Zonal Director, Mumbai Base
Shri S. K. Jaiswal, Mechanical Marine Engineer, Mormugao Base
Shri A. Tiburtius, Sr. Fisheries Scientist, Chennai Base
Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist, FSI, HQ

To accomplish the above objectives and responsibilities during the period, FSI Scientists & Sr. Research Fellows working under the SAC project participated onboard the departmental survey vessels *MFV Matsya Nireekshani* attached to Mumbai Base of FSI

and *MFV Sagarika* attached to Mormugao Base of FSI. Both the vessels were deployed for survey, assessment and monitoring of fishery resources along the North-West coast between Lat. 12°-23°N. Altogether, both survey vessels were out at sea for a total of 244 days & conducted fishing operations for 176 days. The vessels operated 504 nos. hauls, expending a total of 745.95 hrs CPUE. The demersal fishery catch data collected on-board the vessels have been regularly shared with SAC, Ahmedabad for further evaluation of the catch data.



12.3 Strengthening of Database and Geographical Information System for Fisheries Sector (CSS)

Objectives:

- † Interacting with Maritime States and Union Territories for improving marine landing data collection by providing necessary training on the data collection methodology, data processing and fish taxonomy in collaboration with CMFRI at different places.
- † Printing of Handbook on Taxonomy in regional languages for the benefit of data enumerators.
- † Conducting Marine Fisheries Census of Andaman & Nicobar and Lakshadweep Islands.

Results

As per the objectives of the Central Sector Scheme (CSS) on “Strengthening of Database and Geographical Information System of the Fisheries Sector”, Government of India, the Fishery Survey of India had conducted the Marine Fisheries Census in Andaman & Nicobar and Lakshadweep Islands during February-March 2016 as part of the National Marine Fisheries Census – 2016 in collaboration with Fisheries Departments of both the Island groups.

As part of the census, the enumerators collected information on fisher folk families including social, educational and gender-wise occupational status, details of fishing craft and fishing gear ownership. Besides, the information on infrastructure facilities available in fishing villages and other facilities for fishing industry, details of landing centres, etc. were collected by the supervisors.

The census data were scrutinized at the Fishery Survey of India, Mumbai (Hqs) and sent to the Central Marine Fisheries Research Institute (CMFRI), Kochi for data entry, processing and analysis for preparation and printing of the National Marine Fisheries Census Report - 2016.

13. ADMINISTRATION AND FINANCE

Shri Mahesh Kumar Farejiya, Director (Engineering) was the Head of the Institute with additional charge of the Director General during the year under report.

13.1 Sanctioned posts

The category-wise numbers of sanctioned posts are furnished below:

Group	Category	No. of Posts		
		Headquarters	Bases	Total
A	Scientific	7	26	33
	Technical	5	12	17
	Administrative	1	-	1
B	Scientific	6	28	34
	Technical	6	35	41
	Administrative	14	36	50
	Floating staff	-	95	95
C	Scientific	-	1	1
	Technical	4	159	163
	Administrative	32	98	130
	Floating staff	-	184	184
Total		75	674	749

13.2 . Officers in different stations

Name and designation of the officers of the Institutes as on 31st March 2017 are given below:

Headquarters, Mumbai

Director (Engineering)	Shri Mahesh Kumar Farejiya
System Analyst	Shri N. V. R. Murthy
Senior Fisheries Scientist	Dr. Vinod Kumar Mudumala
Statistician	Shri P. Chalapati Rao
Fisheries Scientist	Dr. Ansuman Das
Programmer	Shri Chittajallu Bhaskar
Programmer	Shri Bapu M. Raut
Programmer	Shri Ashish Kumar
Assistant Account Officer	Shri J. G. Ohol

Fisheries Scientist	Shri P. Tamilarasan
Junior Fisheries Scientist	Shri N. Unnikrishnan
Assistant Engineer (Workshop)	Shri B. Sathees Kumar

Chennai Base

Senior Fisheries Scientist	Shri A. Tiburtius
Mechanical Marine Engineer	Shri D. Bhami Reddy
Senior Fisheries Scientist	Shri J. E. Prabhakar Raj
Junior Fisheries Scientist	Dr. J. Jayachandra Dhas
Junior Fisheries Scientist	Dr. Manas Kumar Sinha
Junior Fisheries Scientist	Dr. A. John Chembian

Mumbai Base

Zonal Director	Dr. L. Ramalingam
Service Engineer (Mech.)	Shri Balanayak Banavat
Fisheries Scientist	Dr. S. K. Dwivedi
Fisheries Scientist	Shri A. S. Kadam
Junior Fisheries Scientist	Shri Jacob Thomas

Visakhapatnam Base

Senior Fisheries Scientist	Shri K. Govindaraj
Mechanical Marine Engineer	Shri C. Dhananjaya Rao
Fisheries Scientist	Dr. Annada Bhushan Kar
Junior Fisheries Scientist	Shri N. Jagannadh
Junior Fisheries Scientist	Shri G. V. A. Prasad

Mormugao Base

Mechanical Marine Engineer	Shri S. K. Jaiswal
Junior Fisheries Scientist	Shri S. G. Patwari

Port Blair Base

Senior Fisheries Scientist	Dr. Sijo P. Varghese
Fisheries Scientist	Dr. H. D. Pradeep
Service Engineer (Mech.)	Shri Manoj Kumar O.T.

Cochin Base

Zonal Director	Shri D. K. Gulati
Senior Fisheries Scientist	Dr. S. Ramachandran
Mechanical Marine Engineer	Shri Dharamveer Singh

13.3 Budget and Accounts

The details of the Budget Grant and Expenditure of the Institute during the year 2016-17

(₹ in Lakhs)

Particulars	Budget Grant	Actual Expenditure
Plan		
Revenue	-	-
Capital	190.00	164.72
Sub-Total	190.00	164.72
Non-Plan		
Revenue	5864.94	5276.74
Capital	50.00	46.82
Dept. Canteen	18.00	16.83
Sub-Total	5932.94	5340.39
Grand Total	6122.94	5505.11

13.4 Appointments

The details of the appointments during the year

Name	Designation	Base/HQs	Date
Shri K. Silambarasan	Sr. Scientific Assistant	Visakhapatnam	18.04.2016
Shri Solly Solomon	Sr. Scientific Assistant	Mormugao	19.04.2016
Shri Nashad M.	Sr. Scientific Assistant	Port Blair	22.04.2016
Shri Harshavardhan D. Joshi	Sr. Scientific Assistant	Chennai	12.05.2016
Ms. Roshan Maria Peter	Sr. Scientific Assistant	Mumbai	15.06.2016
Shri V. B. Premadan	Slipway Worker Gr. II	Cochin	02.02.2017

13.5 Transfers

The transfers effected during the year

Name	Designation	Base/HQs		Date
		From	To	
Shri G. V. A. Prasad	Jr. Fisheries Scientist	Port Blair Base	Visakhapatnam Base	02.04.2016
Shri S. G. Patwari	Jr. Fisheries Scientist	Mumbai Base	Mormugao Base	11.04.2016
Shri V. V. S. Murthy	Mate Gr.I	Port Blair Base	Chennai Base	13.05.2016
Dr. S. Ramchandran	Sr. Fisheries Scientist	Port Blair Base	Cochin Base	16.07.2016
Dr. L. Ramalingam	Zonal Director	Chennai Base	Mumbai Base	19.07.2016
Shri A. Tiburtius	Sr. Fisheries Scientist	Mumbai (HQs)	Chennai Base	28.07.2016
Dr. Vinod Kumar Mudumala	Sr. Fisheries Scientist	Mormugao Base	Mumbai (HQs)	13.10.2016
Shri P. Papa Rao	Upper Division Clerk	Chennai Base	Visakhapatnam Base	30.11.2016
Shri A. K. Khitha	Mechanical Supervisor (Sr.)	Mumbai (HQs)	Mumbai Base	05.12.2016
Shri R. B. Dokare	Mechanical Supervisor (Sr.)	Mumbai Base	Mumbai (HQs)	06.12.2016
Shri J. E. Prabhakar Raj	Sr. Fisheries Scientist	Cochin Base	Chennai Base	12.01.2017
Shri P. Tamilarasan	Fisheries Scientist	Chennai Base	Cochin Base	13.01.2017
Dr. Sijo P. Varghese	Sr. Fisheries Scientist	Cochin Base	Port Blair Base	24.03.2017
Dr. H. D. Pradeep	Fisheries Scientist	Port Blair Base	Mormugao Base	31.03.2017

13.6 Promotions

The promotions effected during the year

Name	Designation		Base/HQs	Date
	From	To		
Shri J. E. Prabhakar Raj \$	Fisheries Scientist	Sr. Fisheries Scientist	Chennai Base	01.02.2013
Shri G. V. A. Prasad	Sr. Scientific Assistant	Jr. Fisheries Scientist	Visakhapatnam Base	18.04.2016
Shri Premchand	Deputy Director General (Fy)	Director General	Mumbai (HQs)	29.07.2016
Shri Babu M. Raut *	Data Processing Assistant	Programmer	Mumbai (HQs)	16.03.2017
Shri Ashish Kumar *	Data Processing Assistant	Programmer	Mumbai (HQs)	20.03.2017
Smt. M. K. Sreemathi	Office Superintendent	Sr. Administrative Officer	Mumbai (HQs)	22.03.2017

\$ Proforma promotion.

* The post of Data Processing Assistant got re-designated to the post of Programmer as per Ministry's Order dated 06.03.2017.

13.7 Grant of Modified Assurance Career Progression (MACP)

A total of 3 officers, 31 administrative & technical staff and 17 floating staff were granted MACP during the year.

13.8 Retirements

The details of retirements of officers/ staff during the year

Name	Designation	Base/HQs	Superannuation/ Voluntary	Date
Shri S. Antony Pitchai	Sr. Deckhand	Chennai	Superannuation	30.04.2016
Shri M. Dhanaraju	Netmender	Visakhapatnam	Voluntarily	01.06.2016
Shri N. Sastha	Sr. Deckhand-cum-cook	Chennai	Superannuation	30.06.2016
Shri A. B. Kishore	Multi Tasking Staff	Porbandar	Superannuation	30.06.2016
Shri G. Yerranna	Netmender	Visakhapatnam	Voluntarily	04.07.2016
Shri Premchand	Director General	Mumbai (HQs)	Superannuation	31.07.2016
Shri M. Samsunder	Chief Engineer Gr. I	Chennai	Superannuation	31.07.2016
Shri Johnson K. Kuriakose	Chief Engineer Gr. I	Cochin	Superannuation	31.07.2016
Shri K. C. Nelson	Slipway Worker Gr. II	Cochin	Superannuation	31.07.2016
Shri N. L. Solanki	Netmender	Porbandar	Superannuation	30.09.2016
Shri T. A. Sajive	Chief Engineer Gr. I	Cochin	Superannuation	30.11.2016
Shri K. K. Gopi	Assistant Foreman (Machine Shop)	Cochin	Superannuation	30.11.2016
Shri K. S. Zaviour	Painter	Cochin	Superannuation	30.11.2016
Shri P. K. Santhosh Kumar	Chief Engineer Gr. II	Cochin	Superannuation	30.11.2016
Shri T. Chandran	Netmender	Cochin	Superannuation	30.11.2016
Shri Sisir Kumar Das	Sr. Accountant	Visakhapatnam	Superannuation	30.11.2016
Shri M. Ponraj	Sr. Deckhand-cum-cook	Chennai	Voluntarily	16.12.2016
Shri J. G. Ohol	Assistant Accounts Officer	Mumbai (HQs)	Superannuation	31.03.2017

14. IMPORTANT EVENTS AT BASES AND HEADQUARTERS

14.1 Meetings

Half Yearly Review Meeting



Half Yearly Review of Operational and Scientific Activities (ROSA) meeting was held on 30th September 2016 in the Conference Hall, Fishery Survey of India (HQs), Mumbai. The meeting was chaired by Shri M. K. Farejiya, Director General (I/C). He requested all the Scientists and Engineers to put more efforts for scientific publications in their respective fields. During the meeting qualitative and quantitative performance of the survey vessels carried out by the Bases were reviewed and measures to overcome the lacunae in implementation of proposed programme were discussed.

Annual Review Meeting

The Annual Review of Operational and Scientific Activities (ROSA) meeting of Fishery Survey of India was held during 17th-18th March 2017 at the Mormugao Base of Fishery Survey of India to review the activities undertaken during the year 2016-17 and also to finalize the Fishery Resources Survey, Assessment and Research programme for the year 2017-18.



Consultative Committee Meetings

Mumbai (HQs.)



The 18th Consultative Committee meeting (CCM) of Fishery Survey of India, was held on 30th March 2017 in Fishery Survey of India (HQs), Mumbai under the Chairmanship of Shri Mahesh Kumar Farejiya DG (IC). The members participated from various institutes viz; Central Institute of Fisheries Education (CIFE), Central Marine Fisheries Research Institute (CMFRI), Space Application Centre (SAC), Marine Products Export Development Authority (MPEDA), National Institute Oceanography (NIO), Directorate General of Shipping, Centre For Marine Living Resources & Ecology (CMLRE) and Karanja Macchimar Society & Mahim Macchimar Society. The survey programme 2017-18 of

the FSI fleet was finalized after getting feedback/suggestions from these institutes and societies. Various issues pertaining to the Marine fisheries, Oceanography, Space Applications in the fisheries sector and marine pollution affecting the marine biota were discussed in the meeting.

Chennai Base

The 24th Consultative Group Meeting of Chennai Base of FSI was held at the Conference Hall of Chennai Base of FSI on 1st February 2017 under the Chairmanship of Dr. (Mrs.) Beela Rajesh, IAS, Commissioner of Fisheries, Govt. of Tamil Nadu.



Visakhapatnam Base



The Consultative Group Meeting of Visakhapatnam Base was held at Visakhapatnam Base of FSI on 11th January 2017 under the Chairmanship of Dr. Rama Sankar Naik, IAS, Commissioner of Fisheries, Govt. of Andhra Pradesh.

14.2 Participation of Director General and Scientists in various events

14.2.1 The Director General (I/C) participated in the following events:

Sl. No.	Events	Venue/Date
1	Meeting to discuss the collaborative project on Pop-up satellite Archival Tags (PSAT) and also to discuss on the possible collaboration of INCOIS with FSI with a focus on Tuna and Mackerel.	Chennai, 8 April 2016
2	5 th meeting of the committee constituted to suggest Draft National Policy on Marine Fisheries under the Chairmanship of Dr. S. Ayyappan former Director General, ICAR.	NAAS, New Delhi, 1 June 2016
3	1 st meeting of the PCC of the World Bank/GEF Project on “Ocean Partnerships for Sustainable Fisheries and Biodiversity Conservation Models for Innovation & Reform”.	Chennai, 2 June 2016
4	Meeting on follow-up action on workshop on implementation of Space Technology in fisheries under the chairmanship of Joint Secretary (Fy.).	New Delhi, 3 June 2016
5	25 th meeting of the Inter-Ministerial Empowered Committee on Marine Fisheries and meeting in connection with the fire accident on board the vessel <i>MFV Yellow fin</i> .	New Delhi, 12 August 2016
6	Meeting to discuss the issues relating to use and regulation of LED lights in fishing vessels	New Delhi, 16 August 2016
7	Seminar on “Approaches to clean and sustainable development in Coastal Zones of India-Present status and future need”.	NIO, RC-Mumbai, 25 & 26 August 2016
8	5 th Meeting of Project Management Council (PMC) of Ocean Observation System, SIBER, GEOTRACES.	MoES, New Delhi, 3 November 2016
9	The Celebration of World Fisheries Day.	Vigyan Bhavan, New Delhi, 21 November 2016
10	Workshop/training on aligning Public Authorities (PAs) with RTI Portal of DoPT organized by Project Monitoring Unit (PMU) of DoPT.	COS, New Delhi, 28 November 2016
11	Meeting to discuss the modalities of organizing training and capacity building programme for traditional fishers for Deep Sea Fishing under the Chairmanship of Joint Secretary (Fy).	NFDB, Hyderabad, 7 December 2016

Sl. No.	Events	Venue/Date
12	Meeting to discuss the proposal for Collaborative Project on “Upwelling - driven Near shore Hypoxia Signals and its implication on Biogeochemical processes in connection with coastal fisheries - A time series Approach”.	NIO, RC-Mumbai, 29 December 2017
13	Committee meeting in connection with procurement of new Auxiliary Engine along with the Generators for the vessel <i>Matsya Varshini</i> at Cochin Base of FSI.	Kochi, 12 January 2017
14	Meeting with the General Manager, Cochin Shipyard Ltd., regarding dry-docking repairs of the vessel <i>Blue Marlin</i> .	Kochi, 12 January 2017
15	Attended the inaugural programme of “Marine Exhibition” as a Chief Guest organized by Vishakhapatnam Base of FSI.	Vishakhapatnam, 2 - 3 February 2017
16	Meeting on “Skill Development in Fisheries Sector”.	New Delhi, 8 February 2017
17	Final project review meeting of SATTUNA Project.	INCOIS, Hyderabad, 6 March 2017
18	Annual Review Meeting of Operational and Scientific Activities (ROSA) meeting 2016-2017 of FSI at Mormugao Base of FSI.	Mormugao, 17-18 March 2017
19	Meeting on Taraporevala Aquarium at Commissioner of Fisheries office.	Mumbai, 24 March 2017

14.2.2 Involvement of scientists/ other officials in various programmes conducted by other organizations:

Sl. No.	Name/Designation	Events	Venue/Date
1	Dr. Annada Bhusan Kar, Fisheries Scientist Shri Sujit Kumar Pattnayak, Sr. Scientific Assistant	Stake Holder’s Consultation on the Fishery Policy of Andhra Pradesh	CMFRI, Visakhapatnam, 5 April 2016
2	Shri P. Tamilarasan, Fisheries Scientist	Attended the evaluation committee meeting, Directorate of Fisheries, Tamil Nadu.	Chennai, 6 April 2016
3	Dr. Sijo P. Varghese, Sr. Fisheries Scientist Shri J. E. Prabhakar Raj, Sr. Fisheries Scientist	Process of finalising manuscript on historical data of FSI with a correlation of satellite data by Indian National Centre for Ocean Information Service (INCOIS)	Chennai, 7-8 April 2016
4	Dr. Annada Bhusan Kar, Fisheries Scientist Shri Sujit Kumar Pattnayak, Sr. Scientific Assistant	Central Government Employees Welfare Coordination Committee meeting	Visakhapatnam, 12 April 2016
5	Shri A. Tiburtius, Sr. Fisheries Scientist Dr. Dewanand Uikey, Sr. Scientific Assistant	Stakeholders Meet organized by CMFRI, Mumbai Research Centre	Mumbai, 21 April 2016
6	Dr. Sijo P. Varghese, Sr. Fisheries Scientist	Stakeholders Consultation on implementation of the ocean partnership for sustainable Fisheries and biodiversity conservation – models innovation and reform project	CMFRI, Kochi 22-23 April 2016
7	Shri J. E. Prabhakar Raj, Sr. Fisheries Scientist	Management committee meeting on the rapidly depleting coastal fishery resources held by Sea food Exporters Association of India (SEAI)	Chennai, 22 April 2016
8	Shri N. Jagannath, Jr. Fisheries Scientist	Stakeholder’s consultation meet on Marine Fishery Policy of Andhra Pradesh	SIFT, Kakinada, 2 May 2016
9	Shri P. Tamilarasan, Fisheries Scientist	Attended State Level Administrative Committee meeting on 50% subsidy assistance for fishermen to procure new tuna long liner cum gill netter	Chennai, 13 May 2016
10	Shri A. Tiburtius, Sr. Fisheries Scientist Shri Rahulkumar B. Tailor, Sr. Scientific Assistant	Meeting for site inspection of land allotted for the setting up of Aquatic Animal Quarantine Unit (AAQU) and Disease Diagnostic Laboratory (DDL)	Kalegaon, Palghar, 18 May 2016

Sl. No.	Name/Designation	Events	Venue/Date
11	Shri P. Tamilarasan, Fisheries Scientist	Attended Bid evaluation committee meeting on Mid Sea Fish Processing Unit and stationing a carrier mother vessel for Kanyakumari District arranged by Directorate of Fisheries, Tamil Nadu	Chennai, 27 May 2016
12	Shri K. Govindaraj, Sr. Fisheries Scientist Dr. Annada Bhusan Kar, Fisheries Scientist	Stakeholder's consultation on the Ocean partnership programme for sustainable fisheries and Biodiversity conservation models for innovation and reforms: conducted by the Bay of Bengal Inter Governmental Organisation	Visakhapatnam, 30-31 May 2016
13	Dr. L. Ramalingam, Zonal Director Dr. A. John Chembian, Jr. Fisheries Scientist	Regional workshop on "Fisheries Management in the Context of Highly Migratory Fish Stocks" organized by BOBP-IGO.	Chennai, 4 June 2016
14	Shri S. K. Pattnayak, Sr. Scientific Assistant	Marine Pollution Response seminar organised by the Indian Coast Guard	Visakhapatnam, 8-9 June 2016
15	Dr. L. Ramalingam, Zonal Director Shri C. Babu, Sr. Scientific Assistant	GIZ-MoEF & CC-BOBP-IGO National workshop on "Dissemination of the study Results of Valuation on Coastal and Marine Ecosystems under the TEEB India Initiatives"	Chennai, 27-28 June 2016
16	Dr. Annada Bhusan Kar, Fisheries Scientist Shri S. K. Pattnayak, Sr. Scientific Assistant	Meeting with Directorate of Fisheries, Govt. of Odisha, Cuttack in connection with conducting regional workshop.	Puri, Odisha, 2 July 2016
17	Shri J. E. Prabhakar Raj, Sr. Fisheries Scientist	1 st and 2 nd committee meeting in the heads of Central Govt. Organizations/ Research Institutes.	CMFRI, Kochi, Kerala, 7 July 2016 & 26 July 2016
18	Shri D. K. Gulati, Zonal Director	1 st meeting of working group on marine oil spill for drafting the report on marine oil spill and impact on marine ecosystem	Kochi, 8 July 2016
19	Shri N. Jagannath, Jr. Fisheries Scientist Shri G. V. A. Prasad, Jr. Fisheries Scientist	Meeting in connection with the Forum of Fisheries Professionals	CIFT, Visakhapatnam, 14 July 2016
20	Shri N. Unnikrishnan, Jr. Fisheries Scientist	Expert Committee meeting on Fish Hold Subsidy	MPEDA, Kochi, 4 August 2016, 30 November 2016, 9 March 2017 & 29 March 2017
21	Dr. S. K. Dwivedi, Fisheries Scientist Shri Ashok S. Kadam, Fisheries Scientist	Stakeholders meet organized by CMFRI, Mumbai Research Centre.	Mumbai, 27 August 2016
22	Shri K. Govindaraj, Sr. Fisheries Scientist Dr. Annada Bhusan Kar, Fisheries Scientist Shri N. Jagannadh, Jr. Fisheries Scientist Shri S. K. Pattnayak, Sr. Scientific Assistant Shri S. Pasha, Mechanical Supervisor (Sr.)	20 th India International Seafood Show organized by Marine Product Export Development Authority and Association of Seafood Exporters Association of India	Visakhapatnam, 23-25 September 2016
23	Shri K. Govindaraj, Sr. Fisheries Scientist Dr. Annada Bhusan Kar, Fisheries Scientist	The technical session of the Workshop on "Fish trade related international requirements" organized under the Indo - Norwegian MoU on co-operation on Fisheries and Aquaculture	Visakhapatnam, 25 September 2016
24	Dr. H. D. Pradeep, Fisheries Scientist	Meeting with mechanized fishing boat operators and fish processing units to discuss various issues related to fish and fisheries development in the Island chaired by the Chief Secretary, Andaman and Nicobar Administration	Port Blair, 1 November 2016
25	Shri J. E. Prabhakar Raj, Sr. Fisheries Scientist	Trade committee meeting to finalise course curriculum for vessel navigator and marine fitter trade under craftment training scheme	CIFNET, Kochi, 3 November 2016

Sl. No.	Name/Designation	Events	Venue/Date
26	Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist	Meeting to decide possible strategy for the on-going fishery subsidy negotiations in the World Trade Organisation (WTO).	New Delhi, 9 November 2016
27	Dr. H. D. Pradeep, Fisheries Scientist Shri Swapnil S. Shirke, Sr. Scientific Assistant Shri Nashad M, Sr. Scientific Assistant Shri Pratyush Das, Jr. Fishing Gear Technologist	National seminar on “Ethno medical practices in Andaman and Nicobar Islands: Scope, Limitation and Prospects”	Port Blair, 11-12 November 2016
28	Dr. H. D. Pradeep, Fisheries Scientist	Meeting to discuss the issues towards extending subsidy to fishermen for purchase/ construction of mechanized/ motorized fishing boats during the financial year 2016-2017, in the office of the Director of Fisheries, Andaman and Nicobar Administration	Port Blair, 18 November 2016
29	Shri D. K. Gulati, Zonal Director	World Fisheries Day Celebrations	New Delhi, 21 November 2016
30	Dr. H. D. Pradeep, Fisheries Scientist Shri Swapnil S. Shirke, Sr. Scientific Assistant	World Fisheries Day celebrations organized by Directorate of Fisheries, Andaman & Nicobar Administration jointly with CIARI, Port Blair	Port Blair, 21 November 2016
31	Shri N. Unnikrishnan, Jr. Fisheries Scientist	Expert Committee meeting on Fish Hold Subsidy Scheme	MPEDA (HQ), Kochi, 30 November 2016, 9 March 2017 & 23 March 2017
32	Dr. H. D. Pradeep, Fisheries Scientist Shri Swapnil S. Shirke, Sr Scientific Assistan	International conference on “Climate change adaptation and biodiversity, ecological sustainability and resource management for livelihood security’	CIARI, ICAR, Port Blair, 8-10 December 2016
33	Dr. S. K. Dwivedi, Fisheries Scientist Dr. D. E. Uikey, Sr. Scientific Assistant	Akashwani meeting.	Panvel, Navi Mumbai, 31 December 2016
34	Shri K. Silambarasan, Sr. Scientific Assistant	National Seminar on “Environmental Protection and Sustainability (NCBPS 2016)”	Chennai, 31 December 2016 - 1 January 2017
35	Dr. S. Ramachandran, Sr. Fisheries Scientist	Meeting in Ocean information service and solar power generator conducted by Director of Fisheries, Kerala State	Kochi, 11 January 2017
36	Shri G. V. A Prasad, Jr. Fisheries Scientist	Attended the Stakeholder’s meeting	CIFT, Visakhapatnam, 21 January 2017
37	Dr. H. D. Pradeep, Fisheries Scientist	Meeting on Modalities to develop Deep sea fishing in Andaman and Nicobar Islands	Port Blair, 24 January 2017
38	Shri G. V. A. Prasad, Jr. Fisheries Scientist	One day National Workshop on “Recent Advances and Future Studies on the Coastal Process and Beach Erosion: with special emphasis on Andhra Pradesh Coast”	Visakhapatnam, 8 February 2017
39	Dr. H. D. Pradeep, Fisheries Scientist	Seminar on the theme entitled ‘One Health Approach: Emerging Infectious Diseases and Challenges	Port Blair, 23 February 2017
40	Shri A. S. Kadam, Fisheries Scientist	Quarterly meeting of Agricultural Advisory Committee of Doordarshan Mumbai’s “Krishi Darshan” programme under the scheme “Mass media support to Agriculture Extension”.	Pune, 2 December 2016 & Ratnagiri, Maharashtra, 10 March 2017
41	Shri Nashad M, Sr. Scientific Assistant	National Seminar on ‘Mainstreaming coastal and Marine Biodiversity of India’	Port Blair, 23-25 March 2017

14.3 Visitors / delegations

Following visitors and delegations visited at Fishery Survey of India (HQs) and the respective Base offices. HQs and Base scientists provided them the information on FSI activities including commercially important species, eco-friendly fishing methods, fishing gear technology, navigational and electronic equipments used onboard fishery survey vessels, etc. FSI publications / RIS were also made available to the dignitaries.

Mumbai HQs

Description	Date
28 students along with two staff members, College of Fishery Science, Sri Venkateswara Veterinary University, Nellore, Andhra Pradesh	19 August 2016
Shri Rohit Alok, Editorial Correspondent, The Indian Express, Mumbai	19 December 2016
Shri Sheeru Mathew, Library of Congress, UN (Representative), New Delhi	20 January 2017
Dr. R. K. Sarangi, Scientist, SAC, Ahmadabad	30 January 2017
Ms. Shreya Sodhia, Student of Architecture, Mumbai	8 February 2017
Mr. Kamal Singh and Mr. Rahul Yadav from M/s Deekay Marine Services Pvt. Ltd., Mumbai	14 February 2017
Shri Ajit Gaitonde, Agromar International, Mumbai	3 March 2017
Shri Ajit Gaikwad, M/s. Chand International- Frozen fish & chilled seafood's exporter, Mumbai	21 March 2017
Shri Tata Sudhakar, Scientist F, NIOT, Chennai	14 March 2017

Mumbai Base

Description	Date
28 students along with two staff members, College of Fishery Science, Sri Venkateswara Veterinary University, Nellore, Andhra Pradesh	19 August 2016

Mormugao Base

Description	Date
09 students and 01 staff member, Dhempe College, Panaji, Goa	20 September 2016
Research Scholars from KUFOS, Kochi, Kerala	20 March 2017

Cochin Base

Description	Date
11 students and a staff from the Department of Zoology, Christ College, Thrissur	10 June 2016
25 students and a Professor from the Department of Aquaculture, SH College, Thevara, Ernakulam	22 August 2016
23 trainees and a staff from the State Fisheries Department of Kerala, Aluva, Kerala	8 November 2016
82 students and 9 faculty members from CIFNET, Kochi	8 March 2017
49 B.F.Sc students and a faculty member from Kerala University of Fisheries & Ocean Studies (KUFOS), Kochi	23 March 2017

Chennai Base

Description	Date
15 students of second year M.Sc. (Zoology) from Government Arts College, Nandanam	11-13 July 2016
The Fishing harbour Management Wing, and Dept. of Fisheries officials, Roypuram, Chennai	3 August 2016
Dr. Ramani Bai, HOD and Dr. Arul Vasu, Asst. Prof., Dept. of Zoology, University of Madras, Chennai	10 August 2016
Dr. Yambem Tenjing Singh and Dr. Durga Prasad Behera, National Center for Sustainable Coastal Management, Chennai	12 August 2016
Dr. Mridula Srinivasan, Chief of NMFS Office of Science & Technology, NOAA, USA	28 October 2016

Dr. Beela Rajesh, IAS, Commissioner of Fisheries, Tamil Nadu	1 February 2017
11 fishermen along with one Inspector of Fisheries, Dept of Fisheries, A & N Administration, Andaman & Nicobar	25 February 2017
32 Students and 3 faculty members from Ethiraj womens College, Egmore, Chennai	15 March 2017



The Commissioner of Fisheries, Tamil Nadu onboard MFV Matsya Drushti

Visakhapatnam Base

Description	Date
Shri Basu, Staff reporter, Andhra Jyothi, Andhra Pradesh	6 April 2016
Shri K. Srinivas, Director & Shri F.A. Kirmani, Assistant Manager, KPMG, India pvt Ltd, Gurgaon	10 May 2016
Smt. Pramoda Mali, Faculty, Sri MVKR Fisheries Polytechnique, along with 28 students, Krishna District, Andhra Pradesh	28 June 2016
Shri V. L. Pujan, SI (ME) along with 24 students of CIFNET, Chennai	7 July 2016
Dr. Basudev Tripathi, Scientist 'D', Dr. Subhrendu Sekhar Mishra, Scientist 'C', Dr. Anil Mahapatra, Scientist 'D', Zoological Survey of India, Kolkata, West Bengal	29 August 2016
Smt. E. Harini, Professor, St. Joseph college for women, along with 42 students of 3rd year B.Sc (Zoology), Gnanapuram, Visakhapatnam	14 December 2016
25 BSc. (Industrial Fisheries and Aquaculture) students from Asutosh Fisheries College, Kolkata	24 December 2016
Dr. Nightiangale Devi, Dr. N. Sarang, Asst. Professor, College of Fisheries, along with 25 students, Kawardha, Chattishgarh	16 January 2017
Shri P. Krishna, Lecturer in Zoology, Govt. Junior College, along with 72 students, Srikakulam, Andhra Pradesh	28 January 2017
27 BFSC students from fisheries college, Jabalpur, Madhya Pradesh	10 March 2017

Port Blair

Description	Date
Dr. Navin Kannan, Conservator of Forest, Port Blair	29 May 2016
Shri Dey, Assistant Director of Fisheries, Fisheries Training Centre, A & N Administration, Port Blair	16 July 2016
Four faculty members along with 23 M.Sc. Marine Biology students, Department of Ocean Studies and Marine Biology, Pondicherry University, Brookshabad, Port Blair	24 October 2016
Miss Mahi Mankeshwar and Shri Partha Sarathi Mishra (INLAKS fellow), Salim Ali centre for Ornithology and Natural History, Coimbatore	27 October 2016
Shri Sunil, Office Superintendent, Directorate of Fisheries, Andaman & Nicobar Administration, Junglighat fish landing centre, Port Blair	29 December 2016



Shri Pravin Shinde, Manager and Ms. Neha Sharma, Environment Engineer, Environment Terracon Ecotech Pvt. Ltd., Mumbai	12 January 2017
Shri Xavier D, Fisheries Inspector, Directorate of Fisheries, Andaman & Nicobar Administration, Port Blair	7 February 2017
Shri Mehrzad, Proprietor, Bay B Land Fisheries, Pvt. Ltd., Port Blair	21 February 2017
Shri Manish Choudhari, Deputy Advisor, NITI Aayog, New Delhi	22 February 2017
Shri Aditya Kumar Joshi, IFS, Joint Secretary (Fy.) along with Dr. P. Paul Pandian, Fisheries Development Commissioner, Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture and Farmers Welfare, New Delhi	17 March 2017
Dr. Utpal Kumar Sar, Executive Director (Tech.), NFDB, Hyderabad	17 March 2017



Shri Aditya Kumar Joshi IFS, Joint Secretary (Fy.) addressing the gathering at Conference Hall, FSI Port Blair during his visit to the Base on 17th March 2017

14.4 Participation in Trade Fair/ Exhibition

Visakhapatnam Base of FSI participated in the Utkal-Banga Utsav-2016 organised by All India Agragami Handicapped Samiti, Purba Medinipur, West Bengal at Sahabajipur, Balasore District, Odisha during 21st-25th November 2016.



Visakhapatnam Base of FSI in association with Central Institute of Fisheries Nautical Engineering and Training (CIFNET) & National Institute of Fisheries Post Harvest Technology and Training (NIFPHATT) organized Marine Exhibition-2017 at Visakhapatnam during 2nd-3rd February 2017. The exhibition was inaugurated by Director General (i/c), FSI. In the exhibition, various type of fishing boats, gears, charts on survey activities, survey fleet, fishing methods and fishery resources etc. were displayed. Around 2500 visitors visited the Exhibition.



14.5 Fishermen Rally

Port Blair



A Fishermen Rally was organized on the theme “Code of Conduct for Responsible Fisheries, Save our Seas and Sea life” at Beodnabad, Burmanallah, South Andaman on 28th September 2016. A total of 90 persons including fishermen from Beodnabad, Officials from Department of Fisheries, A & N Administration and scientists from Fishery Survey of India, Port Blair participated in the rally.

Second Fishermen Rally on the same theme was organized at Nilambur, Baratang, North & Middle Andaman on 30th January 2017. A total of 100 persons including fishermen from Nilambur, Baratang, North & Middle Andaman, Officials from Department of Fisheries, A & N Administration and scientists from Fishery Survey of India, Port Blair participated in the rally.



14.6 Street play



Visakhapatnam Base of FSI organized a Street Play on the theme of “Code of Conduct for Responsible Fisheries” on 6th December 2016 at the Netmending hall of Bandaruvanipeta fishing village, Kalingapatnam, Srikakulam Dist, Andhra Pradesh.

14.7 Implementation of Vigilance Awareness Week and Swachhta Pakhwada

Vigilance awareness week

The “Vigilance Awareness Week” was observed by the Fishery Survey of India (Hqs.) and its Bases from 31st October, 2016 to 5th November, 2016. All the officials took oath on this occasion. The importance of the observance of this week was briefed by the respective Incharge of the Base offices.



Swachhta Pakhwada/ Abhiyan observed by Fishery Survey of India HQs and Bases

Mumbai (HQs)

The FSI (HQs), Mumbai had implemented Swachhata Abhiyan on the eve of Mahatma Gandhi Jayanti i.e., on 2nd October 2016 and also observed Swachhata Pakhawada during 16th -31st October 2016. In the FSI (HQs) the officials of FSI along with local fishermen and stakeholders of Mumbai actively participated in the event.



Mumbai Base



The Mumbai Base of Fishery Survey of India observed "Swachhata Pakhwada" from 16th - 31st October 2016. During the period various cleanliness activities were undertaken including the cleaning office premises, arranging the old files /records, weeding out of the old records, etc. A special cleanliness programme was also arranged on 2nd October, 2016 on the birth anniversary of the Mahatma Gandhi.

Mormugao Base

Mormugao Base observed Swachhata Pakhawada during 16th - 31st October 2016. On this occasion, office and premises were cleaned and also conducted a plantation programme in the office premises. All the officials have actively participated in the cleaning drive.



Cochin Base



Cochin Base conducted Swachhata Pakhawada programme at Fort Kochi on 31st October 2016 along with one day regional workshop. Prof. K.V. Thomas Hon'ble Member of Parliament had inaugurated the workshop as well as "Swachhata Pakhawada". He stressed the need of hygienic environment in the fish landing centres of the state and in the field of fish trade as per the demand in the international market. The officials were insisting the need of infra structure facilities at the fish landing centre and establishment of ice plants, sufficient light, pressurized pump for cleaning etc.



Marine Engineering Division, Kochi



MED, Kochi conducted Swachhata Pakhwada in the premises on 2nd October 2016. All the staff members actively participated in the Swachh Bharat Mission.

Chennai Base

Chennai Base organized “Special Swachhata Abhiyan” on 2nd October 2016 and Swachhata Pakhwada from 16th - 31st October 2016 by conducting various activities. All the Staff members voluntarily involved with enthusiasm to participate in the cleanliness drive.



Visakhapatnam Base



Visakhapatnam Base Officers and Staff observed ‘Special Swachhata Abhiyan’ by undertaking various Swachhata Abhiyan / activities in the office premises and in the jetty No.6 of fishing harbour on 2nd October 2016.

Port Blair

Port Blair base of FSI conducted Swachhata Pakhwada inside and outside of the office premises on 2nd October 2016. All the staff members were asked to participate voluntarily in the Swachh Bharat mission being conducted in their residential locality.



14.8 Workshop/open house conducted by the institute

As part of the extension activities, the Mumbai (HQs.) and Base offices of Fishery Survey of India organized regional workshops/open houses at major marine fish landing centres in the maritime States/ UTs.

Mumbai Base



A one day regional workshop and exhibition on **“Marine Fishery Resources off Maharashtra and Diversified Fishing Methods”** was organized on 5th November 2016 at Chanje Gram Panchayat Hall-Terrace, Karanja, Uran for the benefit of local fishermen. Shri Shivdas Nakhwa, Chairman, Karanja Machhimar Co.-op. Society Ltd., Karanja was the Chief Guest and Dr. L. Ramalingam, Zonal Director, Mumbai Base of FSI presided over the function. During the workshop, three technical papers were presented by the Scientists of the Base. A total of around 100 fishermen, boat owners, representatives of Mass-media, etc attended the programme.

Mormugao Base

A Regional Workshop on **“Marine Fishery Resources of Goa: Sustainable Utilization, Development and Management”** was organized on 2nd December 2016 at Municipal Hall, Canacona, Goa. The Workshop was inaugurated by Dr. (Smt.) Shamila Monteiro, Director of Fisheries, Govt. of Goa. Shri S. K. Jaiswal, Mechanical Marine Engineer, FSI, Mormugao Base had presided over the function. Shri Chandrakant Velip, Dy. Director of Fisheries Govt. of Goa, Shri Suraj V. Pagi, President, Akhil Goa Kshatriya Pagi Samaj, Canacona, Goa



alongwith fishermen society, Dr. (Smt.) Shamila Monteiro, Director of Fisheries, Govt. of Goa, Chief Guest, addressed the fishermen/women of Akhil Goa Kshatriya Pagi Samaj regarding exploration and exploitation of marine fishery resources on a sustainable manner for Conservation and Management of the fishery resources. A total of 172 Fishermen/Women from Canacona, Goa and official from Dept. of Fisheries, Govt. of Goa participated in the workshop.

The Base has conducted **“Open House/Marine Fishery Resources exhibition”** on 28th February 2017. A total of 50 students and 02 teachers' staff of Govt. Higher Secondary School Baina, Vasco- da- Gama, Goa participated in the Open House programme. The students were familiarized with FSI activities



Chennai Base



The regional workshop on **“Marine fishery resources of Tamil Nadu”** was conducted on 3rd November 2016 at Pazhaverkadu, Thiruvallur Dist. Tamilnadu, for the benefit of Pazhaverkadu Ponneri fishermen. Shri M. Jaypal, village president was the Chief Guest and Shri C. Venkatachalam, Asst. Director, Dept. of Fisheries, Pooneri presided over the function. Shri A. Tiburtius, Sr. Fisheries Scientist, FSI delivered the Keynote address. The Base scientists delivered talks on the Marine Fishery resources of Tamilnadu, Code of Conduct for Responsible Fisheries, Diversified fishing methods, etc., in the technical session. Around 151 fishermen and public were attended the workshop.

The second one day regional workshop on **“Marine Fishery Resources of Tamil Nadu coast”** was conducted at community hall at Mahabalipuram, Kanchipuram district on 15th February, 2017 for the benefit of the fishermen from four villages viz., Kokilamedu, Vempurusham, Mahabalipuram and Deveneri. Smt. N. Chandra, Joint Director of Fisheries, Government of Tamil Nadu inaugurated the workshop. Shri A. Tiburtius Sr. Fisheries scientist delivered the keynote address. Shri D. Rajesh, President, Fishermen Co-operative Society, Mahabalipuram and other Society officials from Vempurusham, Kokilamedu were also present in the event. Scientists of the base presented technical papers on marine fisheries. An Open House was also arranged at the venue where in fishery charts, photograph of fishes, models of gears, gear accessories and life saving equipments were displayed. About 101 fishermen from Mahabalipuram, Kokilamedu, Devaneri and Mahabalipuram village attended the workshop and benefited .



Cochin Base



One-day regional workshop on **“Marine fishery resources of Kerala coast - Sustainable utilization”** and **“Swachh Bharat Abhiyan Programme”** in collaboration with Cochin Municipal Corporation at Albuquerque landing centre, Fort Kochi on 31st October 2016. The Workshop and Swachhta Abhiyan was inaugurated by the Hon'ble Member of Parliament, Prof. K. V. Thomas.

Visakhapatnam Base

One day Regional Workshop on **“Marine Fishery Resources of the Upper East coast of India”** was organized on 5th August 2016 in association with the Directorate of Fisheries, Govt. of Odisha at the Youth Hostel, Puri, Odisha. Shri Janaki Ballav Dash, Addl. Director of Fisheries (Technical), Govt. of Odisha was the Chief Guest. Shri K. Govindaraj, Sr. Fisheries





Scientist delivered the key note address. The Scientist from CMFRI and President of All Odisha Traditional Fish worker's Union were also participated in the events. During the workshop an exhibition was also organized in the workshop venue wherein, charts on fishery resources, blow-up photographs of fishes etc. and eco-friendly fishing gears were displayed.



Second one-day Regional Workshop on **“Marine Fishery Resources of the Andhra Pradesh coast”** was organized in association with the Department of Fisheries, Govt. of Andhra Pradesh at the Community Hall, Kalingapatnam, Srikakulam Dist., Andhra Pradesh. On 6th December 2016 Smt. Gangalla Adilaxmi, Sarpanch, Bandaruvanipeta, was the Chief Guest on this occasion. Dr. V. V. Krishnamurthy, Dy. Director of Fisheries, Govt. of Andhra Pradesh, Shri Guntu Laxmayya, Mandal Parisad Teritoirrial Constituency (M.P.T.C) and Ex Sarpanch, Bandaruvanipeta, Shri Komara Narasimha Murthy, President,

Marine Fishermen Cooperative Society, Bandaruvanipeta, Shri Naka Laxmayya, M.P.T.C, Kalingapatnam were the Guests of Honour. Shri K.Govindaraj, Sr. Fisheries Scientist delivered the key note address. Besides the workshop an exhibition was also organized in the workshop venue wherein, charts on fishery resources, blow-up photographs of fishes etc. and eco-friendly fishing gears were displayed.

Port Blair Base

One day Regional Workshop on **“Marine Fisheries Resources of Andaman and Nicobar Islands and Diversified Fishing Methods”** was organized on 28th September 2016 at Beodnabad, Burmanallah, South Andaman. The main aim of the workshop was to disseminate the information on the resources potential and availability of Oceanic as well as perch resources of Andaman and Nicobar waters, Diversified fishing methods to exploit these abundant resources, Significance of optimum utilization of fishery resources and to save the marine environment etc. to the local fishermen. Around 90 fishermen, 5 Panchayat Raj Institution (PRI) members and 5 Fishery officials participated in the workshop.



Second one-day Regional Workshop on **“Marine Fisheries Resources of Andaman and Nicobar Islands and Eco-friendly Fishing Methods”** was organized on 30th January 2017 at Nilambur, Baratang, North and Middle Andaman. The main aim of the workshop was to disseminate the information to the local fishermen and fisheries officials. A total number of 100 participants including fisher folks, delegates from Department of Fisheries, Andaman and Nicobar Administration, Port Blair attended the workshop.



14.9 Official Language Activities

14.9.1 Hindi workshops and seminars

Mumbai (HQs)



A one day Hindi workshop was organised on 15th June 2016 at Fishery Survey of India (Hqrs.) for the staff members to encourage the use of Hindi in Official work. Smt. Reeta Chathurvedi, Hindi Pradhyapak was invited to deliver a lecture on 'Official Hindi'. She gave practical training in noting in Hindi. She requested everyone to increase the use of Hindi in Official work. Twenty staff members actively participated in the workshop.

The Second one-day Hindi workshop was conducted on 16th September 2016. Shri Naresh Kumar, Officer-in-Charge, Central Translation Bureau was invited to deliver a lecture on "*Technical Terminology & its use in official work*". He briefed on to choose the right Hindi word for technical terms while working

in Hindi. He also gave some practical training in translation. Altogether thirty staff members actively participated in the workshop.

Third Hindi workshop was organized on 24th November 2016. Dr. Vishwanath Jha, Deputy Director, Hindi Teaching Scheme, New Mumbai was the Chief Guest during the workshop. He gave a lecture on "*General Hindi and its usage in official work.*" Altogether thirty staff members participated in the workshop.

Fourth Hindi Workshop was organized on 20th February 2017. Dr. Sunita Yadav, Deputy Director, Regional Implementation Office, New Mumbai was invited to deliver a lecture on "*Official Language Rules, Official Language Act 1963 and some guidelines to prepare Quarterly Progress Report regarding progressive use of Hindi*". She elaborated on the above topic and highlighted the importance of implementation of official language in day to day official work. Twenty five officials and staff members actively participated in the workshop.

Mumbai Base

A one day Hindi Workshop was organized by Mumbai Base on 17th September 2016 at FSI Mumbai Base. Shri Naresh Kumar, Assistant Director, Central Translation Bureau, Mumbai was the subject specialist for this workshop and he delivered a lecture on the topic "*Hindi Technical Terminology in Official Hindi Work*". While addressing the participants, he urged them to utilize the knowledge gained in the workshop and its use in day to day official work. A total of thirty seven Officials and Staff members actively participated in the workshop.



Second Hindi workshop was organized on "*Karyalayeen kamkaj me Hindi ka prayog*" on 31st January 2017 at Mumbai Base of FSI. Shri Naresh Kumar, Assistant Director, Central Translation Bureau, Belapur, Navi Mumbai gave lecture on the topic. He delivered a talk on the importance of Official language in day-to-day official work. The workshop was attended by all the Staff and Officers of the Base.





Mormugao Base



person in the workshop. Shri S. K. Jaiswal, Mechanical Marine Engineer welcomed the gathering and urged to utilize the knowledge gained in the workshop in day-to-day official works as well as for self use. Officers and Staff members actively participated in the workshop.

Third Hindi Workshop was organized at the base on 23rd March 2017 on the subject *“Official Language Hindi”*. Ms. Sheena K. P., Jr. Translator, Indian Coast Guard, Goa, was the resource person in the workshop. Officers and Staff members actively participated in the workshop.

The Mormugao Base conducted a *“Hindi Workshop”* on 20th June 2016 for the Officers and Staff of this office to improve and implement the official work in Hindi. Dr. (Smt.) Shubrata Mishra was the Chief Guest and resource person on the event. The officers and staff have actively participated in the workshop.

Second Hindi Workshop was organized at the base on 8th December 2016 on the subject *“Use of Hindi in routine correspondence”*. Shri Naresh Kumar, Assistant Director, Central Translation Bureau, Mumbai Centre was the resource



Cochin Base



Four Hindi Workshops were organized by the base on 23rd June 2016, 26th September 2016, 26th December 2016 and 21st March 2017. The workshops were attended by all the officers and staff members. On 21st March 2017 Smt. Latha K. V., Hindi Officer from Income Tax Office, Cochin was the resource person for the Workshop.

Visakhapatnam Base

A one day Hindi Workshop on *“Rajbhasha status to Hindi, importance and day to day work in Hindi in Govt. Offices”* was organized on 29th June 2016. Smt. A. Aruna, Pradhyapak, Hindi Teaching Scheme, Visakhapatnam was the resource person in the workshop.

Second Hindi Workshop was organized on 7th September 2016 on the subject *“Various aspects of Hindi as official language and also day to day use of Hindi in Govt. offices”*. Shri R. Rameswar Rao, Hindi Translator, All India Radio, Visakhapatnam was the resource person in the workshop.





Third Hindi Workshop was organized on 19th December 2016 on the subject “*Hindi and English terminology used in day-to-day official works*”. Dr. B. Mohini, Professor in Hindi, Distance Education Center, Andhra University was the resource person in the workshop.

Fourth Hindi Workshop organized on 28th February 2017 on the subject “*Hindi and English terminology used in day-to-day official works*”. Prof. Smt. Syed Meharun, Head & SAP Co-Ordinator, Department of Hindi, Andhra University was the resource person in the workshop.

Port Blair Base



As a part of Official language implementation, a Hindi workshop was conducted on 24th June 2017. Dr. Santosh Mane, Research Officer and Head, Regional Research Centre of Ayurveda was the resources person. The workshop discussed on the aims and reasons of announcement of Hindi as an Official language. He spoke in detail about the various laws related to official language implementation, also he explained key points of Section 3(3) of Official Language Act 1963. He introduced about Hindi Typing and Online Hindi translation. During the proceedings, some practical exercises in Hindi were taught to participants.

Second Hindi workshop was conducted on 21st September 2016 wherein Shri N. Varadhan, Stenographer Gr.I of this Base was the resources person. In his lecture, he spoke about the general functioning of Government offices and its procedure. Further he briefed about how to write noting and drafting in Hindi.

Two Hindi workshops in collaboration with Regional Research Centre of Ayurveda, Junglighat was conducted in the conference hall of FSI Base office on 17th December 2016 and 3rd March 2017. Shri Basudev Das, Retired Hindi Officer, Kolkata Port Trust and Dr. N. Laxmi, Asst. Professor, Department of Hindi, JNRM College, Port Blair were the resource persons respectively. They spoke about various rules related to Official language and evolution of Hindi language.

14.9.2 Hindi Day and Hindi Fortnight Celebration

Mumbai (HQs.)

The Fishery Survey of India (HQs.), Mumbai organized “*Hindi Day*” on 14th September 2016 and “*Hindi Fortnight*” from 14th-28th September 2016. The inaugural function of “*Hindi Day*” and “*Hindi Fortnight*” was held on 14th September 2016 at Fishery Survey of India (HQs.) under the Chairmanship of Shri Mahesh Kumar Farejiya, Director General (IC). In the inaugural speech, Director General (IC) briefed the various competitions to be organized during the period and he requested all the staff members to participate in all the competitions. During this period five competitions were conducted on Hindi essay writing, General Knowledge, Dictation, Antakshari and poem recitation in Hindi. Most of the staff members actively participated in all these competitions.



The valedictory function of the “*Hindi Fortnight*” was held on 28th September 2016 at Fishery Survey of India (HQs) new premises. The function was presided over by Shri M. K. Farejiya, Director General (IC). The Competition on Hindi poem recitation was conducted on the same day. Capt. Biju Joseph, Sr. Dock Master, Mumbai Port Trust was the Chief Guest and Smt. Sadhana Tripathi, Asstt. Director, Regional Implementation Office, (Western Region), Mumbai was the special guest on this occasion. The Director General (IC) in his Presidential speech said that we have celebrated “*Hindi Pakhwada*” like a festival and said all the



Languages have its own importance. The special guest Smt. Sadhana Tripathi in her address said that Hindi may be linked with other Languages and Hindi words may be enriched by adding other regional languages. The prizes were distributed by the Chief Guest to the winners of various competitions. The valedictory function concluded with vote of thanks by Smt. Meera Vellan Rajiv. In house journal '**Matsya Kiran**'-SI. No. 6 in Hindi was released by the Chief Guest during the function.

Mumbai Base



The Mumbai Base of FSI celebrated "*Hindi Day*" on 14th September 2016 and "*Hindi Fortnight*" for the period 14th-28th September 2016. The inaugural function was held on 14th September 2016 at Mumbai Base office under the Chairmanship of Shri B. Balanayak, Service Engineer (Mech.). During Hindi Fortnight, a total of five competitions were conducted viz. Essay Writing, Word Translation, General Knowledge, Handwriting and Hindi Antakshari. The valedictory function commenced with the welcome address by Dr. L. Ramalingam, Zonal Director, Shri Shailesh R., Pay and Accounts Officer, PAO office, Mumbai was the Chief Guest in the function. During the function awards were also conferred upon to the winners.

Mormugao Base

The Mormugao Base of FSI observed "*Hindi Fortnight*" during the period 14th-28th September 2016 and they also conducted Hindi Workshop on "*Use of Hindi in Administrative Correspondence*" on 27th September 2016. Dr. Subrata Mishra, Hindi Trainer, Goa was the resource person of the event. Officials of the Base participated in the workshop.



Cochin Base



The Hindi Fortnight was celebrated during the period 14th-28th September 2016. Shri D. K. Gulati, Zonal Director inaugurated the fortnight. He requested all the officers and staff to take active part in the celebrations. Various Hindi competitions were organized for the Officers and staff including Hindi Quiz Competition. Shri K. K. Ramachandran, Dy. Director (Official Language) from Income Tax Office was the quiz master in the competition. Smt. Meera Sen, Assistant Director, Customs was the Chief Guest during the valedictory function.

Chennai Base

Hindi Fortnight was organized during the period 14th-28th September 2016. On 14th September 2016 Shri P. Tamilarasan, Fisheries Scientist inaugurated the fortnight. Several competitions viz. Hindi writing competition, Hindi translation competition (Hindi-English-Hindi), Quiz competition, Elocution etc was conducted among the staff members during the fortnight. On 28th September, 2016 the valedictory function was conducted where in Shri Komal Singh, Asst. Director, Hindi Teaching Scheme, Chennai was the Chief Guest on the occasion. He distributed prizes to the winners of the competition.



Visakhapatnam Base

“Hindi Fortnight” was observed during 9th - 23rd September 2016. During the Fortnight various competitions in Hindi e.g. poem recitations and story telling by the children of the staff members and Hindi Handwriting and Prasna Manch were organized among the staff members. The valedictory function was organized on 23rd September 2016. Prof. N Satynarayan, Head of the Department of Hindi, Andhra University was the Chief Guest on this occasion. Prizes were distributed by the Chief Guest to the participants during the valedictory function.

Port Blair Base

Hindi fortnight was celebrated during 13th - 27th September 2016. The function was inaugurated by Dr. H. D. Pradeep, Fisheries Scientist. During the fortnight various competitions in Hindi language was conducted. The valedictory function of the Hindi fortnight was conducted on 27th September 2016. Shri M. Johny, Dy Director, Directorate of Fisheries, Andaman & Nicobar Administration, Port Blair was the Chief Guest on this occasion. During the event prizes were distributed by the Chief Guest to the winners of competitions.

14.9.3 Participation in TOLIC Meetings

Participant(s)	Designation	Venue and Date
Shri D. K. Gulati	Zonal Director	Office of the Chief Commissioner of Income Tax, Cochin, 12 May 2016
Shri Premchand Shri Mahesh Kumar Farejiya Smt. Meera Vellan Rajiv	Director General (I/C) Director (Engg.) Jr. Translator	Western Rly (Hqrs.) Mumbai, 24 May 2016
Dr. H. D. Pradeep Shri Shah Nawaz	Fisheries Scientist Jr. Translator	CIARI, Port Blair, 29 July 2016 and 29 December 2016
Shri M. K. Farejiya Smt. Meera Vellan Rajiv	Director General (I/C) Jr. Translator	Western Rly (Hqrs.) Mumbai, 19 October 2016
Shri N. Jagannadh Shri M. Govinda Rao	Jr. Fisheries Scientist Radio Telephone Operator	East Coast Railways, Visakhapatnam, 25 October 2016
Shri D. K. Gulati Smt. Leena T. P.	Zonal Director Jr. Translator	Cochin, 18 January 2017

14.9.4 Regional Official Language Conference

Smt. Leena T.P, Jr. Hindi Translator, Cochin Base attended the regional official language conference held on 27th March 2017, at Mangalore, Karnataka.

14.9.5 Participation in Hindi Workshop

Shri N. Jagannadh, Jr. Fisheries Scientist from Visakhapatnam base of FSI attended the workshop on the “*Application of Technical & Administrative Terminology in Hindi*” during 23rd - 24th November 2016 held at the Headquarters, Eastern Naval Command, Visakhapatnam.

14.9.6 International Hindi Sammelan

Shri N. Jagannadh, Jr. Fisheries Scientist, and Shri M. Govinda Rao, Radio Telephone Operator (RTO) from Visakhapatnam base of FSI attended the 4th International Hindi Sammelan-2017 held at GITAM University, Visakhapatnam during 6th-8th January 2017.

14.9.7 Rajbhasha Sammelan

Shri N.V. Ramana Murthy, System Analyst and Smt. Meera Vellan Rajiv, Jr. Hindi Translator from FSI (Hqs.), Mumbai participated in two day Rajbhasha Sammelan organized by Regional Implementation Office (W), Navi Mumbai on 6th & 7th June 2016 at Bank of India auditorium, Belapur.

14.9.8 Participation in Refresher Course of Translation

Smt. Meera Vellan Rajiv, Jr. Translator, FSI, Mumbai (HQs) and Smt. Nalini Bagade, Jr. Translator, Mumbai Base of FSI participated in five day refresher course of Translation organized by Central Translation Bureau, held from 28th November 2016 to 2nd December 2016 at Central Translation Bureau, Belapur, Navi Mumbai.

14.9.9 Awards/Prizes/ Trophy



Shri Subhrajit Das, Stenographer, Grade-II was honoured with Aashirwad Smrithi Chihn for contribution in implementation of Hindi in Official work. The prize was received by him on 25th Aashirwad Rajbhasha Sammelan held on 23rd September 2016 at Doordarshan office, Worli, Mumbai.

Shri Shubhrajit Das, Stenographer grade II won 2nd Prize in General Knowledge on Tourism and consolation prize in Rajbhasha Gyan Pratiyogita organized by TOLIC, Mumbai.

The Mormugao Base was awarded with a Shield and a Certificate for securing 2nd position among Central Govt. offices. Award was received in Central and West Hindi Joint Conference held at Udaipur, Rajasthan on 30th January 2017 by the Dept. of Official Language.



14.9.10 Incentive Scheme for doing official work in Hindi

Under the Incentive Scheme introduced by the Department of Official Language, Ministry of Home Affairs, Govt. of India for doing original official work in Hindi, First prize as Cash Award was granted to Shri Subhrajit Das, Stenographer Gr. II for the year 2015-16 as per the recommendation of the Assessment Committee constituted for the purpose.

15. CO-OPERATION AND ASSOCIATION WITH NATIONAL AND INTERNATIONAL ACTIVITIES

1. Committee to consider the proposal for introduction of Vessel Monitoring System (VMS).
2. Inter-Ministerial Empowered Committee on Marine Fisheries.
3. Working Group constituted for monitoring and review of implementation of Indian Ocean Tuna Commission resolutions.
4. Working Group for review and revision of data on tuna for submission to the Indian Ocean Tuna Commission.
5. Committee to assess the impact of the fishing ban and to review its duration.
6. Working Group of Experts committee for revalidation of potential fishery resources in the Indian EEZ.
7. Scientific Advisory Committee of Centre for Marine Living Resources and Ecology (CMLRE), MoES, Kochi.
8. Technical Advisory Committee of BOBP-IGO, Chennai.
11. Committee for revalidation of fish catch potential from In-land and Marine Cages.
12. Committee to consider various issues relating to Fisheries/ Security to fishermen.
13. Working group on Animal Committee.
14. Committee on FAO's Technical Consultation on Flag state performance.



16. ABBREVIATIONS

BOBLME	:	Bay of Bengal Large Marine Ecosystem
BOBP-IGO	:	Bay of Bengal Programme – Inter Governmental Organisation
CCRF	:	Code of Conduct for Responsible Fisheries
CIFNET	:	Central Institute of Fisheries Nautical Engineering & Training
CIFRI	:	Central Inland Fisheries Research Institute
CIFT	:	Central Institute of Fisheries Technology
CMFRI	:	Central Marine Fisheries Research Institute
CMLRE	:	Centre for Marine Living Resources and Ecology
EEZ	:	Exclusive Economic Zone
FSI	:	Fishery Survey of India
GIS	:	Geological Information System
GoI	:	Government of India
IFCO	:	International Foster Care Organisation
IITF	:	India International Trade Fair
IMS	:	Indian Meteorological Society
INCOIS	:	Indian National Centre for Ocean Information Science
IOTC	:	Indian Ocean Tuna Commission
IOTCSC	:	Indian Ocean Tuna Commission Scientific Committee
ITPO	:	Indian Trade Promotion Organisation
MCS	:	Monitoring Control and Surveillance
NASC	:	National Aeronautics and Space Council
NFDB	:	National Fisheries Development Board
NIC	:	National Informatics Centre
NIOT	:	National Institute of Ocean Technology
PSC	:	Project Steering Committee
RAC	:	Research Advisory Committee
RALBAM	:	Recent Advances in Lobster Biology, Aquaculture and Management
SAC	:	Space Applications Centre
SAC-MLRP	:	Scientific Advisory Committee on Marine Living Resources Programme
SIFT	:	State Institute of Fisheries Technology
TOLIC	:	Town Official Language Implementation Committee
VMS	:	Vessel Monitoring System
Species:		
YFT	:	Yellow fin tuna
SKJ	:	Skipjack tuna
MAR	:	Marlin
SWO	:	Sword fish
SAI	:	Sail fish
SHA	:	Shark
DOL	:	Dolphin
OTH	:	Others

