सत्यमेव जयते

# वार्षिक रिपोर्ट
# ANNUAL REPORT
# 2019-20

भारत सरकार
भारतीय मात्स्यिकी सर्वेक्षण
मत्स्यपालन विभाग
मत्स्यपालन, पशुपालन एंव डेयरी मंत्रालय

Government of India
FISHERY SURVEY OF INDIA
Department of Fisheries
Ministry of Fisheries, Animal Husbandry and Dairying


ORGANISATION STRUCTURE
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Fisheries & Fishing gear Research
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Engineering
Administration
Accounts

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मत्स्यपालन विभाग
मत्स्यपालन, पशुपालन एंव डेयरी मंत्रालय

## FISHERY SURVEY OF INDIA
Department of Fisheries
Ministry of Fisheries, Animal Husbandry and Dairying

# वार्षिक रिपोर्ट 2019 - 20
# Annual Report 2019 -20


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Director General (I/C)

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# Contents...

## ANNUAL REPORT 2019-20

# From the Director General's Desk

**Dr. L. Ramalingam**

The Fishery Survey of India (FSI) is a Nodal fisheries Institute of Government of India, functioning under the administrative control of Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying has been bestowed with the main responsibility of survey, assessment and monitoring of marine fishery resources of the Indian EEZ by deploying survey fleet and employing different fishing methods. The fishery resources data gathered through surveys is being disseminated regularly to the end users.

The fisheries sector is a principle source of livelihood for a large section of economically under privileged population of the country especially in the coastal areas. This sector plays a significant role in providing Food Security, International Trade and Employment Generation. Fisheries sector in India is being rapidly developing in recent years. In order to increase the fish production and to meet the nutritional needs of the Indian population and to enhance the socio-economic conditions of the Fishermen population, the Government of India has newly created Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying. As the sector is playing an important role in the economic development of the country, it is the need of the hour to upgrade the technologies for harvesting the marine fisheries resources on sustainable basis. Since inception of the Institute, the FSI has been experimenting diversified eco-friendly fishing methods and efficiency of the fishing gears for the benefit of the user groups in addition to the dissemination of information contributing to enhance fish production.

During the year, the FSI had represented various committees *viz.* Central Approval and Monitoring Committee (CAMC), Committee for Redrafting of Marine Fisheries Regulation and Management Bill, Research advisory and monitoring committee of Zoological Survey of India (ZSI), Task Force on Fisheries Subsidies, Committee to look into the aspects of use of high power Engine Boats for Trawling, Committee to work out Fleet Plan for Indian EEZ, Enquiry into loss suffered to the Government on account of LOP Scheme, the aspects of banning/ regulating high HP boats, Task force on Marine Mammal by catch and related international obligations, IOTC compliance committee, Uniform ban on fishing and to suggest further measures to strengthen the conservation and management aspects, Evaluation of tracking devices (Transponders) for fishing vessels.

The Fishery Survey of India has been actively associated with the Indian Ocean Tuna Commission (IOTC) and involved in submission

of data on tuna and allied resources to IOTC and preparation of India's National Report. FSI scientists have also participated in various National, International Workshops and working parties of IOTC.

The Annual Report of Fishery Survey of India is being published regularly which presents the survey cum research and allied activities carried out every year. The current annual report is being published for the year 2019-20 which highlights the survey projects assigned to each vessel, physical target and achievement of the vessels, survey results, scientific findings, extension activities, Inter-institutional projects, administrative & finance matters, official language implementation and other activities.

During the year 2019-20, the institute has provided in vessel practical training to the 50 CIFNET certified trainees for acquiring sea service. As a part of Human Resources Development (HRD), total of 20 traditional fishermen were trained on monofilament tuna long lining onboard survey vessels of FSI and hands on training on modern fishing technologies was imparted to 39 tribal fishermen of Andaman and Nicobar Islands.

During the year, FSI had successfully implemented and observed ***Swachata Abhiyaan*** by involving the staff of the institute to clean the office premises, fishing harbours and fish markets. Vigilance awareness week was observed in order to create awareness among the employees to bring transparency in official works. ***Hindi Pakhawada*** and Workshops were conducted in order to motivate the employees to work in Hindi. The ***International Yoga day*** was also celebrated and created awareness on the benefits of yoga to all the employees.

The survey fleet of the institute collectively achieved 1041 days out at sea, expending fishing effort of 1784.2 hrs and 117759 no. of hooks. Total catch of 45 tonnes was harvested and the revenue realised on fish sale proceeds was ₹1486122. The Budget Grant of the Institute for the year 2019-20 was ₹ 91.00 Cr. and the expenditure was ₹84.32 Cr.

In order to accomplish the mission of "**Blue Revolution, *Neel Kranti***" the Fishery Survey of India is playing pivotal role in serving the nation especially for fisherfolk, stakeholders, fishing industry and other user groups in harvesting the marine fishery resources in sustainable manner.

**(Dr. L. Ramalingam)**
Dy. Director General (Fy.)/
Director General (IC )

# MANDATE

The Fishery Survey of India, Mumbai, under the Ministry of Fisheries, Animal Husbandry and Dairying, Department of Fisheries is the nodal agency for carrying out the survey, assessment and monitoring of the marine fishery resources of the Indian EEZ within the framework of a well defined mandate. The mandate of the Institute is tuned from time to time to match the developmental activities of the fisheries sector as well as to meet the national and global requirements. The mandate of the institute 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) | : | 268.5 |
| 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 (Tamil Nadu) |

### *MFV Samudrika*

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

### *MFV Matsya Shikari*

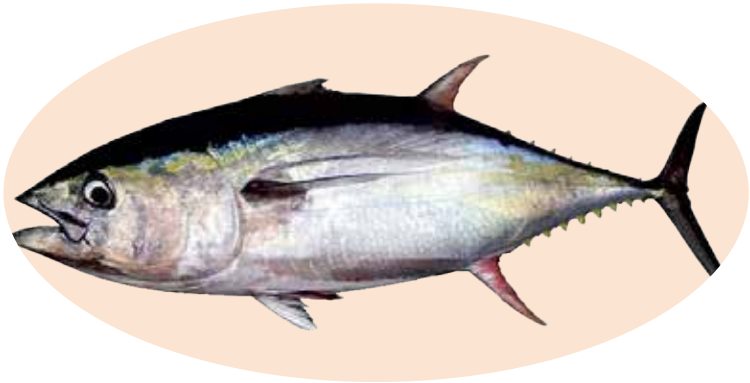
| | | |
|---|---|---|
| OAL (m) | : | 39.8 |
| GRT (t) | : | 352.4 |
| BHP | : | 1740 |
| TYPE | : | Stern Trawler |
| YEAR | : | 1979 |
| BUILT | : | Holland |
| Operational Base | : | Visakhapatnam (Andhra Pradesh) |

### *MFV Matsya Darshini*

| | | |
|---|---|---|
| OAL (m) | : | 36.5 |
| 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 SURVEY, ASSESSMENT & RESEARCH PROJECTS

## 4.1 DEMERSAL AND PELAGIC RESOURCES SURVEY AND MONITORING

### WEST COAST

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

Project components

1. Exploratory survey of demersal resources using fish trawl and shrimp trawl in 100-500 m depth.
2. Monitoring of demersal resources using fish trawl in 30-100 m depth.
3. Exploratory survey 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: Shri B. Balanayak, Service Engineer (Mech.) (01.04.2019 to 03.10.2019)
Shri D. K. Gulati, Zonal Director (03.10.2019 to 31.03.2020)

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

**Results**

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

| Latitude (°N) | Gear/Depth zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| 20 | 17.11 | 24.07 |
| 21 | 34.33 | 28.94 |

**B. Catch Composition (%)**

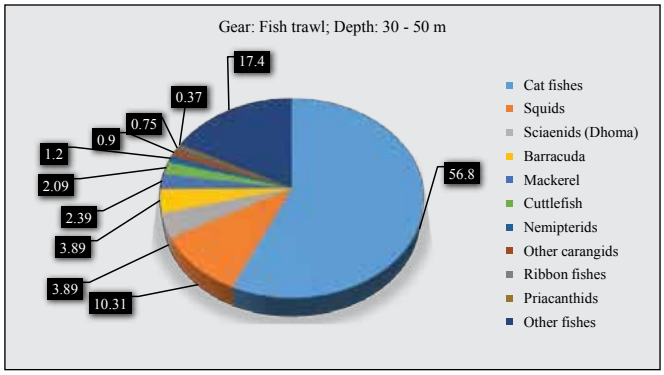
| Species/ Group | Gear/ Depth Zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| Elasmobranchs | - | 0.17 |
| Eel | 0.30 | 0.17 |
| Cat fishes | 56.80 | 49.52 |
| Lizard fishes | 0.30 | 0.35 |
| Priacanthids | 0.37 | 1.52 |
| Nemipterids | 1.20 | 1.04 |

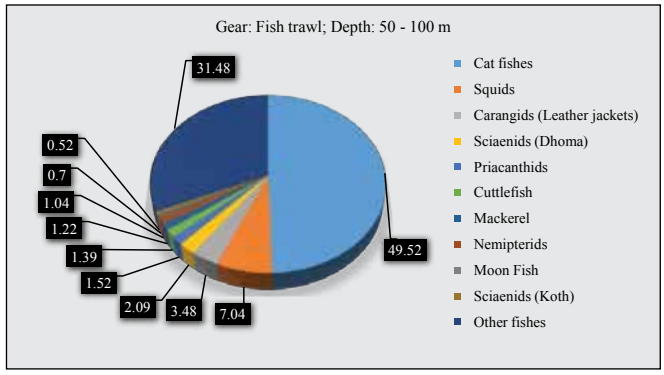
| Species/ Group | Gear/ Depth Zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| Upenoids | 0.15 | 0.09 |
| Sciaenids (Dhoma) | 3.89 | 2.09 |
| Sciaenids (Koth) | - | 0.52 |
| Barracuda | 3.89 | 0.35 |
| Polynemids | 0.37 | 0.30 |

| Species/ Group | Gear/ Depth Zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| Carangids (Leather jackets) | - | 3.48 |
| Carangids (Dagol) | 0.07 | 0.30 |
| Other carangids | 0.90 | - |
| Horse Mackerel | - | 0.35 |
| Decapterids | 0.07 | 0.30 |
| Ribbon fishes | 0.75 | 0.09 |
| King Fish | 0.30 | - |

| Species/ Group | Gear/ Depth Zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| Mackerel | 2.39 | 1.22 |
| Seer fish | - | 0.17 |
| Moon Fish | - | 0.70 |
| Deepsea shrimps | - | 0.09 |
| Squid | 10.31 | 7.04 |
| Cuttlefish | 2.09 | 1.39 |
| Terapon jarbua | - | 0.17 |
| Others | 15.84 | 28.58 |

**Latitude-wise and depth-wise catch composition (in %) of top ten species for *MFV Matsya Nireekshani***




## C. Salient Observations

- The highest catch rate of 34.33 kg/hr was recorded from 30-50 m depth zone in Lat. 21ºN.
- Cat fishes were the dominant variety in both 30-50 m and 50-100 m depth zones.
- Squid catches were mainly comprised of juveniles.

## D. Biological Studies

A total of 173 specimens belonging to 07 species were examined for length frequency studies. 83 specimens belonging to 06 species were examined for length-weight, sex, maturity and food & feeding habit studies.

**Project 2** — **Demersal fishery resources survey, assessment and monitoring of fish stocks along South-Maharashtra, Goa, Karnataka and North Kerala coast between latitude 12ºN and 18ºN.**

Project components
1. Exploratory survey of demersal resources in 100-300 m depth.
2. Monitoring survey 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 & Project Leader: Dr. H. D. Pradeep, Fisheries Scientist

## Results

### A. Catch per unit effort (kg/hr)

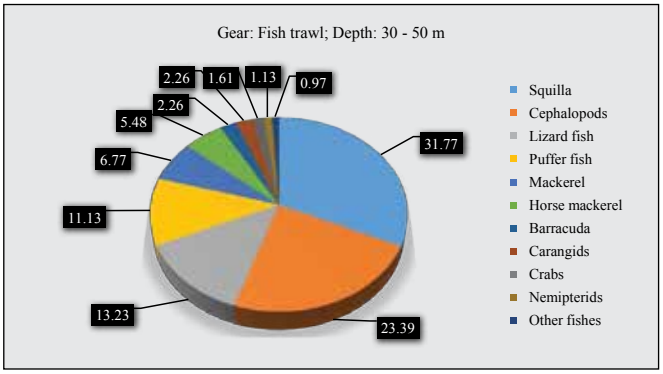
| Latitude (N°) | Gear/Depth zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| 15 | 8.91 | 8.50 |
| 16 | 11.00 | 17.00 |
| 17 | 12.83 | 4.67 |

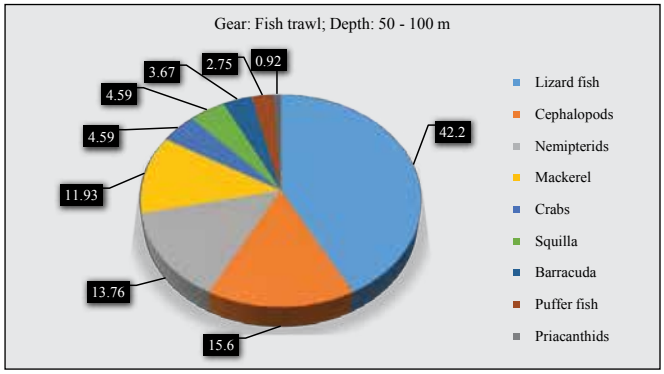
### B. Catch composition (%)

| Species/Group | Depth zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| Cat fishes | 0.16 | - |
| Lizard fishes | 13.23 | 42.20 |
| Priacanthids | - | 0.92 |
| Nemipterids | 1.13 | 13.76 |
| Barracuda | 2.26 | 3.67 |
| Carangids | 2.26 | - |
| Horse mackerel | 5.48 | - |

| Species/Group | Depth zone (m) | |
|---|---|---|
| | Fish trawl | |
| | 30-50 | 50-100 |
| Ribbon fishes | 0.81 | - |
| Mackerel | 6.77 | 11.93 |
| Crabs | 1.61 | 4.59 |
| Cephalopods | 23.39 | 15.60 |
| Puffer fish | 11.13 | 2.75 |
| Squilla | 31.77 | 4.59 |

### Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Sagarika*




### C. Salient observations

- In 50-100 m depth zone, the highest catch rate of 17.00 kg/hr. was recorded in Lat. 16°N. where Lizard fishes, cephalopods, mackerel and barracuda were the major component of the catch followed by the catch rate of 12.83 kg/hr in 30-50 m depth in Lat. 17°N in which Squilla, cephalopods, puffer fishes and mackerels were the major components of the catch.

- In the depth zone of 30-50 m the catch was dominated by Squilla (31.77%), cephalopods (23.39%), lizard fishes (13.23%), puffer fishes (11.13%), mackerels (6.77%), horse mackerels (5.48%), carangids (2.26%), barracuda (2.26), swarming crabs (1.61%), nemiptrids (1.13%), ribbon fishes (0.81%) and cat fishes (0.16%).
- The catch of 50-100 m depth zone was mainly comprised of Lizard fishes (42.20%), cephalopods (15.60%), nemipterids (13.76%), mackerels (11.93%), swarming crabs (4.59%), squilla (4.59%), barracuda (3.67%), puffer fishes (2.75%) and priacanthids (0.92%).

### D. Biomass estimation

Area Lat. 15°N – 17°N (in tonnes)

| Species/Group | Depth zone (m) | |
|---|---|---|
| | 30-50 | 50-100 |
| Cat fishes | 3 | - |
| Lizard fishes | 273 | 3380 |
| Priacanthids | - | 73 |
| Nemipterids | 23 | 1102 |
| Barracuda | 47 | 294 |
| Carangids | 47 | - |
| Horse mackerel | 113 | - |
| Ribbon fishes | 17 | - |

| Species/Group | Depth zone (m) | |
|---|---|---|
| | 30-50 | 50-100 |
| Mackerel | 140 | 955 |
| Crabs | 33 | 367 |
| Cephalopods | 485 | 1249 |
| Puffer fish | 229 | 220 |
| Squilla | 655 | 367 |

**Note:** *Biomass is estimated on the basis of April 2019 (one month) survey, as the vessel MFV Sagarika was at GSL, Goa from May 2019 to March 2020 for her annual dry-docking repairs.*

**Project 3** **Demersal fishery resources survey, assessment and monitoring along South - West coast, Wadge Bank and Gulf of Mannar between latitude 7ºN and 11ºN.**

Project components
1. Demersal fin fish 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 survey of demersal resources using fish trawl in 30-100 m depth.
3. Exploration and species inventory on close dwelling resources in 200-500 m depth.

Gear
- Expo model fish trawl
- 47 m shrimp trawl

**Vessel** ***MFV Matsya Varshini***

Base: Cochin

Project Co-ordinator: Shri D. K. Gulati, Zonal Director (01.04.2019 to 03.10.2019)

Dr. Sijo P. Varghese, Zonal Director (11.11.2019 to 31.03.2020)

Project Leader: Dr. S. Ramachandran, Sr. Fisheries Scientist

## Results

### A. Catch per unit effort (kg/hr)

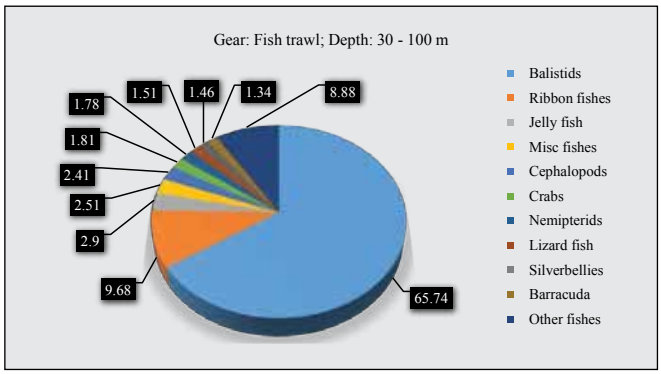
| Latitude (°N) | Gear/Depth zone (m) | | |
|---|---|---|---|
| | Fish trawl | | |
| | 30-100 | 100-200 | 200-500 |
| 7 | 163.02 | 2.6 | - |
| 8 | 167.14 | - | 9.25 |
| 9 | 8.45 | - | - |
| 10 | 29.82 | - | 125.7 |
| 11 | - | - | 16.61 |

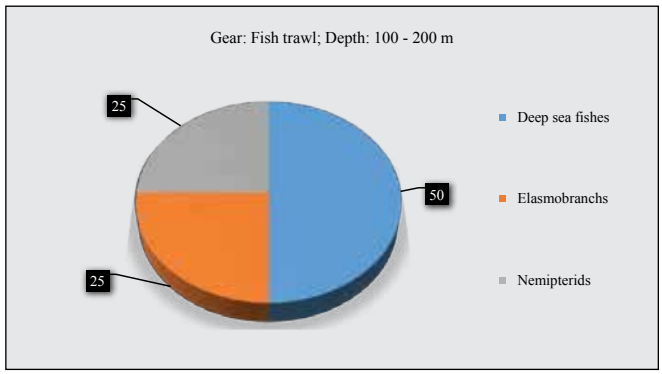
### B. Catch Composition (%)

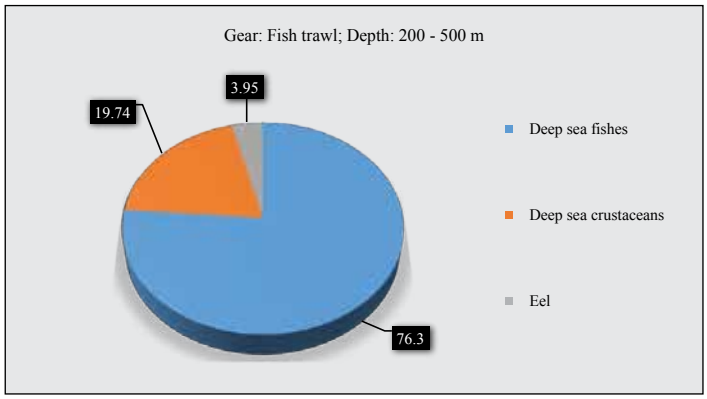
| Species/Group | Gear/Depth zone (m) | | |
|---|---|---|---|
| | Fish trawl | | |
| | 30-100 | 100-200 | 200-500 |
| Elasmobranchs | 0.29 | 25 | - |
| Eel | - | - | 3.95 |
| Clupeoids | 0.10 | - | - |
| Lizard fishes | 1.51 | - | - |
| Perches | 0.69 | - | - |
| Priacanthids | 0.59 | - | - |
| Nemipterids | 1.78 | 25 | - |
| Upenoids | 0.81 | - | - |
| Sciaenids | 0.04 | - | - |
| Silverbellies | 1.46 | - | - |
| Big Jawed Jumper | 0.01 | - | - |
| Barracuda | 1.34 | - | - |
| Pomfret | 0.35 | - | - |
| Carangids | 1.22 | - | - |
| Horse Mackeral | 0.66 | - | - |
| Decapterids | 1.10 | - | - |

| Species/Group | Gear/Depth zone (m) | | |
|---|---|---|---|
| | Fish trawl | | |
| | 30-100 | 100-200 | 200-500 |
| Ribbon fishes | 9.68 | - | - |
| Mackerel | 1.22 | - | - |
| Seer fishes | 0.54 | - | - |
| Moon fishes | 0.24 | - | - |
| Crabs | 1.81 | - | - |
| Balistids | 65.74 | - | - |
| Octopus | 0.18 | - | - |
| Deep sea fishes | - | 50 | 76.30 |
| Molluscan Shells | 0.82 | - | - |
| Gerrids | 0.04 | - | - |
| Misc fishes | 2.47 | - | - |
| Lobsters | 0.02 | - | - |
| Deep sea crustaceans | - | - | 19.74 |
| Cephalopods | 2.41 | - | - |
| Jelly fish | 2.90 | - | - |

## Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Matsya Varshini*




## C. Salient observations

- The highest catch rate of 167.14 kg/hr was recorded in the depth zone of 30-100 m in Lat. 8°N by expo model fish trawl.
- In 30-100 m depth zone, Balistids (65.74 %) were the dominant species and in 100-200 m and 200-500 m depth zones Deep sea fishes with 50 % and 76.30% of catch composition respectively were the dominant species.
- Balistids contributed 90% of the total catch in the area of Lat. 7° and 8° N in November 2019 voyage.
- About 675 kgs of ribbon fish were caught in a single haul operated in the areas Lat. 8° N/ Long. 76° E in the depth zone 30-100 m during December 2019.

## D. Biological studies

Total of 6092 nos. of specimens were measured for length frequency studies and the biological studies carried out for 967 nos. of specimens belonging to 34 species during the period.

## E. Biomass estimation

Area : Lat. 7°N –11°N

(in tonnes)

| Species/Group | Depth zone (m) | | |
|---|---|---|---|
| | 30-100 | 100-200 | 200-500 |
| Elasmobranchs | 33 | 40 | - |
| Eel | - | - | 158 |
| Clupeoids | 12 | - | - |

(in tonnes)

| Species/Group | Depth zone (m) | | |
|---|---|---|---|
| | 30-100 | 100-200 | 200-500 |
| Lizard fishes | 173 | - | - |
| Perches | 78 | - | - |
| Priacanthids | 67 | - | - |

(in tonnes)

| Species/Group | Depth zone (m) | | |
|---|---|---|---|
| | 30-100 | 100-200 | 200-500 |
| Nemipterids | 204 | 40 | - |
| Upenoids | 93 | - | - |
| Sciaenids | 5 | - | - |
| Silver bellies | 167 | - | - |
| Big Jawed Jumper | 1 | - | - |
| Barracuda | 154 | - | - |
| Pomfret | 40 | - | - |
| Carangids | 139 | - | - |
| Horse Mackeral | 76 | - | - |
| Decapterids | 126 | - | - |
| Ribbon fishes | 1110 | - | - |
| Mackerel | 140 | - | - |

(in tonnes)

| Species/Group | Depth zone (m) | | |
|---|---|---|---|
| | 30-100 | 100-200 | 200-500 |
| Seer fishes | 62 | - | - |
| Moon fishes | 27 | - | - |
| Crabs | 207 | - | - |
| Balistids | 7538 | - | - |
| Octopus | 21 | - | - |
| Deep sea fishes | - | - | 3050 |
| Molluscan Shells | 94 | - | - |
| Misc fishes | 283 | 80 | - |
| Lobsters | 2 | - | - |
| Deep sea crustaceans | - | - | 789 |
| Cephalopods | 276 | - | - |
| Jelly fish | 332 | - | - |
| Gerrids | 4 | - | - |

**Project 4** **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 m fish trawl
- 28 m shrimp trawl

**Vessel** ***MFV Lavanika***

Base Cochin

Project co-ordnator Shri D. K. Gulati, Zonal Director (01.04.2019 to 03.10.2019)

Dr. Sijo P. Varghese (11.11.2019 to 31.03.2020)

Project Leader Shri N. Unnikrishnan, Jr. Fisheries Scientist

**Results**

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

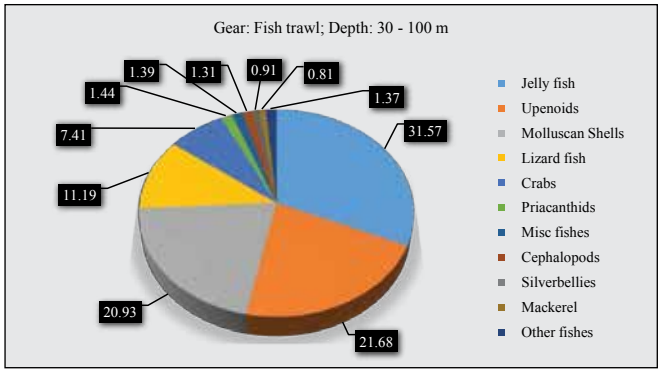
| Latitude (°N) | Gear/Depth zone (m) | |
|---|---|---|
| | Fish trawl | Shrimp trawl |
| | 30-100 | 20-100 |
| 8 | 0.47 | 0.15 |
| 9 | 2.79 | 0.74 |
| 10 | 6.16 | 0.46 |

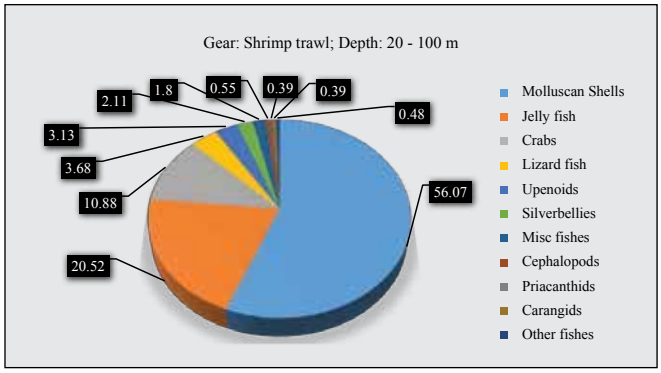
## B. Catch Composition (%)

| Species/ Group | Gear/ Depth zone (m) | |
|---|---|---|
| | Fish trawl | Shrimp trawl |
| | 30-100 | 20-100 |
| Elasmobranchs | 0.16 | 0.16 |
| Clupeoids | 0.09 | 0.16 |
| Lizard fishes | 11.19 | 3.68 |
| Priacanthids | 1.44 | 0.39 |
| Nemipterids | 0.16 | - |
| Upenoids | 21.68 | 3.13 |
| Sciaenids | 0.61 | - |
| Silverbellies | 0.91 | 2.11 |
| Barracuda | 0.03 | - |
| Carangids | 0.17 | 0.39 |

| Species/ Group | Gear/ Depth zone (m) | |
|---|---|---|
| | Fish trawl | Shrimp trawl |
| | 30-100 | 20-100 |
| Ribbon fishes | 0.08 | - |
| Mackerel | 0.81 | 0.16 |
| Shrimps | 0.04 | - |
| Crabs | 7.41 | 10.88 |
| Cephalopods | 1.31 | 0.55 |
| Jelly fish | 31.57 | 20.52 |
| Other perches | 0.03 | - |
| Molluscan Shells | 20.93 | 56.07 |
| Misc fishes | 1.39 | 1.80 |

### Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Lavanika*




## C. Salient observation

- The highest catch rate of 6.16 kg/hrs was recorded in the depth zone of 30-100 m of lat. $10^0$N by fish trawl operation.
- Non-conventional resource, Jelly fish was recorded from 20-100 m depth zone by both fish and shrimp trawl in substantial quantities.
- The Molluscan shells (56.07%) were the dominant variety in 20-100 m depth zone by the shrimp trawl operation.

## EAST COAST

**Project 5** **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 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. A. John Chembian, Jr. Fisheries Scientist

### Results

#### A. Catch per unit effort (kg/hr)

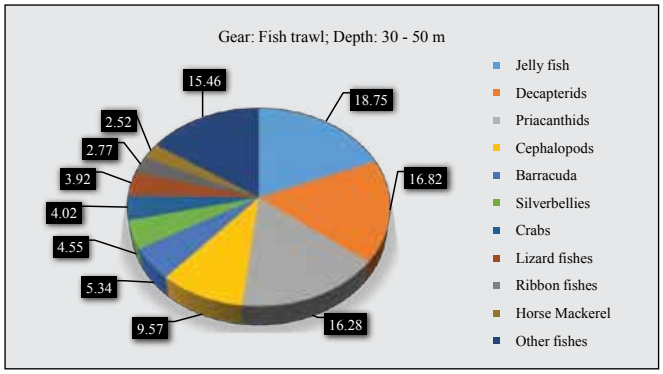
| Latitude (ºN) | Gear/ Depth zone (m) | | | | | |
|---|---|---|---|---|---|---|
| | Fish trawl | | Cephalopod trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 | 30-50 | 50-100 |
| 10 | - | - | 1.4 | - | - | - |
| 11 | 67.33 | 7.33 | 6.17 | - | 11.58 | 56.67 |
| 12 | 27.5 | 24.5 | 26.22 | 23.67 | 13.5 | 6.5 |
| 13 | 11.10 | - | 11.82 | 680 | - | - |
| 14 | 11.48 | - | 11.81 | 32.83 | - | - |
| 15 | 19.33 | - | 9.17 | - | 7.16 | - |

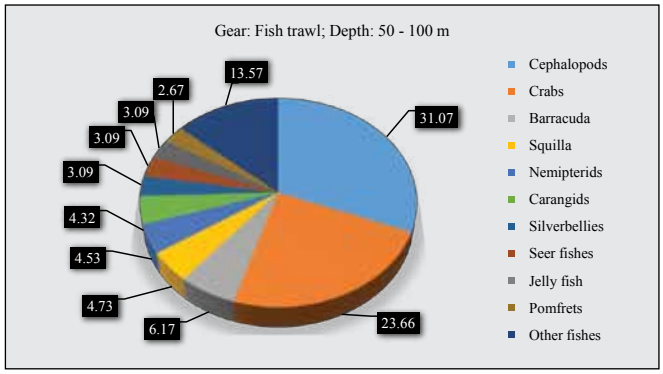
#### B. Catch Composition (%)

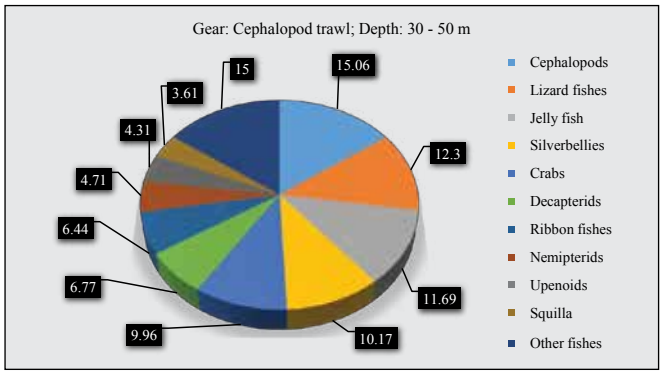
| Species/ Group | Gear/ Depth zone (m) | | | | | |
|---|---|---|---|---|---|---|
| | Fish trawl | | Cephalopod trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 | 30-50 | 50-100 |
| Elasmobranchs | 0.41 | - | - | - | 0.68 | - |
| Eel | 0.25 | - | - | - | - | - |
| Cat fishes | 0.27 | - | - | 0.15 | 5.44 | - |
| Clupeoids | 1.07 | - | 2.00 | - | - | - |
| Anchovies | 0.03 | - | - | - | - | - |
| Lizard fishes | 3.92 | - | 12.30 | 0.45 | 1.70 | - |
| Priacanthids | 16.28 | 0.82 | 2.91 | 0.07 | - | - |
| Nemipterids | 1.81 | 4.53 | 4.71 | 0.30 | 0.85 | - |
| Perches | 0.36 | - | - | - | - | 0.38 |
| Karkara | 0.61 | - | 0.24 | 0.22 | - | - |

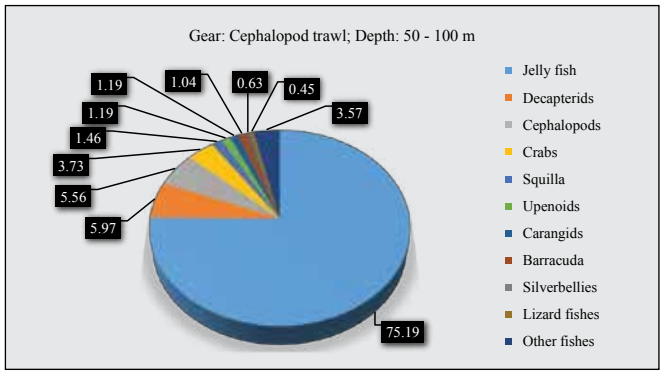
| Species/ Group | Gear/ Depth zone (m) | | | | | |
|---|---|---|---|---|---|---|
| | Fish trawl | | Cephalopod trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 | 30-50 | 50-100 |
| Upenoids | 1.28 | - | 4.31 | 1.19 | 2.04 | - |
| Silverbellies | 4.55 | 3.09 | 10.17 | 0.63 | 7.82 | 3.21 |
| Flat fish | - | - | - | - | 1.19 | - |
| Barracuda | 5.34 | 6.17 | 0.70 | 1.04 | 5.10 | 35.47 |
| Pomfrets | 0.90 | 2.67 | 2.37 | 0.11 | 3.40 | 1.70 |
| Carangids | 1.52 | 4.32 | 2.25 | 1.19 | 2.72 | 4.72 |
| Horse Mackerel | 2.52 | 0.62 | 1.28 | 0.11 | - | 0.57 |
| Decapterids | 16.99 | - | 6.77 | 5.97 | 44.22 | - |
| Ribbon fishes | 2.77 | 1.44 | 6.44 | 0.26 | 4.76 | 1.89 |
| Mackerel | 0.79 | 0.41 | 0.49 | - | - | - |
| Seer fishes | 0.84 | 3.09 | 1.03 | 0.19 | 4.76 | 3.21 |
| Shrimps | 1.21 | 1.23 | 0.15 | 0.26 | 0.68 | 1.13 |
| Crabs | 4.02 | 23.66 | 9.96 | 3.73 | 0.17 | 6.41 |
| Cephalopods | 9.57 | 31.07 | 15.06 | 5.56 | 12.42 | 30.19 |
| Jelly fish | 18.75 | 3.09 | 11.69 | 75.19 | - | 2.83 |
| Puffer fish | 1.93 | 9.05 | - | 1.64 | - | 8.3 |
| Squilla | 0.41 | 4.73 | 3.61 | 1.46 | - | - |
| Others | 1.77 | - | 1.58 | 0.26 | 2.04 | - |

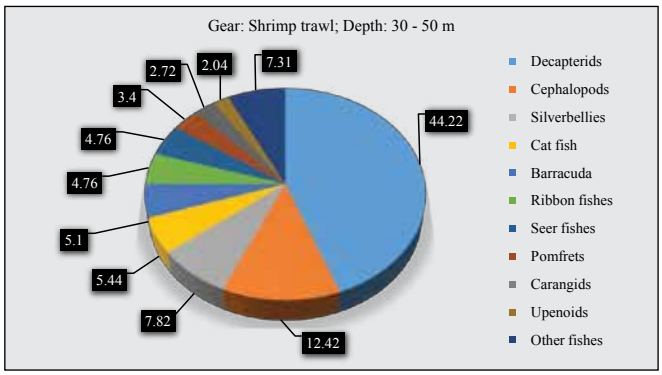
## Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Samudrika*

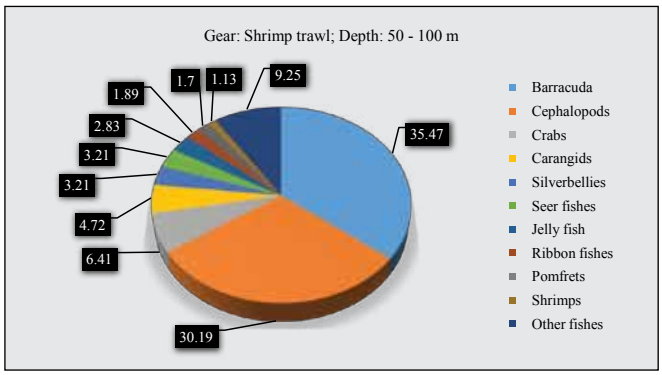





## C. Salient observations

- The highest catch rate of 680 kg/hr was recorded in 50-100 m depth zone in Lat 13°N by using cephalopod trawl followed by 67.33 kg/hr in 30-50 m depth in Lat 11°N by using fish trawl.
- In the depth zone of 30-50 m the catch was dominated by Jelly fish with 18.75% by using fish trawl, cephalopods with 15.06% by using cephalopod trawl and decapterids with 44.22% in shrimp trawl operation.
- In the depth zone of 50-100 m, the catch was dominated by Cephalopods (31.07%) in fish trawl, jelly fishes (75.19%) in cephalopod trawl and barracuda (35.47%) in shrimp trawl.

## D. Biological studies

Total of 10631 nos. of specimens were measured for length frequency studies for 93 species and the biological studies carried out for 3512 nos. of specimens belonging to 89 species during the period.

## E. Biomass estimation

Area : Lat. 10°N - 16°N

(in tonnes)

| Species/Group | Depth zone (m) | |
|---|---|---|
| | 30-50 | 50-100 |
| Elasmobranchs | 74 | - |
| Eel | 28 | - |
| Cat fish | 247 | 20 |
| Clupeoids | 163 | - |
| Anchovies | 4 | - |
| Lizard fishes | 770 | 60 |
| Priacanthids | 1901 | 69 |
| Nemipterids | 338 | 364 |
| Perches | 40 | 27 |
| Karkara | 74 | 30 |
| Upenoids | 317 | 160 |
| Silverbellies | 1041 | 536 |
| Flat fish | 47 | - |
| Barracuda | 821 | 3123 |

(in tonnes)

| Species/Group | Depth zone (m) | |
|---|---|---|
| | 30-50 | 50-100 |
| Pomfrets | 287 | 328 |
| Carangids | 327 | 807 |
| Horse Mackerel | 311 | 100 |
| Decapterids | 3801 | 800 |
| Ribbon fishes | 638 | 273 |
| Mackerel | 99 | 29 |
| Seer fishes | 307 | 476 |
| Shrimps | 167 | 204 |
| Crabs | 671 | 2654 |
| Cephalopods | 1894 | 5132 |
| Jelly fish | 2366 | 10495 |
| Squilla | 122 | 534 |
| Others | 315 | 35 |
| Puffer fish | 218 | 1463 |

**Project 6** **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 survey of demersal resources using fish trawl in 30-100 m depth.
3. Exploratory survey using 34 m shrimp trawl in 30-200 m depth.
4. Exploratory survey using resource specific gear in 30-100 m depth for Hilsa resources.
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

**Vessel** ***MFV Matsya Shikari***

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 (ºN) | Gear/ Depth zone (m) | | | |
|---|---|---|---|---|
| | Fish trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 |
| 16 | 70 | 48.4 | - | - |
| 17 | 55.2 | 48.9 | 61.6 | 66.6 |
| 18 | 46.5 | 14.1 | - | - |

**B. Catch Composition (%)**

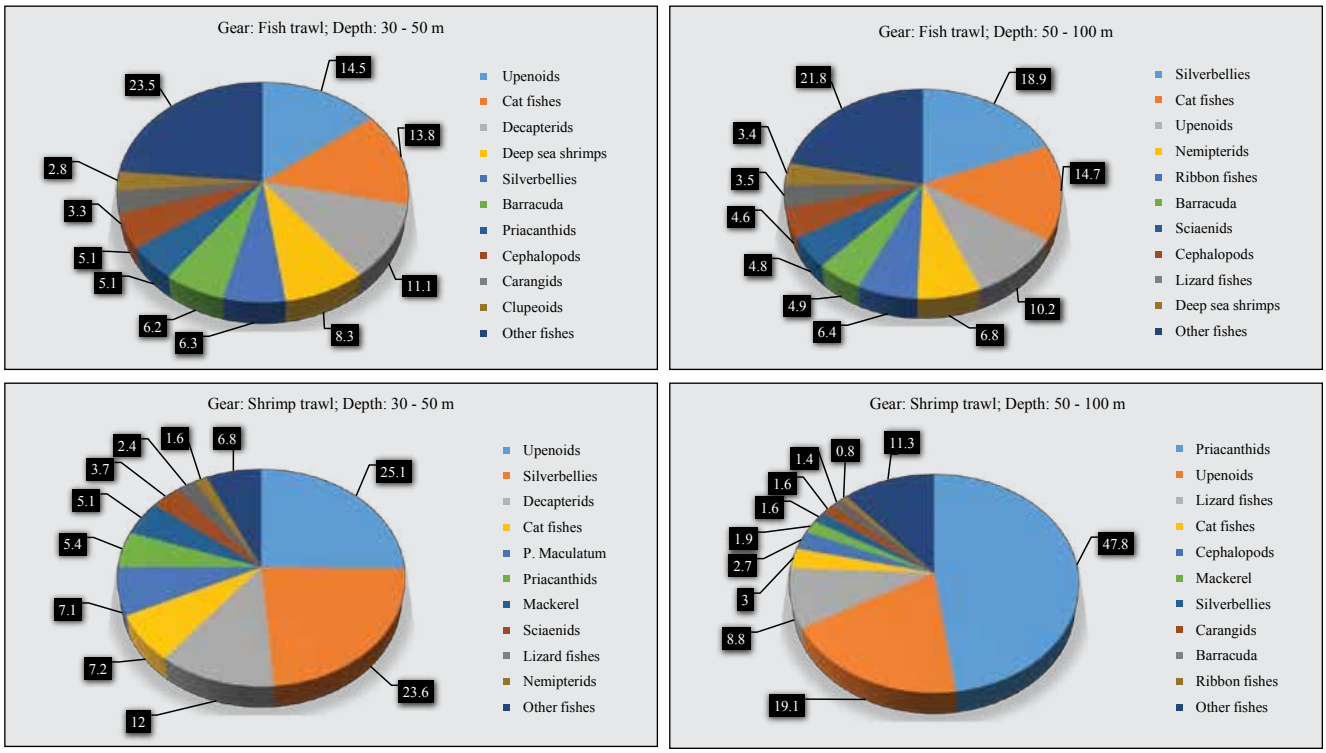
| Species/ Group | Gear/ Depth zone (m) | | | |
|---|---|---|---|---|
| | Fish trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 |
| Elasmobranchs | 2.3 | 2.8 | - | - |
| Eel | 0.1 | - | - | - |
| Cat fishes | 13.8 | 14.7 | 7.2 | 3.0 |
| Clupeoids | 2.8 | 2.1 | - | - |
| Lizard fishes | 2.4 | 3.5 | 2.4 | 8.8 |
| Priacanthids | 5.1 | 2.8 | 5.4 | 47.8 |
| Nemipterids | 0.1 | 6.8 | 1.6 | 0.3 |
| Perches | 2.8 | 0.9 | - | - |
| Upenoids | 14.5 | 10.2 | 25.1 | 19.1 |
| Sciaenids | 1.7 | 4.8 | 3.7 | 0.3 |
| Polynemids | 0.1 | - | 0.3 | - |

| Species/ Group | Gear/ Depth zone (m) | | | |
|---|---|---|---|---|
| | Fish trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 |
| Silverbellies | 6.3 | 18.9 | 23.6 | 1.6 |
| Flat fishes | 1.7 | 1.3 | 0.3 | 0.3 |
| Indian drift fish | 0.5 | 0.4 | 0.3 | 0.3 |
| Barracuda | 6.2 | 4.9 | 1.3 | 1.4 |
| Pomfrets | 0.6 | 0.3 | 0.3 | - |
| Carangids | 3.3 | 0.5 | 0.7 | 1.6 |
| Horse mackerel | 2.5 | 0.4 | - | - |
| Decapterids | 11.1 | 1.9 | 12.0 | - |
| Ribbon fishes | 2.6 | 6.4 | 1.0 | 0.8 |
| Mackerel | 1.2 | 3.0 | 5.1 | 1.9 |
| Seer fishes | 0.1 | - | 0.1 | 0.3 |

| Species/ Group | Gear/ Depth zone (m) | | | |
|---|---|---|---|---|
| | Fish trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 |
| Blackruff | 0.3 | 0.4 | - | - |
| Gerrids | 2.0 | 0.2 | - | - |
| Moon fishes | - | 0.1 | - | - |
| Crabs | 0.3 | 0.4 | 0.3 | - |

| Species/ Group | Gear/ Depth zone (m) | | | |
|---|---|---|---|---|
| | Fish trawl | | Shrimp trawl | |
| | 30-50 | 50-100 | 30-50 | 50-100 |
| Deep sea shrimps | 8.3 | 3.4 | 0.1 | - |
| Cephalopods | 5.1 | 4.6 | 1.3 | 2.7 |
| *P. Maculatum* | 0.4 | 0.4 | 7.1 | - |
| Others | 1.8 | 3.9 | 0.8 | 9.8 |

**Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Matsya Shikari***




## C. Salient observations

- The highest catch rate of 70 kg/hr was recorded in the depth zone of 30-50 m in the Lat 16°N by fish trawl, whereas the catch rate of 66.6 kg/hr was recorded in the depth zone of 50-100 m in the Lat 17 °N by shrimp trawl.
- In the depth zone of 30-50 m, the catch was dominated by Upenoids with 14.5% and 25.1 % followed by cat fishes (13.1%) and silverbellies (23.6%) by fish trawl and shrimp trawl operations respectively.
- In the depth zone of 50-100 m, the catch was dominated by Silverbellies (18.9%) followed by cat fishes (14.7%), upenoids (10.2%) and nemipterids (6.8%) in fish trawl, whereas priacanthids (47.8%), upenoids (19.1%) and lizard fishes (8.8%) were the main species by shrimp trawl in the same depth zone.
- More catches (1921 kgs) were recorded during the month of May 2019 where the catch was dominated by Pony fishes (28.9%) followed by Goat fishes (19.5%), Squids (8.8%), Elasmobranchs (5.9%) and Indian scads (5.8%).

## D. Biological studies

Total of 2863 specimens were examined for the length frequency distribution and 2118 specimens were investigated for detailed biological studies of 20 species.

**Project 7 (A)** **Demersal fishery resources survey, assessment and monitoring along the Upper-East coast between latitude 16°N and 21°N.**

Project components: 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: Shri N. Jagannadh, Jr. Fisheries Scientist

## Results

### A. Catch per unit effort (kg/hr)

| Latitude (°N) | Gear/ Depth zone (m) | | |
|---|---|---|---|
| | Expo model bottom trawl | | |
| | 30-50 | 50-100 | 100-200 |
| 16 | 30.8 | 70.0 | 12.0 |
| 17 | 59.2 | 81.8 | 64.0 |
| 18 | 74.9 | 36.6 | 64.7 |
| 19 | 78.0 | 79.0 | 16.0 |
| 20 | 68.8 | 25.7 | - |
| 21 | 23.0 | - | - |

### B. Catch Composition (%)

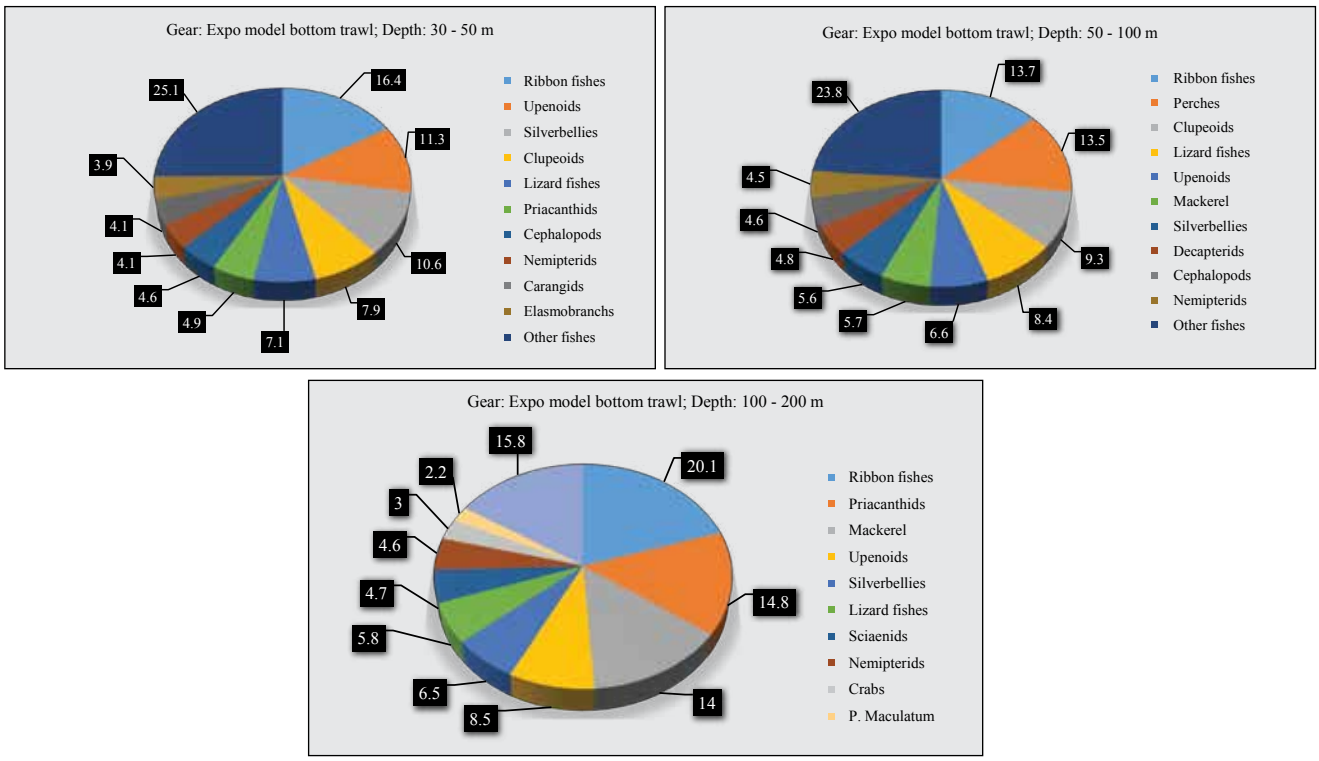
| Species/Groups | Gear/ Depth zone (m) | | |
|---|---|---|---|
| | Expo model bottom trawl | | |
| | 30-50 | 50-100 | 100-200 |
| Elasmobranchs | 3.9 | 3.6 | 1.4 |
| Eels | - | 0.1 | - |
| Cat fishes | 3.0 | 2.9 | 0.1 |
| Clupeoids | 7.9 | 9.3 | 2.0 |
| Lizard fishes | 7.1 | 8.4 | 5.8 |
| Priacanthids | 4.9 | 4.2 | 14.8 |
| Nemipterids | 4.1 | 4.5 | 4.6 |
| Perches | 2.8 | 13.5 | 0.1 |
| Upenoids | 11.3 | 6.6 | 8.5 |
| Sciaenids | 3.6 | 2.1 | 4.7 |
| Polynemids | 0.1 | 0.5 | - |
| Silverbellies | 10.6 | 5.6 | 6.5 |
| Flat fishes | 0.4 | 0.4 | 0.6 |

| Species/Groups | Gear/ Depth zone (m) | | |
|---|---|---|---|
| | Expo model bottom trawl | | |
| | 30-50 | 50-100 | 100-200 |
| Indian drift fish | 0.7 | 0.7 | 0.8 |
| Barracuda | 2.1 | 1.7 | 1.7 |
| Pomfret | 0.8 | 0.8 | 0.3 |
| Carangids | 4.1 | 2.2 | 0.9 |
| Horse mackerel | 1.0 | 0.4 | 0.4 |
| Decapterids | 3.4 | 4.8 | - |
| Chorinemus | 0.2 | 0.1 | 0.7 |
| Ribbon fishes | 16.4 | 13.7 | 20.1 |
| Mackerel | 2.3 | 5.7 | 14.0 |
| Seer fishes | 0.9 | 0.2 | 0.3 |
| Gerrids | 0.4 | 0.7 | 0.4 |
| Moon fishes | 0.2 | - | - |
| Crabs | 1.2 | 0.9 | 3.0 |

| Species/Groups | Gear/ Depth zone (m) | | |
|---|---|---|---|
| | Expo model bottom trawl | | |
| | 30-50 | 50-100 | 100-200 |
| Cephalopods | 4.6 | 4.6 | 1.6 |
| Deep sea shrimps | 0.2 | 0.3 | 1.3 |
| *P. Maculatum* | 0.6 | 0.3 | 2.2 |

| Species/Groups | Gear/ Depth zone (m) | | |
|---|---|---|---|
| | Expo model bottom trawl | | |
| | 30-50 | 50-100 | 100-200 |
| King fishes | - | 0.01 | - |
| Others | 1.2 | 1.2 | 3.2 |

**Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Matsya Darshini***




## C. Salient observations

- The highest catch rate of 81.8 kg/hr was recorded in the depth zone of 50-100 m in the Lat 17 °N followed by the catch rate of 79.0 kg/hr in the same depth zone in the Lat 19 °N by expo-model bottom trawl.
- In 30-50 m depth zone, Ribbon fishes (16.4 %), upenoids (11.3 %), silverbellies (10.6 %) and clupeoids (7.9 %) were the dominant species. Whereas ribbon fishes (13.7 %), perches (13.5 %), clupeoids (9.3 %) and lizard fishes (8.4 %) were the major species occurred in 50-100 m depth zone.
- Ribbon fishes (20.1 %) was the dominant species followed by priacanthids (14.8 %) and mackerels (14 %) in the depth zone of 100-200 m.
- During the month of November 2019, Parasitic isopod *Nerocela exocoeti* and *N. phaeopleura* was recorded in the host *Siganus canaliculatus*. Parasitic infestation in the host *Priacanthus hamrur* species was also noticed during the month and the parasitic isopod was *Nerocila serra.*
- During the month of December 2019, rare occurrence of deep sea spider crab *Encephaloides armstrongi* reported from North East coast of India.

### D. Biological studies

Total of 6640 specimens were examined for the length frequency distribution and 6301 specimens were investigated for detailed biological studies of 26 species.

### E. Biomass estimation

Area : Lat. 16°N –21ºN

(in tonnes)

| Species/Group | Depth zone (m) | | |
|---|---|---|---|
| | 30-50 | 50-100 | 100-200 |
| Elasmobranchs | 386 | 796 | 159 |
| Eel | 3 | 21 | - |
| Cat fishes | 590 | 1029 | 16 |
| Clupeoids | 740 | 1902 | 223 |
| Lizard fishes | 676 | 1823 | 637 |
| Priacanthids | 557 | 1277 | 1639 |
| Nemipterids | 360 | 1086 | 509 |
| Perches | 306 | 2687 | 16 |
| Upenoids | 1394 | 1757 | 939 |
| Polynemids | 7 | 89 | - |
| Sciaenids | 362 | 555 | 525 |
| Silverbellies | 1152 | 1702 | 716 |
| Flat fishes | 77 | 112 | 64 |
| Indian drift fish | 68 | 150 | 80 |
| Barracuda | 325 | 489 | 191 |
| Pomfret | 80 | 167 | 32 |

(in tonnes)

| Species/Group | Depth zone (m) | | |
|---|---|---|---|
| | 30-50 | 50-100 | 100-200 |
| Carangids | 431 | 436 | 95 |
| Horse mackerel | 142 | 95 | 48 |
| Decapterids | 587 | 1001 | - |
| *Chorinemus* | 15 | 11 | 80 |
| Ribbon fishes | 1475 | 2888 | 2228 |
| Mackerel | 247 | 1232 | 1544 |
| Seer fishes | 80 | 49 | 111 |
| Gerrids | 79 | 144 | 48 |
| Deep sea fishes | 10 | 13 | - |
| Moon fishes | 18 | 2 | - |
| Crabs | 113 | 193 | 334 |
| Cephalopods | 491 | 1097 | 175 |
| Deep sea shrimps | 201 | 136 | 143 |
| *P. Maculatum* | 88 | 76 | 239 |
| Others | 138 | 421 | 350 |
| King fishes | - | 4 | - |

**Project 7 (B)** **Survey of coastal pelagic fishery resources by midwater trawling along the Upper-East coast between latitude 16°N and 21°N.**

Project components: Pelagic fishery resources survey by midwater trawl along the Upper East Coast between Lat.16°N and 21°N in 30-500 m depth

Gear: ➢ 12.92 X 12.92 fathom midwater trawl

**Vessel** ***MFV Matsya Darshini***

Base: Visakhapatnam

Project Co-ordinator: Shri K. Govindaraj, Sr. Fisheries Scientist

Project Leader: Shri N. Jagannadh, Jr. Fisheries Scientist

## Results

### A. Catch per unit effort (kg/hr)

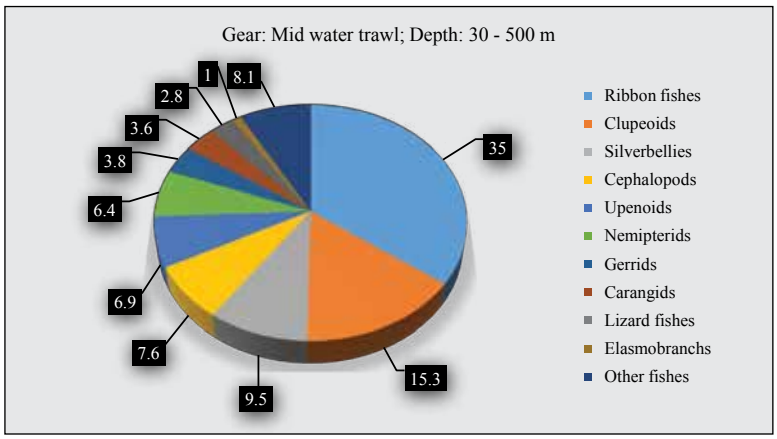
| Latitude (ºN) | Gear/ Depth zone (m) |
|---|---|
| | Midwater trawl |
| | 30-500 |
| 16 | 2.3 |
| 17 | 10.5 |
| 18 | 12.8 |
| 19 | 22.6 |
| 20 | 8.3 |
| 21 | - |

### B. Catch Composition (%)

| Species/Groups | Gear/ Depth zone (m) |
|---|---|
| | Midwater Trawl |
| | 30-500 |
| Elasmobranchs | 1.0 |
| Cat fishes | 0.3 |
| Clupeoids | 15.3 |
| Lizard fishes | 2.8 |
| Priacanthids | 0.5 |
| Nemipterids | 6.4 |
| Perches | 0.2 |
| Upenoids | 6.9 |
| Sciaenids | 0.2 |
| Silverbellies | 9.5 |
| Flat fishes | 0.5 |

| Species/Groups | Gear/ Depth zone (m) |
|---|---|
| | Midwater Trawl |
| | 30-500 |
| Pomfret | 0.4 |
| Carangids | 3.6 |
| Horse mackerel | 0.4 |
| Decapterids | 0.6 |
| Ribbon fishes | 35.0 |
| Mackerel | 1.0 |
| Seer fishes | 0.6 |
| Gerrids | 3.8 |
| Moon fishes | 0.9 |
| Cephalopods | 7.6 |
| Others | 2.5 |

### Gear-wise and depth-wise catch composition (in %) of top ten species for *MFV Matsya Darshini*

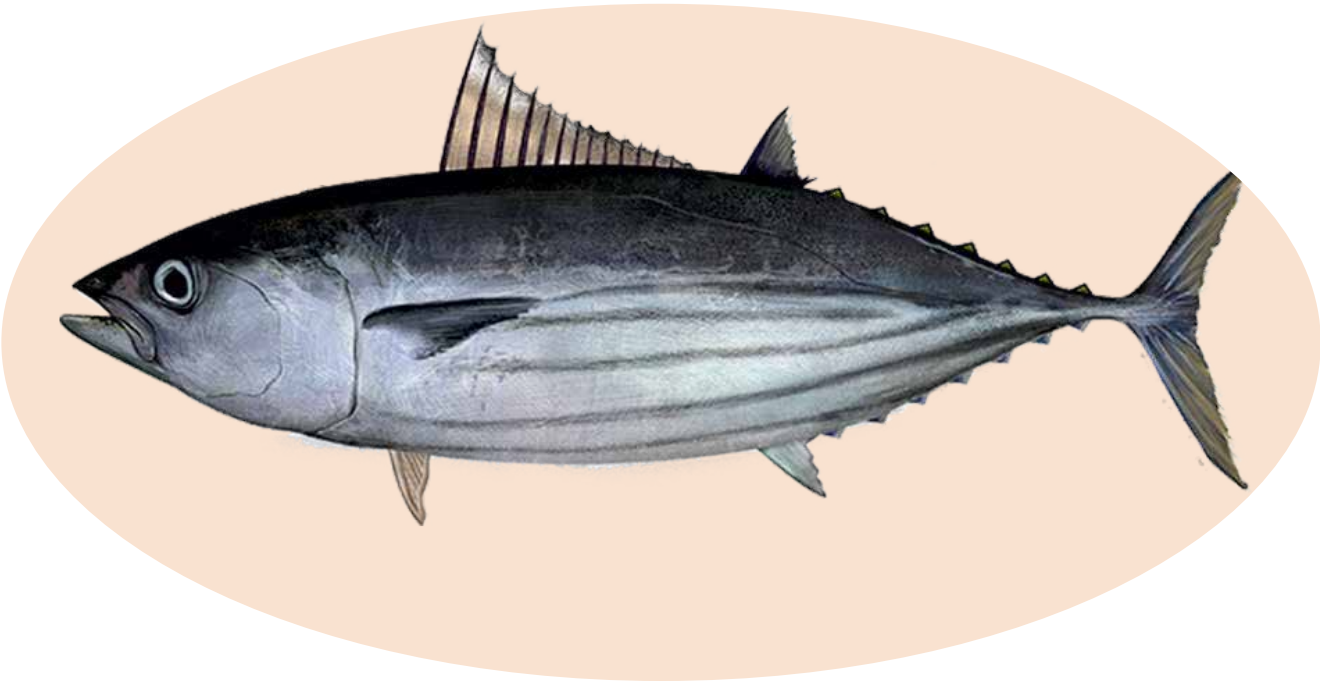


### C. Salient observations

- The highest catch rate of 22.6 kg/hr was recorded in the Lat 19 °N followed by the catch rate of 12.8 kg/hr in the Lat 18 °N by midwater trawl.
- In the surveyed depth zone, Ribbon fishes (35.0 %), clupeoids (15.3 %), silverbellies (9.5 %) and Cephalopods (7.6 %) were the dominant species.

### D. Biological studies

Total of 250 specimens were examined for the length frequency distribution and 200 specimens were investigated for detailed biological studies of 3 species.



## 4.2 OCEANIC TUNA RESOURCES SURVEY

**Project 8** **Tuna resources survey using monofilament longlining along the West-coast of India between latitude 4° and 23°N.**

Project component

1. Estimation of abundance indices of oceanic tuna and allied resources.
2. Identifying spatio-temporal distribution pattern of the tuna and allied resources.
3. Study of biological parameters in respect of important species.
4. Stock assessment of important resources.
5. Study of the oceanographic parameters.
6. Imparting training in fishing techniques and demonstrations of modern equipment on board to the fishermen, fishing industry representatives and entrepreneurs.

Gear — Monofilament long line with 7 hooks/ basket

**Vessel** — ***MFV Matsya Vrushti***

Base — Mumbai

Project Co-ordinator — Shri B. Balanayak, Service Engineer (Mech.) (01.04.2019 to 03.10.2019)

Shri D. K. Gulati, Zonal Director (03.10.2019 to 31.03.2020)

Project Leader — Shri Ashok S. Kadam, Fisheries Scientist

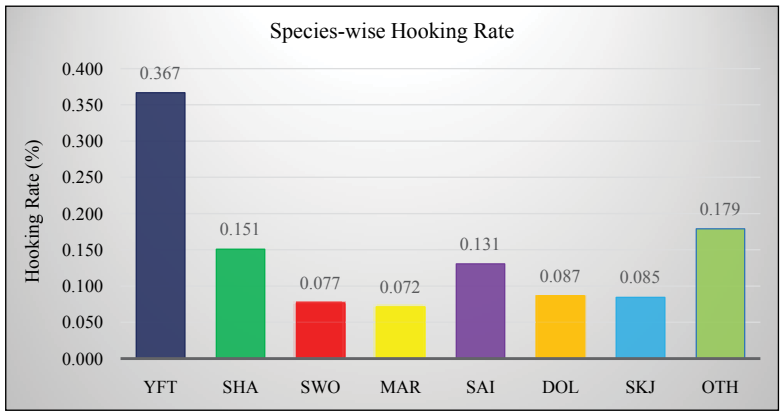
**Results**

**A. Hooking rate (%)**

| Month | Hooks Operated | YFT | SKJ | SHA | SWO | MAR | SAI | DOL | OTH | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| April 2019 | 4368 | 0.62 | - | 0.16 | 0.068 | 0.05 | 0.37 | - | 0.05 | 1.30 |
| May 2019 | Due to delay in sanction for the fresh water from headquarters and HSD bill clearance from PAO | | | | | | | | | |
| June 2019 | Preparations for LSA/FFA survey | | | | | | | | | |
| July 2019 | | | | | | | | | | |
| August 2019 | Payment of wages for the months of August & September to the casual hands of the vessels could not be materialised due to returning of wages bills by PAO. | | | | | | | | | |
| September 2019 | | | | | | | | | | |
| October 2019 | For want of payment of wages to casual staff and bunkering of diesel & fresh water. | | | | | | | | | |
| November 2019 | 5390 | 0.27 | 0.22 | 0.01 | 0.09 | 0.13 | 0.04 | 0.17 | 0.18 | 1.13 |
| December 2019 | 4256 | 0.23 | - | 0.32 | 0.07 | 0.02 | - | 0.07 | 0.31 | 1.03 |
| January 2020 | Dry-docking repairs. | | | | | | | | | |
| February 2020 | | | | | | | | | | |
| March 2020 | Docked on 18.03.2020. Repairs held up due to lockdown. | | | | | | | | | |

YFT - Yellow Fin tuna, SKJ - Skipjack tuna, MAR - Marlin, SWO - Sword fish, SAI - Sail fish, SHA - Shark, DOL - Dolphin fish, OTH - Other fishes

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




## B. Salient observations

- An aggregate hooking rate of 1.16% was recorded for all fishes, wherein, Yellow fin tuna hooking rate was 0.37% during the year.
- The highest hooking rate of 0.62% for the Yellow fin tuna was recorded during the month of April 2019 followed by 0.27% in November 2019.
- During the year, the catch was mainly comprised of Yellow fin tuna (32.09%), other fishes (15.43%), shark (13.58%), sail fish (11.11%), skipjack tuna & dolphin fish (7.40% each), sword fish (6.79%) and marlin (6.17%).

## C. Biological studies

A total of 118 specimens belonging to 13 species were examined for length frequency and length-weight.

**Project 9** **Survey of oceanic tuna and allied resources using regular longline in Indian EEZ along Central-West coast including Lakshadweep between latitude 8°N -18°N.**

Project components: Survey of oceanic tuna and allied resources by longlining in the Indian EEZ along Central West coast including Lakshadweep

Gear: Multifilament tuna long line with 5 hooks per basket

**Vessel**: ***MFV Yellow Fin***

Base: Mormugao

Project Co-ordinator & Project Leader: Dr. H. D. Pradeep, Fisheries Scientist

## Results

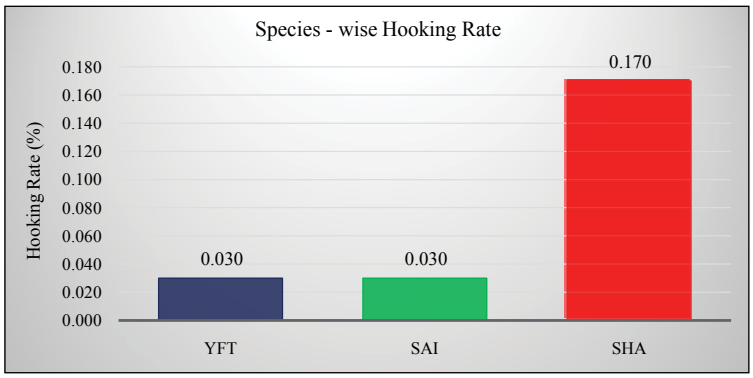
### A. Hooking rate (%)

| Months | Hooks operated | Hooking rate (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | YFT | SKJ | SAI | MAR | SWO | SHA | Others | Total |
| April 2019 | 2800 | 0.03 | - | 0.03 | - | - | 0.17 | - | 0.25 |
| May 2019 | Vessel was under repairs to Aux. Engine No.1 and cooler. | | | | | | | | |
| June 2019 | | | | | | | | | |
| July 2019 | Vessel was under repairs to Aux. Engine No.1. | | | | | | | | |

| Months | Hooks operated | Hooking rate (%) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | YFT | SKJ | SAI | MAR | SWO | SHA | Others | Total |
| August 2019 | Overhauling to Aux. Engine no.1 and no. 2 and awaiting for FIP & SWP gear. | | | | | | | | |
| September 2019 | | | | | | | | | |
| October 2019 | | | | | | | | | |
| November 2019 | Repairs to Aux. Engine no.1 and waiting for FIP & SWP gear. | | | | | | | | |
| December 2019 | Major overhauling to Aux. Engine no.2 and waiting for early dry-docking repairs. | | | | | | | | |
| January 2020 | | | | | | | | | |
| February 2020 | Vessel was shifted to GSL, Goa on 19.02.2020 for early dry-docking repairs. | | | | | | | | |
| March 2020 | Vessel at GSL, Goa dry-docking repairs was in progress. | | | | | | | | |

YFT - Yellow Fin tuna, SKJ - Skipjack tuna, MAR - Marlin, SWO - Sword fish, SAI - Sail fish, SHA - Shark, OTH - Other fishes

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




## B. Salient observations

- Highest aggregate hooking rate of (0.25%) was recorded during April 2019.
- The species Yellow fin tuna, sail fish and sharks were the main component of the catch during the year.

## C. Biological Studies

Total of 7 specimens belonging to 4 species were carried out for the length frequency and biological studies during the year.

**Project 10** **Tuna resources survey using monofilament longlining in the Bay of Bengal 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 — Dr. J. Jeyachandra Dhas, Jr. Fisheries Scientist

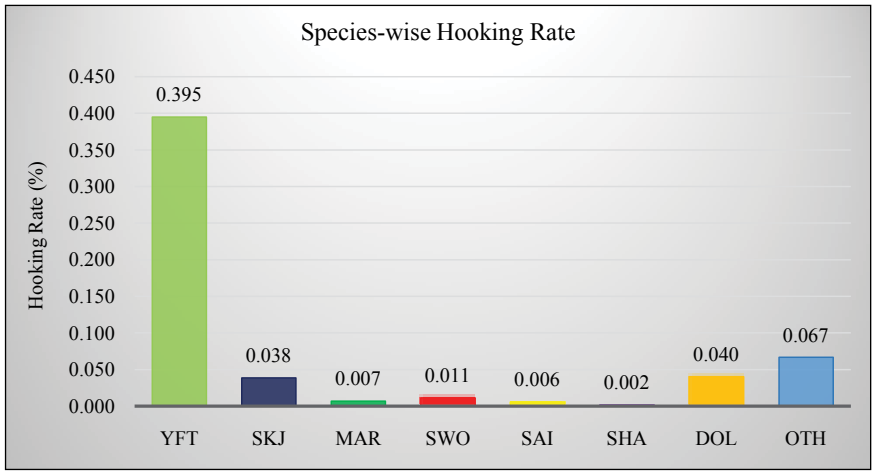
## Results

### A. Hooking rate (%)

| Months | Hooks Operated | Hooking rate (%) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | YFT | SKJ | MAR | SWO | SAI | SHA | DOL | OTH | Total |
| April 2019 | 6930 | 0.09 | - | - | - | - | - | - | - | 0.09 |
| May 2019 | 8820 | 0.39 | - | | 0.01 | | | 0.01 | 0.01 | 0.42 |
| June 2019 | 6300 | 0.05 | 0.03 | - | 0.03 | - | - | - | 0.02 | 0.13 |
| July 2019 | 8820 | 0.40 | 0.02 | - | 0.02 | - | 0.01 | 0.04 | 0.23 | 0.72 |
| August 2019 | 7560 | 0.07 | 0.04 | - | - | - | - | - | 0.01 | 0.12 |
| September 2019 | 7560 | 0.01 | 0.02 | 0.02 | 0.01 | 0.02 | - | 0.14 | 0.02 | 0.24 |
| October 2019 | 8820 | 0.74 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.03 | 0.03 | 0.87 |
| November 2019 | 9450 | 1.35 | 0.01 | 0.01 | 0.01 | - | - | 0.01 | 0.01 | 1.4 |
| December 2019 | 7560 | 0.67 | 0.15 | 0.02 | 0.05 | 0.03 | - | 0.08 | 0.15 | 1.15 |
| January 2020 | 8820 | 0.31 | 0.12 | 0.01 | - | 0.01 | - | 0.07 | 0.16 | 0.68 |
| February 2020 | 9450 | 0.21 | 0.05 | - | - | | | 0.05 | 0.12 | 0.43 |
| March 2020 | 7560 | 0.13 | - | - | - | - | - | 0.05 | - | 0.18 |

YFT - Yellow Fin tuna, SKJ - Skipjack tuna, MAR - Marlin, SWO - Sword fish, SAI - Sail fish, SHA - Shark, DOL - Dolphin fish, OTH - Other fishes

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




### B. Salient observation

- The highest aggregate hooking rate of 1.40%, 1.15% and 0.87% were recorded during November 2019, December 2019 and October 2019 respectively.
- The highest hooking rate of 1.35% and 0.74% was recorded for Yellowfin tuna during November 2019 and October 2019 respectively.

### C. Biological studies

During the year biological studies such as Length frequency, Length-weight, Sex, Maturity and Food & Feeding habits were carried out for 455 specimen belonging to 50 Species viz. *Thunnus albacares, Kastuwonus pelamis, Xiphias gladius, Istiophorus platypterus, Makaira indica, Makaira mazara, Acanthocybium solandri, Alepisaurus ferox, Coryphaena hippurus, Cephalopholis sonnerti, Charcharhinus leucas, Makaira nigricans, Sphyraena jello, Epinephelus diacanthus* and *Rachycentron canadum*.

**Project 11** **Tuna resources survey in Indian EEZ around Andaman and Nicobar Islands between latitude 5°N and 15°N.**

Project components

1. Survey of oceanic tunas and allied resources by using regular longlining in Andaman and Nicobar waters.
2. Survey of Sword fish by using drift longline with light sticks in Andaman and Nicobar waters.
3. Survey of Oil shark resources by using bottom set longline gear in Andaman and Nicobar waters.
4. Survey of Perch resources by using bottom set vertical longline in Andaman and Nicobar waters.

Gear

- Multifilament tuna long line with five hooks per basket
- Modified deep set long line with 7/9 hooks per basket for Oil shark resources
- 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 swordfish

**Vessel** ***MFV Blue Marlin***

Base Port Blair

**Project Co-ordinator & Project Leader** Dr. Sijo P. Varghese, Sr. Fisheries Scientist

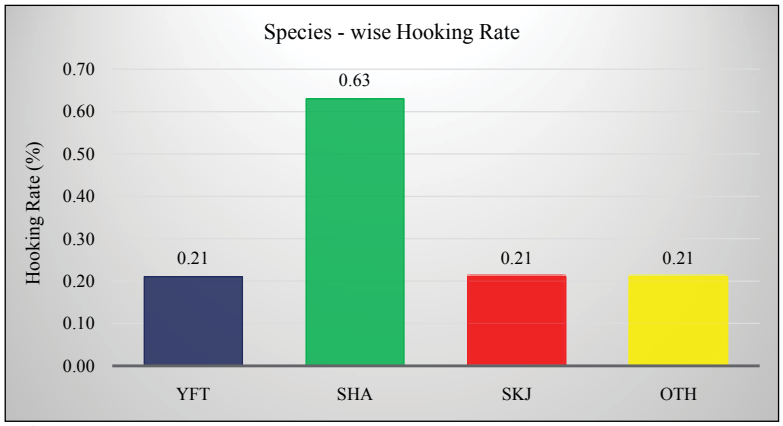
## Results

### A. Modified Bottom set line for Oil Sharks - Hooking rate (%)

| Month | Hooks operated | Hooking rate (%) | | | | |
|---|---|---|---|---|---|---|
| | | YFT | SHA | SKJ | OTH | Total |
| June 2019 | 475 | 0.21 | 0.63 | 0.21 | 0.21 | 1.26 |

YFT - Yellow fin tuna, SHA – Shark, SKJ - Skipjack tuna, OTH - Other fishes

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



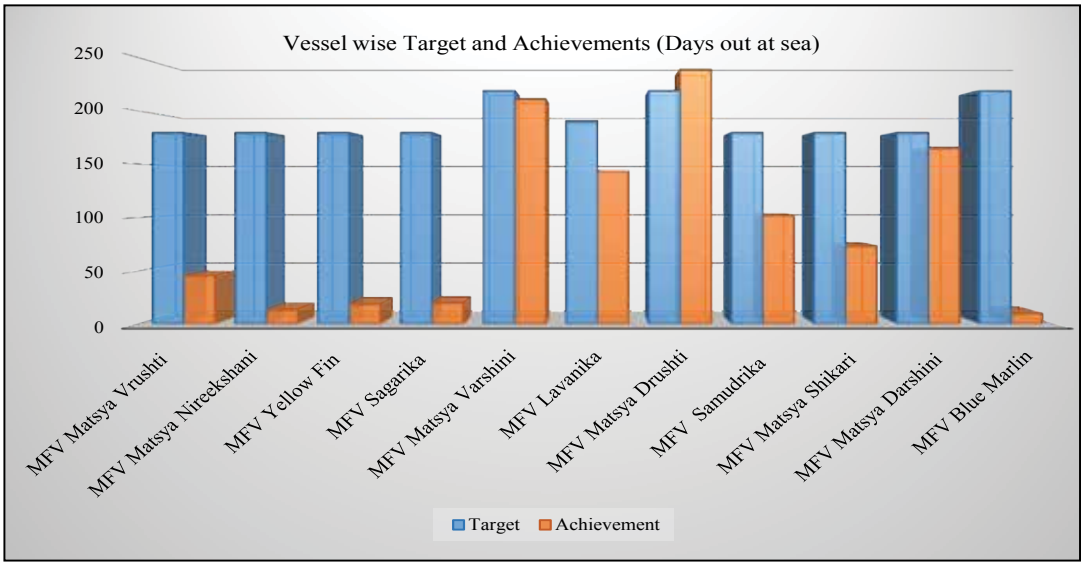

### B. Salient observation

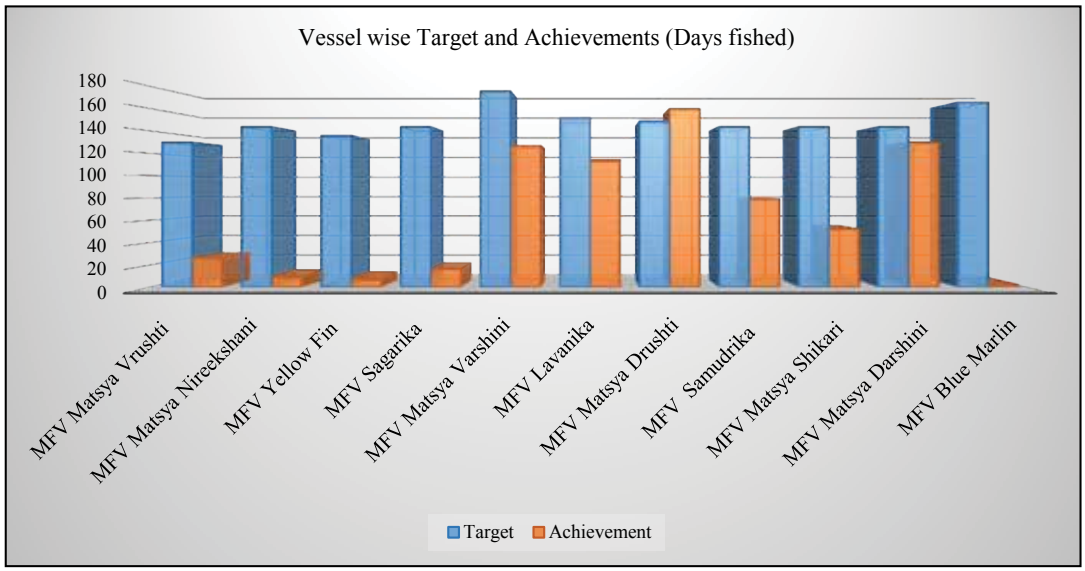
- During the only month (June 2019) of operation, aggregate hooking rate recorded was 1.26% for all the fishes. The catch was dominated by sharks (50%) with a hooking rate of 0.63%. The hooking rate for Yellow fin tuna was 0.21%.

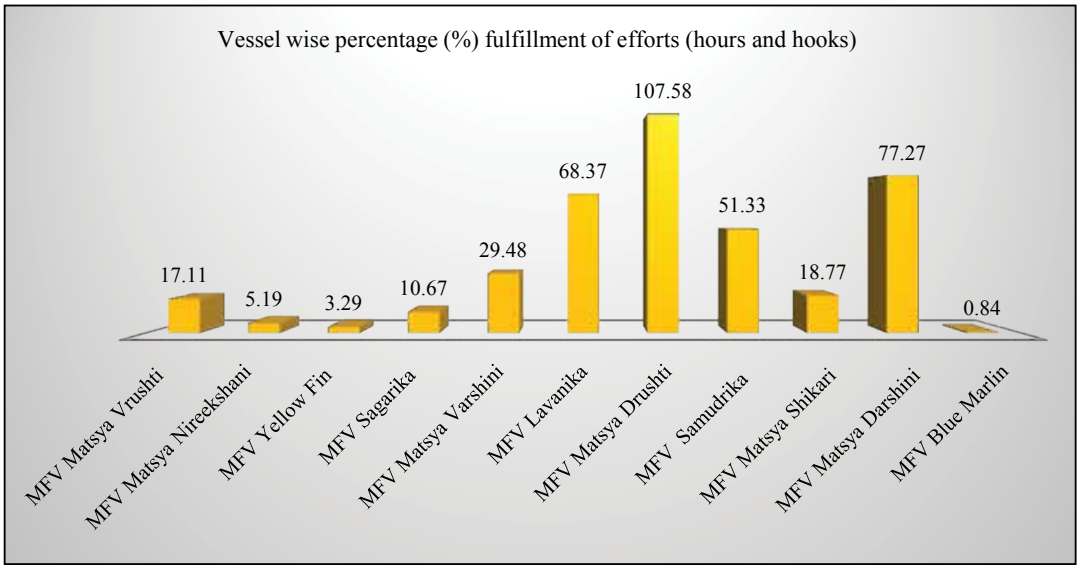
# 5. PHYSICAL TARGET AND ACHIEVEMENTS

Physical targets and achievements in terms of voyages, days out at sea, fishing days and sampling effort of the survey vessels during 2019-20 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 | MFV Matsya Vrushti @ | 9 | 180 | 130 | 81900 | 3 | 45 | 26 | 14014 |
| | MFV Matsya Nireekshani * | 9 | 180 | 144 | 675 | 1 | 13 | 9 | 35 |
| Mormugao | MFV Yellow Fin @ | 9 | 180 | 136 | 85000 | 2 | 18 | 7 | 2800 |
| | MFV Sagarika * | 9 | 180 | 144 | 675 | 1 | 19 | 16 | 72 |
| Cochin | MFV Matsya Varshini * % | 11 | 220 | 176 | 825 | 12 | 212 | 127 | 243.22 2076 |
| | MFV Lavanika * | 19 | 191 | 152 | 717 | 16 | 144 | 114 | 490.18 |
| Chennai | MFV Matsya Drushti @ & | 11 | 220 | 149 | 83790 9600 | 12 | 240 | 160 | 97650 2820 |
| | MFV Samudrika * | 9 | 180 | 144 | 675 | 6 | 102 | 79 | 346.5 |
| Visakhapatnam | MFV Matsya Shikari * | 9 | 180 | 144 | 675 | 5 | 73 | 52 | 126.7 |
| | MFV Matsya Darshini * ** | 9 | 180 | 144 | 525 84 | 10 | 166 | 130 | 377.1 93.5 |
| Port Blair | MFV Blue Marlin @ & $ # | 11 | 220 | 166 | 37500 18750 28750 18750 | 1 | 9 | 2 | - 475 - - |
| Total | | 115 | 2111 | 1629 | | 69 | 1041 | 722 | |
| *:Bottom trawling | | | | | 4767 | | | | 1690.7 |
| **:Mid water trawling | | | | | 84 | | | | 93.5 |
| @: Tuna longline (Hooks) | | | | | 288190 | | | | 114464 |
| &: Bottom set vertical longline (Hooks) | | | | | 28350 | | | | 3295 |
| $:Bottom set longline (Hooks) | | | | | 28750 | | | | - |
| #: Drift longline with light stick (Hooks) | | | | | 18750 | | | | - |
| %: HL+VLL+BSPLL+BSVLL (Hooks for Varshini) | | | | | - | | | | 2076 |


Vessel wise Target and Achievements (Days out at sea)
250
200
150
100
50
0
MFV Matsya Vrushti
MFV Matsya Nireekshani
MFV Yellow Fin
MFV Sagarika
MFV Matsya Varshini
MFV Lavanika
MFV Matsya Drushti
MFV Samudrika
MFV Matsya Shikari
MFV Matsya Darshini
MFV Blue Marlin
Target
Achievement

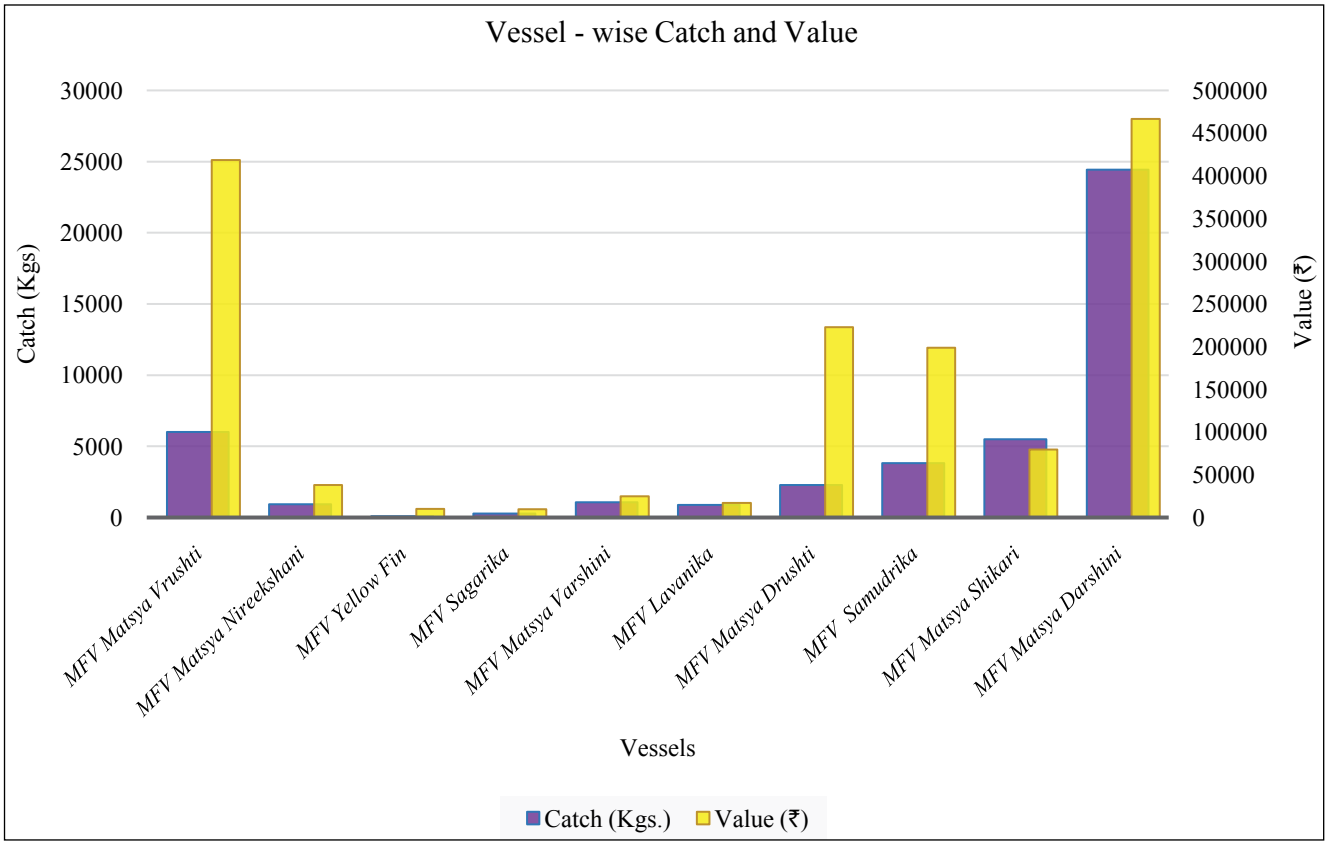

Vessel wise Target and Achievements (Days fished)
180
160
140
120
100
80
60
40
20
0
MFV Matsya Vrushti
MFV Matsya Nireekshani
MFV Yellow Fin
MFV Sagarika
MFV Matsya Varshini
MFV Lavanika
MFV Matsya Drushti
MFV Samudrika
MFV Matsya Shikari
MFV Matsya Darshini
MFV Blue Marlin
Target
Achievement


Vessel wise percentage (%) fulfillment of efforts (hours and hooks)
17.11
5.19
3.29
10.67
29.48
68.37
107.58
51.33
18.77
77.27
0.84
MFV Matsya Vrushti
MFV Matsya Nireekshani
MFV Yellow Fin
MFV Sagarika
MFV Matsya Varshini
MFV Lavanika
MFV Matsya Drushti
MFV Samudrika
MFV Matsya Shikari
MFV Matsya Darshini
MFV Blue Marlin

# 6. VESSEL-WISE CATCH AND VALUE

Catch and values registered by the FSI survey vessels during 2019-20

| Base | Vessel | Catch (Kgs.) | Value (in ₹) |
|---|---|---|---|
| Mumbai | *MFV Matsya Vrushti* | 6012 | 418469 |
| | *MFV Matsya Nireekshani* | 934 | 37880 |
| Mormugao | *MFV Yellow Fin* | 83 | 10179 |
| | *MFV Sagarika* | 289 | 9660 |
| Cochin | *MFV Matsya Varshini* | 1073 | 24748 |
| | *MFV Lavanika* | 896 | 17178 |
| Chennai | *MFV Matsya Drushti* | 2281 | 222904 |
| | *MFV Samudrika* | 3812 | 198685 |
| Visakhapatnam | *MFV Matsya Shikari* | 5495 | 79656 |
| | *MFV Matsya Darshini* | 24440 | 466763 |
| Port Blair | *MFV Blue Marlin* | - | - |
| **Total** | | **45315** | **1486122** |



## 7. SCIENTIST PARTICIPATION IN SURVEY CRUISES

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

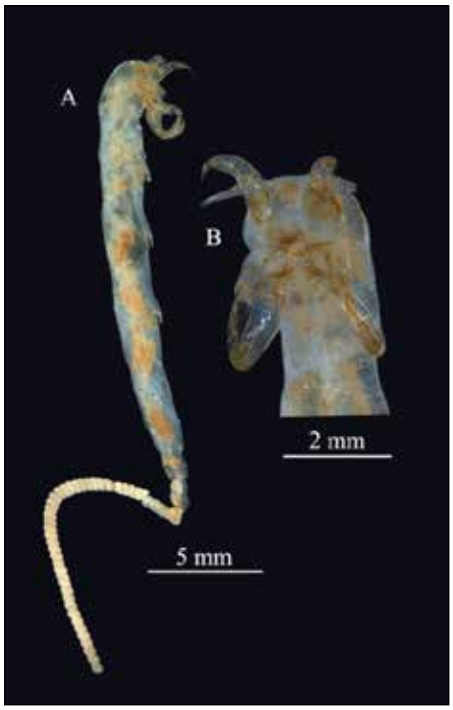
| Vessel | Name and Designation of Scientist participant | No. of cruises | Days out at sea |
|---|---|---|---|
| *MFV Matsya Vrushti* | Shri Jacob Thomas, Jr. Fisheries Scientist | 1 | 16 |
| | Shri Swapnil Shirke, Sr. Scientific Assistant | 2 | 29 |
| *MFV Matsya Nireekshani* | Shri A. S. Kadam, Fisheries Scientist | 1 | 13 |
| *MFV Yellow fin* | Shri Raju S. Nagpure, Sr. Scientific Assistant | 1 | 3 |
| | Shri Pratyush Das, Jr. Fishing Gear Technologist | 1 | 15 |
| *MFV Sagarika* | No Scientist participant | 1 | 19 |
| *MFV Matsya Varshini* | Dr. S. Ramachandran Sr. Fisheries scientist | 1 | 13 |
| | Shri N. Unnikrishnan, Jr. Fisheries Scientist | 4 | 71 |
| | Shri A. E. Ayoob, Jr. Fishing Gear Technologist | 5 | 92 |
| | Shri Jacob Thomas, Jr. Fisheries Scientist | 2 | 37 |
| *MFV Matsya Drushti* | Dr. J. Jeychandra Dhas, Jr. Fisheries Scientist | 3 | 60 |
| | Dr. A. John Chembian, Jr. Fisheries Scientist | 4 | 80 |
| | Shri Y. Tharumar, Sr. Scientific Assistant | 1 | 20 |
| | Shri A. Siva, Sr. Scientific Assistant | 1 | 20 |
| | Shri Rahulkumar B. Tailor, Sr. Scientific Assistant | 1 | 20 |
| | Shri Nashad M, Sr. Scientific Assistant | 1 | 20 |
| | Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant | 1 | 20 |
| *MFV Samudrika* | Dr. J. Jeychandra Dhas, Jr. Fisheries Scientist | 1 | 10 |
| | Shri Y. Tharumar, Sr. Scientific Assistant | 2 | 35 |
| | Dr. Kiran S. Mali, Research Associate | 1 | 17 |
| | Shri V. Murugan, Sr. Research Fellow | 3 | 41 |
| *MFV Matsya Shikari* | Shri Jacob Thomas, Jr. Fisheries Scientist | 1 | 17 |
| | Dr. S. K. Pattanayak, Senior Scientific Assistant | 2 | 22 |
| | Dr. K. Silambarasan, Senior Scientific Assistant | 2 | 34 |
| *MFV Matsya Darshini* | Dr. Annada Bhusan Kar, Fisheries Scientist | 2 | 22 |
| | Shri G. V. A. Prasad, Jr. Fisheries Scientist | 5 | 72 |
| | Dr. S. K. Pattanayak, Senior Scientific Assistant | 1 | 20 |
| | Dr. K. Silambarasan, Senior Scientific Assistant | 3 | 52 |
| *MFV Blue Marlin* | Shri Nashad M, Sr. Scientific Assistant | 1 | 9 |

# 8. RESEARCH AND SURVEY ACTIVITIES

## 8.1 Highlights of the Surveys/ Research

### 8.1.1. Rediscovery of *Bariaka alopiae* Cressey, 1966 (Copepoda, Siphonostomatoida) from the Indian Ocean with new host and geographic record

In and around Andaman & Nicobar waters while conducting surveys by MFV *Blue Marlin,* a copepod parasite, *Bariaka alopiae* Wilson, 1932 **(**Eudactylinidae) infested on thresher sharks caught from the Indian Exclusive Economic Zone off Andaman and Nicobar archipelago, eastern Indian Ocean. Adult females of *B. alopiae* were collected from the gill filaments of two host species, *Alopias pelagicus* Nakamura and *A. superciliosus* Lowe. They were attached on the gill filaments of the hosts by penetrating the secondary lamellae using their clawed antennae and maxillipeds. The species *B. alopiae* can be easily distinguished from other species within the genus by the following characteristic features: cylindrical body devoid of spines, eighteen segmented antennules and four segmented abdomen. In the Indian Ocean, this parasite was known only from its original description 51 years ago, based on materials from western Indian Ocean off Madagascar. *B. alopiae* was recorded with a prevalence of 20% on *A. pelagicus* and 50% on *A. superciliosus*. All the females collected were ovigerous, carrying 80-100 eggs per ovigerous females.



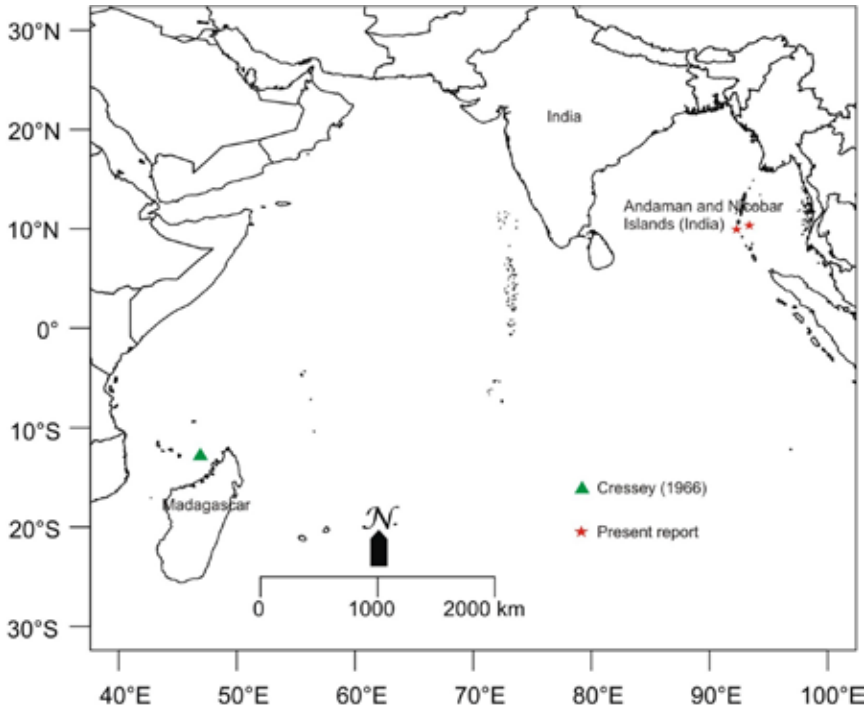




*Fig. 1. A–B, Micrographs of Bariaka alopiae adult female. A, Lateral view and B, Head ventral*
*Fig. 2 Map showing reported distribution locations of B. alopiae in the Indian Ocean*

### 8.1.2. Novel report of three parasites of wahoo, *Acanthocybium solandri* (Cuvier, 1832), from Andaman and Nicobar Islands

The wahoo, *Acanthocybium solandri* (Cuvier, 1832), a large pelagic predatory fish in the family Scombridae, is a widely distributed species occurring in all tropical and subtropical waters of the world (Froese and Pauly, 2019). In the Andaman and Nicobar archipelago, the wahoo is one of the most highly prized table fish and is sold as "seer fish" along with streaked Spanish mackerel *Scomberomorus lineolatus* (Cuvier, 1829) and narrow-barred Spanish mackerel *S. commerson* (Lacepède, 1800). The parasites infested on wahoo from Andaman and Nicobar Islands was recorded two parasitic copepods, *Lernaeenicus seeri* Kirtisinghe, 1934 (family Pennellidae Burmeister,

1835) and *Brachiella thynni* Cuvier, 1830 (family Lernaeopodidae Milne Edwards, 1840) and a digenean parasite *Hirudinella ventricosa* (Pallas, 1774) Baird, 1853.

Total of 119 specimens of *L. seeri* Kirtisinghe, 1934 (Fig.1C) were collected from the body surface of *A. solandri*. All the parasites were found deeply embedded in the host body by making a small hole in the epidermis, and penetrated in to the musculature leaving their trunk, abdomen and egg sacs hung outside. Total lengths of the parasite specimen were in the range 9.3 to 11.5cm. Cephalothorax bears two pairs of characteristic horn like structures (Fig. 1F).

A total number of 346 female specimens (Fig. 1B) of *B. thynni* were collected from 215 wahoo. Total lengths of the parasites were in the range 31.4mm to34.6mm. Colour of the specimens in fresh condition is off -white for the body, with pinkish, elongated egg sacs. The cephalothorax is elongated (18.02 mm), cylindrical in shape and is longer than trunk (7.54mm). Two pairs of unequal processes, almost cylindrical in shape are present on the base of the trunk; dorsal pair longer (14.84mm) than the ventral pair (12.09mm). Abdomen and caudal rami were absent. Two elongated egg sacs, filled with hexagonal eggs of 0.2mm size were present on all the specimens caught. These egg sacs (Fig. 1D) are slightly elongated than the dorsal processes.

A total of 85 specimens of *H. ventricosa* from 43 wahoo caught from Andaman and Nicobar waters. Total lengths of parasites were in the range of 2.2 to 4.6cm in fresh condition (Fig. 1E). Colour of the specimen varied between slight pinkish to brown. *H. ventricosa* can be easily distinguished from other digenean by the characteristic fleshy body surface with transverse folds and wrinkles. *H. ventricosa* possess two suckers close to each other at the anterior end.

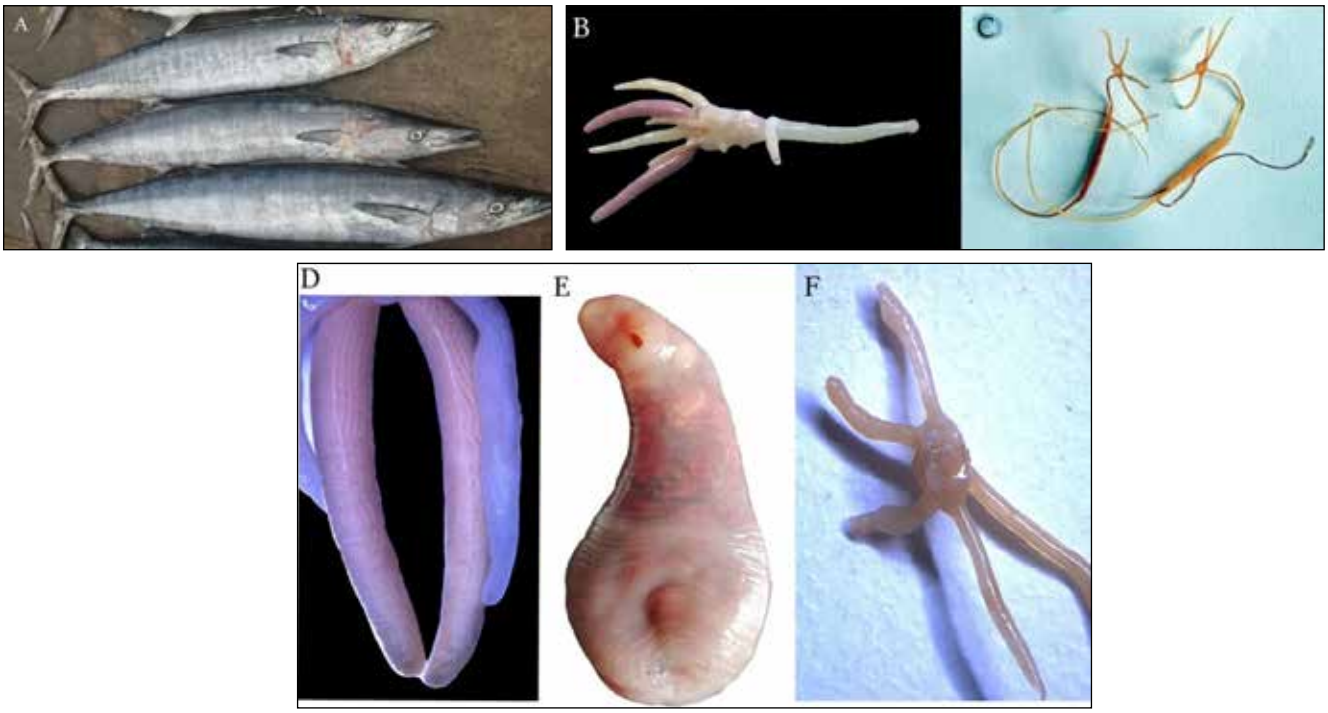



*Fig. 1A, Host Acanthocybium solandri (Cuvier, 1832); 1B, Brachiella thynni Cuvier, 1830; 1C, Lernaeenicus seeri Kirtisinghe, 1934; 1D, B. thynni egg sacs; 1E, Hirudinella ventricosa (Pallas, 1774) Baird, 1835; 1F, L.seeri head process*

### 8.1.3. Occurrence of Filamentous shrimpgoby *Myersina filifer* (Valenciennes, 1837) from Visakhapatnam coastal waters, Southeast coast of India

The vessel *MFV Matsya Shikari* conducted the exploratory survey, assessment and monitoring of demersal fishery resources by deploying 34m fish trawl during the month of June 2019. During the cruise a single specimen of

*Myersina filifer* (TL-12.2cm) was recorded in the area Lat. 18º 04.92'N/Long. 084º 03.32E at a depth of 52m.The present species is a rarely occurring in Visakhapatnam coastal waters.


### 8.1.4. Captured-induced parturition in white spotted ray *Maculabatis gerrardi* from Visakhapatnam coastal waters.

During the month of August'2019, the vessel *M.F.V. Matsya Shikari* while carrying out exploratory survey, assessment and monitoring along the upper east coast of India, the phenomenon called capture-induced parturition in the Sharpnose stingray species *Maculabatis gerrardi* was noticed. The species was captured in the area Lat. 17°53.05'N / Long. 83°39.04'E by exploring 45.6m Expo-model bottom trawl at a depth of 42m. Parturition of four embryos in the mid developmental stage was observed. A capture-induced parturition phenomenon is either a premature birth or an abortion depending on the gestation extent of embryos and it may be the cause of stress suffered by the fishing gear, which used to induce parturition. It is a global phenomenon among shark and ray species (Adams *et al*., 2017). The parturition affects the stock of elasmobranchs.

*a) Ventral view* *b) Embryos*

### 8.1.5. Abundance of demersal fishery resources off Santhapalli (Andhra Pradesh coast)

The vessel *M.F.V. Matsya Darshini* recorded 864 kg of fish catch in a single haul during August' 2019 in the area Lat. 17° 56.7'N / Long 83° 53.1'E (18 NM southeast of Santhapalli) at a depth of 50-51m while carrying out survey, assessment and monitoring of demersal fishery resources in the area. The gear operated during the voyage was 45.6m Expo model bottom trawl. The catch consisted of diverse taxa and was dominated by *Pomadasys argenteus* (81%), *Netuma thalassina* (9%), *Lutjanus argentimaculatus*, *Epinephelus coioides*, *Lutjanus rivulatus* (2% each).

### 8.1.6. Abundance of Seer fish resources in the Andhra Pradesh coast

In August'2019, the vessel *M.F.V. Matsya Darshini* carried out exploratory survey in the southeast coast of India in the area between Lat.16°N and Lat.21°N and recorded a total of 101 kg of seer fishes consisting of two species i.e. *Scomberomorous commerson* and *Scomberomorous gutattus* at a depth of 40-51m.

In another haul, 80 kg of seer fishes comprising of 30kg of *S. commerson* and 50kg of *S. gutattus* were also recorded in the area Lat. 18° 36.9'N / Long. 84° 30.6'E at a depth of 41m, indicating the abundance of the resources in the region. During the voyage, seerfishes were recorded consistently in almost all the hauls. Biology of the species were carried out by the scientist participant onboard the vessel. The species *S. gutattus* was in the size range of 34.0cm to 58.5cm with a weight range of 250gms and 1500gms and *S. commerson,* the size range was between 39.0cm to 65.0cm with a weight range of 350gms to 1800gms range.

### 8.1.7. Distribution of Marine Mammals in the North east Coast of India

The vessel M.F.V. *Matsya Drushti* (OAL 37.5 m), a monofilament longliner attached with Chennai Zonal Base of FSI while conducting tuna longline survey operation on 17.09.2019in the area Lat. 9°38.11'N/ Long. 087°26.14'E, sighted a Bryde's Whale (*Balanopteraedeni,* Anderson, 1878) in the depth of 2000 mat 1745 hrs. The sighted whale (01 No.) size was about 10 m and around 5 tonnes of weight. The surface-blow dive profile exhalation for the water noticed about 7 times with height of 2 meters. The observation reveals the Cetaceans (Marine Mammals) distribution in the Bay of Bengal.

### 8.1.8. Occurrence of Irrawaddy Dolphin in the West central Bay of Bengal

During the month of September' 2019, the vessel *M.FV. Matsya Drushti* attached to Chennai Base of FSI carried out survey operation for oceanic fishery resources using monofilament tuna longline in the deeper waters of West

Central Bay of Bengal. During hauling time nearly 27 Nos. of Irrawaddy Dolphins *Orcael/a brevirostris were sighted* around the vessel within 25 m approx radius. It was also observed that they were in groups of 3 Nos., 6 Nos., 4 Nos., 2 Nos., 3 Nos., 3 Nos., 4 Nos., and 2 Nos., but not as single. The size of the dolphins ranged between 2 - 3 meters length and 100 - 150 kg weight (approx.). This observation was made at a depth of 2130 m. in Lat. 18°21.10'N/Long 089°29.14'E. As per the IUCN Redlist category (2017), it is listed in EN-Endangered.

### 8.1.9. Parasitic infestation in indo-pacific Sail fish

A sailfish *Istiophorus platypterus* was caught in the area Lat. 18°28.01'N/ Long. 89°.32.11'E at a depth of 2100 m during September' 2019 voyage of *M.F.V. Matsya Drushti*, in the longline survey operation. Total length of the species was 269cm with a weight of 40 kg. While taking morphometric measurements twoepizootic parasites were found on the lateral line and was identified as Goose barnacle, *Conchoderma virgatum*, Spengler, 1789and *Pennella instructa*, Wilson, 1917.

*Conchoderma virgatum,* (3-4 cm) was firmly attached with *Pennella instructa* (12-15cm). There were 3 Nos. of *Pennella instructa* and 2 Nos. of *Conchoderma virgatum*. A severe inflammation was observed on the lateral line tissues of the specimen. On dissection of the affected tissue many cysts were found at the node of the parasitic attachment.

### 8.1.10. Report on abundance of Arabian whip lobster *Puerulus sewelli* from south west coast of India


*M.F.V. Matsya Varshini* had carried out a deeper water exploratory survey in the month of September' 2019 in the area between Lat. 11°23'N/ Long.74°46'E and Lat.11°26'N / Long.74°45'E at a depth of 220 m, abundance of Arabian whip lobster *Puerulus sewelli,* Ramadan,1938was recorded with a maximum CPUE of 37 kg/hr. The total length of collected samples were in the range of 10-21 cm and the sex ratio observed was 1:1.75 (Female:Male).

The fishing grounds of commercially exploitable quantity of Arabian whip lobster (deep sea spiny lobster)*P. sewelli* Ramadan, 1938in India was first reported by the trawlers of the Indo Norwegian Project, Cochin (Joseph, 1972). Subsequently, recent surveys conducted by Fishery Survey of India revealed diminution of abundance of this resource in south-west coast of India, probably due to increased exploitation by bottom trawlers. This resource is exploited between 150 - 450 m depth and the maximum catch rate of 29.18kg/hr (Anrose *et al.,* 2010) was reported from south west coast of India.

### 8.1.11. Note on New record of Nursery ground of *Neoharriotta pinnata* (Schnakenbeck, 1931) from South west coast of India


During the month of September' 2019, the vessel *M.F.V. Matsya Varshini,* carried out survey operation in the area Lat.10°07'N / Long. 75°39'E and Lat.10°04'N / Long. 75°38'E wherein, 47 juvenile specimens of *Neoharriotta pinnata (*Chimaera species) were caught by bottom trawl in the area at a depth of 210 m with a catch rate of 41.6 kg/hr. Biological studies of the species was carried out (Total length between 375 mm - 790 mm and total weight 63g - 550g). The length-weight relationship of juvenile *N. pinnata* was $Wt.= 0.0013.L^{2.9254}$ Sex ratio of the collected specimens was 1:1.1 (Female:Male).

About 17 species of Chimaeras are reported from the Indian Ocean, 9 species from western Indian Ocean (FAO area 51) and 11 species from eastern Indian ocean (FAO area 57). In India, *Neoharriota pinnata* (Fig.1) is the most common and dominant Chimaera species, occurring in both the east and west coasts of India.

The earlier reports of Fishery Survey of India revealed that mature specimens of *N. pinnata* occurred in the same latitude at the depth of 450 to 550m. Present observations indicate that the area between Lat.10°07'N / Long. 75°39'E and Lat.10°04'N / Long. 75°38'E is untrawlable ground as witnessed by damaged trawl net.

### 8.1.12. New Host Record, Rabbit fish *Siganus canaliculatus* for parasites *Nerocila phaeopleura* and *Nerocela exocoeti* and Bulls Eye, *Priacanthus hamrur* for parasite *Nerocila serra*

In November 2019, while carrying out an exploratory survey by the vessel MFV *Matsya Darshini* between Lat. 16°N- 20°N by deploying 46.5 m expo model bottom trawl, the rabbit fish. (*Siganus canaliculatus)* Cuvier , 1829 was noticed in the area Lat. 19° 8.1'N / Long. 84° 55.5'E parasitized by *Nerocila exocoeti* Pillai 1954& *Nerocila*

*phaeoplura* Bleeker 1857. The species *N. phaeopleura* was attached to the caudal fin and caudal peduncle and the species *N. exocoeti* was found attached below the pectoral fin of the fish. The rabbitfish was significantly damaged by both the parasite species. The rabbitfish is found to be the new host record of the isopod parasite *N. phaeopleura* and *N. exocoeti* from Andhra Pradesh coast. Earlier record indicates that the species *Siganusoramin* was infected by *Nerocilasigani* Bowman and Tareen1983 in the south east coast of India.

Similarly, during the operation in the area Lat. 17°44.5'N / Long. 83° 27.1'E it was noticed that the species Bulls eye, *Priacanthus hamrur* (Forsskal, 1775)was parasitized by the parasite *Nerocila serra* Schioedte and Meinert1881. The species was attached to the caudal fin of the fish.Bulls eye, is the new host record of the isopod parasite *N. serra* from Andhra Pradesh coast. Earlier record indicates that the species *Arius maculatus* was infected by *N. serra*in the south east coast of India (Nagapatinam).

The family Cymothoidae comprising of 43 genera and 358 species are commonly occurring isopods in Indian waters. The genus Nerocila of the family Cymothoidae is a large genus.

**a) *Nerocilaphaeoplura***

**Species description :** Pale brown /whitish in colour.Eyes dark and distinct. Total length: 16 -20 mm, Total width: 05-07 mm, Total weight: 3.5-5.0 gm. Sex: Female.

**Taxonomical Description**

Class : Crustacea
Order : Isopoda
Family : Cymothoidae Leach, 1814
Genus : Nerocila Leach, 1818
Species : *Nerocila phaeoplura,*(Bleeker,1857,Morton,1974)

A parasite *Nerocila phaeopleura* attached at caudal fin and caudal peduncle of *Siganus canaliculatus*

**b) *Nerocila exocoeti***

**Species description:** The entire body of the specimen was blue in color, with many chromatophores. Total length: 15-18 mm, Total width: 05-06mm, Total weight: 3.5-4.0gm. Sex: Female.

**Taxonomical Description**

Class : Crustacea
Order : Isopoda
Family : Cymothoidae Leach, 1814
Genus : Nerocila Leach, 1818
Species : *Nerocila exocoeti* Pillai 1954

*A parasite Nerocila exocoeti* attached at caudal peduncle of *Siganus canaliculatus*

***c) Nerocila serra***

**Species description:** Body about 2.0 times as long as wide, widest between pereonites 6–7. Entire body of the specimen was white in colour in dorsal part and brown in colour in lateral part with many chromatophores.

Total length: 14-18 mm, Total width: 06-07mm, Total weight: 3.5-4.0gm. Sex: Female.

**Taxonomical Description**

Class : Crustacea
Order : Isopoda
Family : Cymothoidae Leach, 1814
Genus : Nerocila Leach, 1818
Species : *Nerocila serra,* Schioedte and Meinert1881

A parasite *Nerocila serra attached* at caudal peduncle of *Priacanthus hamrur*

### 8.1.13. Record of Bigger sized Swordfish -

During the month of November' 2019, while carrying out exploratory survey by the vessel *MFV Matsya Vrushti*, 04 nos. of Sword fishes weighing more than 100 kg each were caught. Three sword fishes were caught in the area Lat. $18^0$N / Long. $69^0$ E on 18.11.2019 and on 27.11.2019 and one sword fish was caught from the area Lat. $19^0$N / Log. $69^0$ E on 19.11.2019. The fish caught on 18.11.2019 was the biggest one having a total length of 370 cm and weighed 155 kgs.

All the four sword fishes were females with fully matured ovaries, each one weighing about 09 Kg.

*Sword fish with their gonads*

### 8.1.14. Plastic materials observed in the gut content of Dolphin fish, *Coryphaena hippurus*

During November' 2019 , while carrying out the exploratory survey by the vessel MFV*Matsya Vrushti*, the Dolphin fish *Coryphaena hippurus* recorded on 24.11.2019 from the area Lat. $21^0$N / Long. $68^0$ E. While carrying out gut content analysis, plastic items were observed in the gut of Dolphin fish. The plastic item included wrapper of biscuit packet in the gut of one fish and a piece of plastic bucket in the gut of another fish. It may be due to the heavy dumping of plastic materials into the sea and the fishes feeding on them, attracting by the glittering of the items.

### 8.1.15. New geographical record of hairtail blenny *Xiphasia setifer* Swainson, 1839 (Perciformes: Blenniidae) from Wadge Bank

A single specimen of Hairtail blenny, *Xiphasia setifer* (family Blenniidae) was collected by bottom trawl net operated by the vessel *M.F.V. Matsya Varshini* during January' 2020, in the area Lat. 7° 51.8'N / long. 77°11.2'E (South of Kanyakumari) at the depth of 58m. *X. setifer* (family Blenniidae) is reported for the first time from the wadge bank, southern India.

The family Blenniidae has comprised of 58 genera and 401 species (Fricke *et al.* 2020), and the members of this family are distributed in tropical and subtropical waters in the Pacific, Indian and Atlantic Oceans (Nelson, 2006; Hastings and Springer, 2009). Of these, 26genera and 65 species are reported from Indian waters (Joshi *et al*. 2017). There are two valid species under the genus *Xiphasia setifer* Swainson 1839 and *Xiphasia matsubarai* Okada & Suzuki 1952. In India, *X. setifer*is so far reported from East coast (Day 1885 and Barman *et al.* 2007) and North West coast (Swapnil *et al.* 2018). *Xiphasia setifer* can be discriminated from *X. matsubarai* by higher dorsal fin count 120-130 versus 94-104 and pectoral count 12-14 and 10-11 respectively (YI Murong *et al.* 2017).

**Meristic characters of *Xiphasia setifer*:** Total dorsal fin rays -123; Pectoral fin rays -12; Anal fin rays-108; caudal fin rays – 9.

**Morphological characters (measurements in mm):** Total length-370mm; Head Length-29; Pelvic fin length-13; Pectoral fin length-13; Anal-length 61; head depth-11;body depth-9; eye diameter-6.5;snout length-7.5 confirms the species. Body of this specimen was elongate and compressed, eel-like body but has central caudal filaments; Mouth small with two large fang like tooth on lower jaw; Dorsal and anal fins long continue to the caudal; twenty three black cross bands on the body; there is a black eye like blotch surrounded by black circle on inter-spinal membrane between the 5$^{th}$ and 6$^{th}$ dorsal rays and another diffused elongate black patch between 10-15dorsal rays.

### 8.1.16. On the occurrence of rare longtail butterfly ray, *Gymnura poecilura* (Shaw, 1804) (Gymnuridae - Myliobatiformes) from Kerala coast

The vessel *M.F.V. Matsya Varshini* while carrying out her survey operation during March' 2020 voyage, recorded a single female specimen of *Gymnura poecilura* from the area Lat. 9°09.6'N / Long.76°17.32'E (North off Kollam) at 32m depth. Butterfly ray, *Gymnura poecilura* (Shaw, 1804) belongs to the family Gymnuridae, a group of shallow water rays having cosmopolitan distribution occurring in sandy and muddy bottoms. The family Gymnuridae has a single genus *Gymnura* van Hasselt, 1823 and consist of 13 valid species (Fricke *et al.* 2020). Only three species of *Gymnura* are reported from Indian waters, mostly of which are from East coast of India (Sujatha 2002, Barman *et al*. 2007, Yennawar *et al*. 2010, Muktha *et al.* 2018) while one species is reported from the north-west coast of India, Veraval and Mumbai (Muktha *et al.* 2018). The present report confirms its distribution range extended up to Kerala coast mainly Kollam.

Details of the specimen are as follows:

*Dorsal view of Gymnura poecilura 470mm (DW) and ventral view*

### 8.1.17. New insights to the biology of black snoek *Thyrsitoide smarleyi* (Teleostei: Gempylidae) in the Andaman and Nicobar waters, India.

During the exploratory survey for swordfish in the Andaman and Nicobar waters using horizontal longlining at night conducted during February-March' 2018, recorded black snoek,(*T. marleyi*) as a bycatch along with the targeted species, *Xiphias gladius* Linnaeus, 1758. Our knowledge on the biology and ecology of black snoek *Thyrsitoides marleyi* Fowler, 1929 is highly limited, since most of the available literatures on this species are taxonomic accounts or first reports.

The information on the biological and morphometric parameters of the *T. marleyi* caught were studied to gather preliminary information on species morphology, food and reproductive biology. This constitutes the first report of *T. marleyi* in the Andaman and Nicobar Islands waters of Indian EEZ. Detailed taxonomic account of the species using traditional as well as molecular (COI DNA barcoding) marker techniques and morphology of sagittal otolith and brain are presented and discussed. Further, information on the biology of this sporadically reported species is described based on specimens caught during longline survey for swordfish. Overall sex ratio is skewed to males (1:4.6, F:M) and the size at maturity ($TL_{50}$) estimated is 101.1 cm (males) and 106.7 cm (females). Average absolute fecundity is 0.93 million ova, while the relative fecundity is 216.84 eggs per gram of body weight. Trophic level estimated was 4.15 and mesopelagic teleosts, predominantly of the family Myctophidae and other groups of the deep scattering layer forms bulk of black snoek diet.

*Figure: Black snoek Thyrsitoides marleyi Fowler, 1929 sampled from Andaman and Nicobar Islands waters (a) whole specimen (b) area of bifurcation of lateral line (c) lateral line scales (d) pyloric caeca*

### 8.1.18. Report of Horseshoe crab Tachypleus gigas from Northeast coast of India

*M.F.V. Matsya Darshini* carried out regular exploratory fishery resources survey during March' 2020 for assessment and monitoring of fishery resources along the upper east coast of India between Lat 16°N-21°N (Northeast coast of India). 6 specimens (3 males and 3 females) of king crab, *Tachypleus gigas* were recorded.

The details of the species recorded and the morphometric characters of the present specimens of *Tachypleus gigas* are given in the following table.

| **Details of the species recorded** | **1** | **2** | **3** | **4** | **5** | **6** |
|---|---|---|---|---|---|---|
| Latitude(°N) | 20° 16.4'N | 20°18.9'N | | 20° 59.4'N | | |
| Longitude(°E) | 87°02.4'E | 87°09.1'E | | 87°42.7'E | | |
| Depth(m) | 34-35 | 42-43 | | 37-38 | | |
| **Morphometric characters (cm)** | | | | | | |
| Total length (TL) | 39.8 | 31.5 | 41.2 | 29.1 | 34.8 | 40.3 |
| Telson length | 19.4 | 15.4 | 19.2 | 14.1 | 13.2 | 19.3 |
| Carapace length | 20.4 | 16.4 | 22.7 | 16.3 | 21.7 | 20.2 |
| Prosoma length | 12.1 | 10.3 | 16.2 | 10.2 | 14.6 | 14.7 |
| Prosoma width | 22.6 | 16.9 | 22.1 | 16.4 | 22.3 | 21.6 |
| Opisthosoma length | 8.0 | 6.1 | 8.2 | 5.7 | 8.2 | 7.3 |
| Opisthosoma width | 12.1 | 8.9 | 12.1 | 8.8 | 11.9 | 11.6 |
| Inter orbital distance | 10.4 | 7.6 | 10.6 | 7.4 | 10.3 | 10.2 |
| Weight (gm) | 540 | 200 | 560 | 175 | 565 | 510 |
| Sex | F | M | F | M | F | F |

*Tachypleus gigas*

## 8.2 Inter-institutional projects

**SAMUDRA project on "Identification, forecasting and monitoring of Potential Fishing Zone for Tamil Nadu coastal and offshore waters".**

**Study area (for FSI)**

The study area chosen for the project is Coastal and offshore waters of Tamil Nadu, located along the south-east coast of India (off Chennai, Pudhuchery, Cuddalore, Parangipettai, Karaikal, Nagapattinam coasts etc.)

**Duration of the project** : 2017-2020

**Principal Investigator** : Dr. L. Ramalingam, Director General (I/C), Fishery Survey of India

**Co Principal Investigators:** : Dr. Ansuman Das, Fisheries Scientist, FSI, HQ

Shri J. C. Dhas, Jr. Fisheries Scientist, Chennai Base

The objectives of the project are as follows:

1. To collect water quality parameters in tandem with fish catch and to test the possible role of these parameters in influencing the fishery of the region.
2. The frequency of sampling and data collection shall for 2 weeks duration every month along the cruise track of FSI vessel and forecasted track in the Tamil Nadu coastal/ off-shore water (along the track off Chennai, Pudhuchery, Cuddalore, Parangipettai, Karaikal, Nagapattinam coasts etc.)
3. To collect phytoplankton and zooplankton datasets.
4. To collect water quality data including the pigments, nutrients etc.
5. To collect geo-tagged fish catch data using fishing vessels in connection with PFZ forecast and validation.
6. Validation of satellite and model outputs with *in situ* parameters.
7. To assist in developing and validating fish track algorithm based outputs.

**Geo-tagged fish catch data**

- Fish catch data collected during the year 2019 in respect of *MFV Samudrika* – 370 stations and *MFV Matsya Drushti* – 163 stations.
- RAW data(s) processed as per the MoU of SAMUDRA in the desired format.

**Final Project Report**

The project period was ended in March 2020. The final Project Report preparation is under progress.

## 8.3 Ph.D. Awarded

Shri S. K. Pattnayak, Sr. Scientific Assistant of Visakhapatnam Base of FSI was awarded with the Ph.D degree on the topic entitled "Fishery and Biology of Pickhandle barracuda *Sphyraena jello* (Cuvier, 1829) and Obtuse barracuda *Sphyraena obtusata* (Cuvier, 1829) in coastal waters of Andhra Pradesh" by the Andhra University, Visakhapatnam. He was awarded the Degree of Doctor of Philosophy on **30th December 2019**.

Shri K. Silambarasan, Sr. Scientific Assistant of Visakhapatnam Base of FSI was awarded with the Ph.D degree on the topic entitled "Studies on Taxonomy, distribution and molecular identification of finfish eggs, larvae and juveniles along Alamparai estuary, Southeast coast of India" at the conference hall of Dept. of Zoology, Sir Theagaraya College, Chennai. He was awarded the Degree of Doctor of Philosophy on **12th February 2020**.

# 9. EXTENSION ACTIVITIES FOR DISSEMINATION OF SURVEY FINDINGS

## 9.1 Workshop/open house conducted by the institute

As a part of 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 combined regional workshop and an exhibition on **"*Marine Fishery Resources off Maharashtra: Sustainable Utilization, Development and Management*"** was organized by Mumbai and Mormugao Base of FSI at Government Fisheries School, Tarkarli, Sindhudurg on 4th June 2019 for the benefit of local fishermen of the region. A total of about 100 fishermen participated in the workshop. In addition to the fishermen, the workshop was attended by the officials of State Fisheries Dept., Govt. of Maharashtra.


*Workshop cum exhibition on "Marine Fishery Resources off Maharashtra: Sustainable Utilization, Development and Management" by Mumbai and Mormugao Base on 04.06.2019*

Second workshop along with an exhibition on **"*Marine fishery resources of Maharashtra and eco-friendly fishing methods*"** was organised on 9th December 2019 at Vitthal Mandir Hall, Bharadkhol, Shrivardhan, Dist.-Raigad. for the benefit of local fishermen of the region. A total of about 270 fishermen participated in the workshop. In addition to the fishermen, the workshop was attended by the officials of State Fisheries Dept., Govt. of Maharashtra.


*Workshop cum exhibition on "Marine fishery resources of Maharashtra and eco-friendly fishing methods" by Mumbai Base on 09.12.2029*

An Open House on **"*Marine fishery resources of Maharashtra and eco-friendly fishing methods*"** was organised on 10th December 2019 at Vitthal Mandir Hall, Bharadkhol, Shrivardhan, Dist.-Raigad. Total 101 Students of 8th, 9th & 10th Standard and 01 faculty member from New English School, Bharadkhol, Shrivardhan, Dist.-Raigad participated in the open house. A brief insight was provided on the topics *viz.*, safety at sea, modern fishing

technologies and gears, ecofriendly fishing methods. Charts of the economically important fish and allied varieties from demersal as well as oceanic waters of Maharashtra were displayed for the students.

*Open House on "Marine fishery resources of Maharashtra and eco-friendly fishing methods" by Mumbai Base on 10.12.2019*

## Mormugao Base

Mormugoa Base organized second regional workshop on ***"Marine Fishery Resources of Goa: Sustainable Utilization, Development and Management"*** on 27th November 2019 at Sub-Office, Fisheries Complex, Malim Mandovi Fishermen Marketing Cooperative Society Ltd., Batim, Bardez, Goa. Shri Vinish Arlenkar, Director of Fisheries, Directorate of Fisheries, Govt. of Goa had inaugurated the workshop. Dr. H. D. Pradeep, Fisheries Scientist, FSI Goa, delivered the key note address and explained mandate of FSI and objective for organizing the workshop. Representatives from fishermen communities addressed the issues fishermen have to face at sea and what they expect from the government machineries in rectifying them. They also appreciated FSI for organizing such events for the benefit of fishermen. In the technical session, scientific papers were presented in regional languages i.e. Konkani and Hindi. A total of 131 fishermen from Fishermen Co-op Societies, Marketing Societies and officials of Dept. of Fisheries, Goa participated in the workshop. The News was published in the local dailies "Tarun Bharat" on 29th November 2019.


तरुण भारत

शुक्रवार, २९ नोव्हेंबर २०१९

मालीम येथे मच्छीमारबांधवांसाठी कार्यशाळा

तरुण भारत

*Workshop on "Marine Fishery Resources of Goa: Sustainable Utilization, Development and Management" organized by Mormugao Base on 27.11.2019*

Mormugao Base of FSI organized an Open House/Marine Fisheries Exhibition on ***"Sustainable Marine Fisheries in India"*** on 22nd August 2019 in the Base office. The School students, officials from PSGR Krishnammal College for Women, Peelamedu, Coimbator, Tamil Nadu were invited for the event. The programme was inaugurated by Dr. Smt. N. Ezhil L. Associate Professor, PSGR Krishnammal College for Women, Peelamedu, Coimbator, Tamil Nadu. The Digital charts depicting the activities, achievements and futuristic vision of FSI, fishing methods employed by FSI were displayed. Traditional and Mechanized boats, Gears Models, Charts of Marine fishery in status of Goa, India and World were also displayed.

*Open House/Marine Fisheries Exhibition on "Sustainable Marine Fisheries in India" organized by Mormugao Base on 22.08.2019*

*Open House/Marine Fisheries Exhibition organized by Mormugao Base on 22.01.2020*

Mormugao Base of FSI organized second Open House/Marine Fisheries Exhibition on 22nd January 2020 in the Base office. The students & faculty members from Vartak College, Vasai, Mumbai, Maharashtra participated in this event. They were provided with the presentation on fisheries activities undertaken by the Base office, different published materials and a demonstartion on the fabrication of different types of fishing gears.

## Cochin Base

A one day regional workshop on ***"Marine fisheries resources of Kerala coast and sustainable exploitation"*** held at Parish Hall, Arthungal, Alappuzha on 6th December 2019 for the benefit of the fishermen. A total of 120 participants were present in the above workshop.

An Open House was organized during 9th – 10th March 2020 onboard the survey vessels *MFV Matsya Varshini* and *MFV Lavanika*.

## Chennai Base

A one day regional workshop on *"**Oceanic Fishery Resources of the South East Coast of India***" and awareness programme on ***"Responsible Fishing"*** was organized by the Chennai Base on 18th October 2019 at Conference hall of the Central Marine Fisheries Research Institute (CMFRI), Mandapam Camp, Rameswaram for the benefit of fishermen. Dr. Kathevarayan, Deputy Director, Tamil Nadu State Fisheries Department, Ramanathapuram, Dr. Jeyakumar, Scientist-In-charge, CMFRI, Mandapam, Rameswaram and Ujjwal Singh, representative from Indian Coast Guard Station, Mandapam, Rameswaram were the guests of Honor. Technical session and an Open House were arranged at the venue. Altogether 70 fishermen from Mandapam and surrounding area attended the workshop and benefited out of it.

*Workshop on "Oceanic Fishery Resources of the South East Coast of India" and awareness programme on" Responsible Fishing" by the Chennai Base on 18.10.2019*

As a part of extension programme, second one day regional workshop on **"*Tuna and other Oceanic Fishery Resources, its Onboard Handling and Long line Fishing Method*"** was conducted on 10th January 2020 at Conference hall of Department of Fisheries and Fishermen Welfare, Fishing Harbour Complex, Thengaithittu, Puducherry for the benefit of Puducherry fishermen. Shri R Mounissammy, Director of Fisheries and Fishermen Welfare, UT Government, Puducherry was the guest of honor. Technical session and an Open House were arranged at the venue. Altogether 101 fishermen from Puducherry and surrounding area attended the workshop and got benefited out of it.

*Workshop on "Tuna and other Oceanic Fishery Resources, its Onboard Handling and Long line Fishing Method" by Chennai Base on 10.01.2020*

## Visakhapatnam Base

A one day regional workshop on ***"Marine Fishery Resources of Andhra Pradesh and Diversified Fishing Methods"*** was organized by the Visakhapatnam Base in association with the Department of Fisheries, Govt. of Andhra Pradesh at State Institute of Fisheries Technology, Kakinada, East Godavari district, Andhra Pradesh on 10th July 2019. Shri P. Koteswara Rao, Principal/Addl. Director of Fisheries, SIFT, Govt. of Andhra Pradesh, Kakinada was the Chief Guest on this occasion. Shri K. Govindaraj, Zonal Director of the Base delivered the key note address. The workshop was attended by 95 participants.

In the technical session Scientists of the Base presented scientific papers for the benefit of the fishermen and State officials. An exhibition was also organized during the workshop wherein, charts on fishery resources, photographs of fishes etc. and eco-friendly fishing gears were displayed.

*Regional Workshop on Marine Fishery Resources of Andhra Pradesh and Diversified Fishing Methods organized by Visakhapatnam Base on 10.07.2019 at Kakinada, Andhra Pradesh*

*Regional Workshop on Marine Fishery Resources of Odisha coast and Eco-friendly Fishing Methods organized by Visakhapatnam Base on 19.10.2019 at Paradip, Odisha*

Second Regional workshop on ***"Marine Fishery Resources of Odisha coast and Eco-friendly Fishing Methods"*** was organized by the Base in association with the Department of Fisheries, Govt. of Odisha at conference hall of Management society, Paradip, Odisha on 19th October 2019. Dr. N. Thirumala Naik IAS, Director of Fisheries, Govt. of Odisha was the Chief Guest on this occasion. An exhibition was also organized in the workshop. There were around 50 participants present in the above workshop.

### Port Blair Base

The Port Blair Base has organized a one day regional workshop on ***"Sustainable harvest of tuna and allied resources of Andaman and Nicobar waters"*** on 6th June 2019 at Shaheed Dweep (Neil Island), South Andaman to disseminate the information on the 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 protect the marine environment, etc. to the local fishermen of Shaheed Dweep Island. Dr. Utpal Kumar Sar, Director of Fisheries, Andaman and Nicobar Administration was the Chief Guest of the workshop. Around 100 fishermen and 3 PRI members participated in the workshop.

The Base also organized an Open House onboard the vessel *MFV Blue Marlin* for the benefit of Student community, fishermen and general public. Various fishing gears and accessories, navigational, engineering and oceanographic equipments, various aspects on safety at sea and Code of Conduct for Responsible Fisheries (CCRF) were displayed and demonstrated during the occasion.

## 9.2 Participation in Trade Fair/ Exhibition/ Mela/ Symposium/ Seminar

### Agro Vision Expo 2019

Scientists and Engineers from Mumbai (HQs), Mumbai Base and Cochin Base of FSI participated in the exhibition on **"Agro Vision Expo"** at Nagpur during 22nd – 25th November 2019.


*Agro Vision Expo at Nagpur during 22nd – 25th November 2019*

### Aqua Goa Mega Fish Festival 2020

Mormugao Base of FSI participated in the **"Aqua Goa Mega Fish Festival 2020"** organised by the Directorate of Fisheries, Govt. of Goa during 13th -15th February 2020 at SAG Compal Ground, Panaji, Goa by setting up a stall and exhibiting the activities of Fishery Survey of India.

*Visit of Dignitaries in FSI stall during "Aqua Goa Mega Fish Festival 2020"*

### ClimFishCon 2020

Cochin Base of FSI participated and exhibited the activities of FSI in the ClimFishCon 2020 International conference on **"Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security"** held at LeMeridian during 11th-14th February 2020.

### 10th Krishi Fair-2019


*Participation of FSI Visakhapatnam Base in the 10th Krishi Fair 2019 at Jagannath Dham, Puri, Odisha*

Visakhapatnam Base participated and put up an exhibition stall in ***"10th Krishi Fair-2019"*** held at Jagannatha dham, Puri, Odisha organized by Shree Shrikshetra Soochana (SSS), Puri, Odisha during the period 21st-25th October 2019. The organizational activities were displayed and demonstrated in the form of laminated charts, fish photographs, models of diversified fishing methods and also the Code of Conduct for Responsible Fisheries (CCRF) for the benefits of the visitors. Various central and state government officials, NGOS, fishermen, general public and representatives of electronic and print media visited the stall. On this occasion, the Visakhapatnam Base was awarded with memento and certificate of FSI participation.

## 9.3 Capacity Building Programme and Training to Fishermen and Students

### Cochin Base:

Cochin Base of FSI arranged training programme for 27 students of Fishery Engineering (Final Year) KUFOS, Kochi during 3rd-5th October 2019 and 17th-23rd October 2019 at its Marine Engineering Division.

On 9th October 2019, 18 students from AVTS, Kalamassery were trained on marine engineering at Marine Engineering Division and onboard the survey vessel *MFV Lavanika*.

### Chennai Base:

Chennai Base of FSI conducted capacity building and training on **"Monofilament tuna longlining"** to the Puducherry and Karikal fishermen members under FSI-FIMSUL II - Livelihood Development Project under Department of Fisheries and Fishermen Welfare, Govt. of Puducherry, Puducherry. The batch-wise training on the above topic was provided to 20 trainees during 12.07.2019 to 31.03.2020 onboard the vessel *MFV Matsya Drushti*.




Dr. Jeyachandra Dhas, Jr. Fisheries Scientist, Dr. A. John Chembian, Jr. Fisheries Scientist and Shri Y. Tharumar, Senior Scientific Assistant imparted theory classes to Tamil Nadu fishermen attending "Special training to Fishermen on capacity building in deep sea fishing and onboard handling of Tuna for traditional fishers" on 5th February 2020 at Central Institute of Fisheries Nautical and Engineering Training (CIFNET), Chennai. The above theory classes were again arranged on 19th February 2020 by Dr. Jeyachandra Dhas, Jr. Fisheries Scientist on the same venue.

## Port Blair Base:

On 26th April 2019, the Port Blair Base of FSI on request from the Secretary (Fisheries) & Director of Fisheries, Andaman & Nicobar Administration imparted hands on training to the fishermen of the Islands. Three fishermen from Guptapara were taken onboard the vessel *MFV Blue Marlin* and trained on tuna longline technology and preparation of sashimi grade tuna.

The Directorate of Fisheries, Andaman and Nicobar Administration in collaboration with the Port Blair Base of FSI organized a ***"Hands-on-training on modern fishing technologies"*** onboard the vessel *MFV Blue Marlin* on 6th June 2019. The purpose of the training was to disseminate the information on schemes under ***"Blue Revolution, Neel Kranti"*** and their optimum utilization for the benefit of the local fishermen and to train the fishermen on modern fishing techniques and electronic gadgets for safety at sea. During the programme total of 36 fishermen including the FSI and UT officials were taken onboard the vessel *MFV Blue Marlin.*

## 9.4 Assistance Rendered to Fishing Industry

The Fishery Survey of India (HQs and different Zonal Bases of FSI) served the fishermen, marine fishing industry and the fisheries students of different colleges/ institutes in many ways. FSI provided them the in-house training as well as 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 also provided various publications to the end users.

### Mumbai HQs

| Description | Date |
|---|---|
| Ms. Baig Zeennira Zafer, Ms. Uma Gholap and Ms. Arti Jadhav, M. Sc. students from K. J. Somaiya College of Science & Commerce, Vidyavihar. | 19th June 2019 |
| Ms. Namrata A. Dusane and Mr. Akil Sayed M. Sc students from K. J. Somaiya College of Science & Commerce, Vidyavihar. | 24th June 2019 |
| Ms. Pragati Chubey and Ms. Sharon Khanna M. Sc students from K. J. Somaiya College of Science & Commerce, Vidyavihar. | 25th June 2019 |
| Dr. Santanu Chowdhury, Director, NRSC, Hyderabad along with a Scientist. | 29th July 2019 |
| 4 students from St. Mary's High School, Mazagaon. | 19th September 2019 |
| Shri Anasari Rumann, Office Administrative, AMIT GPS & Navigation Ltd., Mumbai. | 23rd September 2019 |
| Students from G.C. Patel Institute of Architecture, V. N. S. G. U., Surat. | 30th December 2019 |
| 48 B. F. Sc. Students along with 3 staff members from Annamalai University, CAS in Marine Biology, Faculty of Marine Sciences, Tamil Nadu. | 21st January 2020 |
| Dr. Vivek Verma, Surg Capt., Sr. Advisor Marine & Hyperbaric Medicine and Mr. Chandan B P., School of Naval Medicine, INHS Asvini, Colaba, Mumbai. | 4th February 2020 |
| 50 Students of Bachelors in Management Studies from Vindyalankar School of Information Technology (VSIT), Mumbai. | 17th February 2020 |
| 13 F.Y. B.Sc. students of along with 1 faculty from A. K. Kalesekar College, Thane. | 25th February 2020 |

### Mumbai Base

| Description | Date |
|---|---|
| 26 students and two staff members from College of Fishery Science, Sri Venkateswara Veterinary University, Nellore, Andhra Pradesh. | 1st July 2019 |
| 48 students and three staff members from College of Fishery Science, Annamalai University, Tamil Nadu. | 21st January 2020 |
| 50 students and one staff member from Vidyalankar School of Information Technology (VSIT), Wadala, Mumbai, Maharashtra. | 17th February 2020 |
| 13 students and one staff member from A. E. Kalsekar Degree College, Thane, Maharashtra. | 25th February 2020 |

### Mormugao Base

| Description | Date |
|---|---|
| Shri Sydney Frasaco, Chairman, Vasco Boat Owners Boat Association, Kharewada, Vasco and Shri Andrev Dias, Suratkal, Mangalore. | 24th May 2019 |
| Shri Rainer Dias and Shri Rohan Thalurr, Fisheries Entrepreneur from Panaji. | 25th June 2019 |
| Shri Anderw Dias student from Suratkal, Mangalore, Karnataka. | 30th September 2019 |

| Description | Date |
|---|---|
| Mr Jerry Fernandes and Mr. Rohit Sancocar, Zuari Fisherman Co-Operative Society Ltd., Vasco Fishing Jetty, Kharivada, Vasco-da-Gama, Goa. | 14th October 2019 |
| 13 Fishermen trainees and 02 training staff sponsored by Director of Fisheries, Govt. of Goa. | 11th December 2019 |

## Cochin Base

| Description | Date |
|---|---|
| 28 trainees and 2 officials from the Kerala State Fisheries Department training centre, East Kadungallur, Aluva. | 2nd May 2019 |
| 28 B. Sc. Zoology students from Devamatha College, Kottayam visited Marine Engineering Division of FSI. | 28th June 2019 |
| 23 students from Vocational Higher Secondary School, Vaikom West, Kottayam visited survey vessel *MFV Lavanika* and Marine Engineering Division. | 23rd August 2019 |
| 30 M. Sc. Final Semester Aquaculture students from St. Alberts College, Ernakulam visited survey vessel *MFV Lavanika* and Marine Engineering Division. | 28th August 2019 |
| 26 students along with two academic staff from Fisheries College, Ratnagiri. | 13th December 2019 |

## Chennai Base

| Description | Date |
|---|---|
| 13 students from Pachaiyappa's College, Chennai visited the Base for the *Internship training programme*. | 6th – 10th May 2019 |
| 10 students along with one official of MFC 2017-19 batch of Central Institute of Fisheries Nautical & Engineering Training Unit, Visakhapatnam. | 16th May 2019 |
| 23 Second year B.Tech Students accompanied by one Assistant Professor of Tamil Nadu Dr. J. Jayalalitha Fisheries University, College of Fisheries Engineering, Nagapatnam, Tamil Nadu. | 20th June 2019 |
| 59 Second year B.F.Sc Students along with one Assistant Professor and Head, Department of Fishing Technology and Fisheries Engineering of Tamil Nadu Dr. J. Jayalalitha Fisheries University, Dr. M. G. R Fisheries College and Research Institute, Ponneri, Tamil Nadu. | 10th July 2019 |
| 60 Fisherman from West Coast visited onboard the vessels *MFV Matsya Drushti* and *MFV Samudrika* for practical exposure as part of their short term Training programme. | 11th July 2019 |
| 58 Second year B.F.Sc Students along with one Assistant Professor and Head, Department of Fishing Technology and Fisheries Engineering of Tamil Nadu Dr. J. Jayalalitha Fisheries University, Dr. M. G. R Fisheries College and Research Institute, Ponneri, Tamil Nadu. | 25th July 2019 |
| 52 Zoology Vocational students along with one Assistant Professor of 2nd & 3rd year of Madras Christian College, Tambaram, Chennai. | 9th September 2019 |
| 32 school students of 8th & 9th standard accompanied with four teachers of Chennai Middle School and St. Anne's Girls High School, Royapuram, Chennai. | 27th January 2020 |
| 36 B. Sc. 2nd and 3rd year students along with 3 faculties of Department of Zoology & Industrial Fisheries, Karnataka Science College, Dharward, Karnataka. | 30th January 2020 |

*Internship training programme for students at Chennai Base of FSI during 6-10th May 2019*

## Visakhapatnam Base

| Description | Date |
|---|---|
| 15 students of B.F.Sc. from College of Fishery Science, Nagpur. | 8th April 2019 |
| 38 students along with 2 faculty members from Behra Institute of Maritime Training, Vizianagaram, Andhra Pradesh visited the Base and the vessels *MFV Matsya Shikari* and *MFV Matsya Darshini*. | 6th May 2019 |
| 31 students along with 2 faculty members from Central Institute of Fisheries Nautical and Engineering Training, Chennai. | 27th May 2019 |
| Shri. A. Kiran Reddy, Reporter from Deccan Chronicle, Visakhapatnam. | 12th June 2019 & 20th August 2019 |
| Smt. Padmaja, Reporter from All India Radio, Visakhapatnam. | 26th June 2019 |
| 38 students along with 1 faculty member from Shri.Venkateswara Veterinary University, Sri. M.V.K.R. Fisheries Polytechnic, Bhavadevarapalli, Krishna District, Andhra Pradesh. | 19th July 2019 |
| Shri Murthy, Reporter along with crew of TV 5 Television Channel visited the Base and the survey vessels *MFV Matsya Shikari* and *MFV Matsya Darshini*. | 19th July 2019 & 30th July 2019 |
| Smt. Padmaja, Reporter from All India Radio, Visakhapatnam. | 26th July 2019 |
| 29 students from Fisheries College, Jabalpur, Madhya Pradesh visited the Base and the vessels *MFV Matsya Shikari* and *MFV Matsya Darshini*. | 30th July 2019 |
| Dr. J. Balaji, Joint Secretary, Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India, New Delhi. | 7th August 2019 |
| Shri. D. Nagaraju, Fishermen, Chappala Uppada visited in connection with pawning season and pollution status of Visakhapatnam coastal water. | 26th August 2019 |
| 26 students of IInd Year MS.c. & IIIrd year B. Sc., Industrial Fisheries from RDS, College, Muzafarpur, Bihar. | 31st August 2019 |
| Ms. Sneha Prakasamma, Project Officer, Oceans and Coasts programme, WWF, India along with a colleague. | 29th September 2019 |
| 4 students of B. F. Sc. from College of Fisheries Science, Bihar. | 11th October 2019 |
| Shri G. Thirumala Rao and Shri N. Chitti Babu, Reliance Foundation, Kakinada. | 24th October 2019 |
| 53 students of B. Sc. 1st year, Industrial Fisheries along with 3 faculty members from Asutosh College, Kolkata. | 1st November 2019 |

| Description | Date |
|---|---|
| 27 students of B. Sc., CBZ final year of St. Joseph's College for Women, Gnanapuram, Visakhapatnam visited the Base and the vessel *MFV Matsya Darshini*. | 11th November 2019 |
| 31 students of B. Sc. 3rd year Industrial Fisheries along with 3 faculty members from Asutosh College, Kolkata. | 14th November 2019 |
| 62 students of B. Sc. (Zoology) IIIrd year along with 3 faculty members from Degree College (Men), Srikakulam visited the Base and the vessel *MFV Matsya Darshini*. | 7th December 2019 |
| 72 students of the B. F. Sc. 1st year Industrial Fisheries along with 2 faculty members from Fisheries College, Kawardha, Chhattisgarh visited the Base and the vessel *MFV Matsya Darshini*. | 4th January 2020 |
| Shri Sarath Shukla, Asst. Policy Analyst along with two colleagues. | 3rd February 2020 |
| 12 students of B. Sc. IIIrd year along with 2 faculty members from P. B. Siddeque Arts College, Vijayawada. | 11th February 2020 |
| 27 B. FSc. trainees from college of Fisheries, Tripura visited the Base and the vessel *MFV Matsya Darshini*. | 3rd March 2020 |

*Students visit from CIFNET, Chennai to Visakhapatnam Base of FSI on 27.05.2019*

### Port Blair Base

| Description | Date |
|---|---|
| Shri Arul Seelan, Fish Exporter, Port Blair. | 15th October 2019 |
| Shri Hemant Bherwani, Scientist, National Environmental Engineering Research Institute (NEERI). | 6th January 2020 |

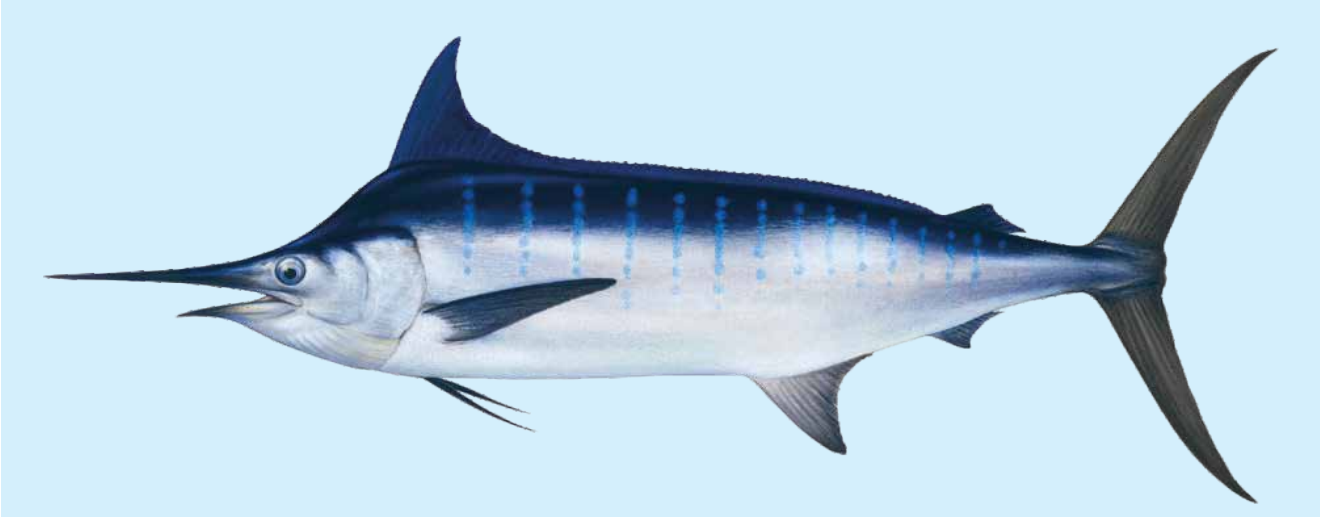
## 9.5 Training to CIFNET trainees

As a part of Human Resources Development, the Institute continued to provide on-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 | - | 4 | - | 4 |
| Mormugao | 1 | - | - | 1 |
| Cochin | 2 | 2 | 2 | 2 |
| Chennai | 4 | - | 1 | 3 |

## 9.6 Akashvani and Doordarshan Programmes

- Shri Swapnil S. Shirke, Sr. Scientific Assistant delivered a talk on Akashwani, Mumbai on "Opportunities and threats in Marine Fisheries of Maharashtra state" which was aired on 05.05.2019.
- Dr. Harshavardhan Joshi, Sr. Scientific Assistant gave an interview on Doordarshan, Mumbai (Sahyadri channel) on "Monsoon Fishing Ban and its importance" which was recorded on 14.05.2019 and broadcasted on 20.05.2019 at 1800 hrs.
- Shri Ashok S. Kadam, Fisheries Scientist and Shri Swapnil S. Shirke, Senior Scientific Assistant attended the meeting of Village (Gramin) Programme Advisory Committee for Akashwani Mumbai's programme "Maze Aavar, Maze Shivar" on 14.06.2019.
- Shri. Ashok S. Kadam, Fisheries Scientist attended the Quarterly meeting of Agricultural Advisory Committee of Doordarshan on 19.09.2019 at Doordarshan Kendra, Worli, Mumbai.
- Shri Ashok S. Kadam, Fisheries Scientist attended the meeting of "Maze Aavar, Maze Shiwar" at Aakashwani Mumbai Conference Hall, Mumbai on 20.12.2019.
- Shri Swapnil S. Shirke, Sr. Scientific Assistant attended the Quarterly meeting of Agricultural Advisory Committee of Doordarshan on 13.03.2020 at Dr Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Dist. – Ratnagiri.



# 10. VISITORS / DIGNITARIES

Dignitaries from Ministry, Govt. of India and State Fisheries Departments visited at Fishery Survey of India (HQs) and the respective Base offices and discussed about various activities of FSI.

- Ms. Rajni Sekhri Sibal IAS, Secretary, Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, New Delhi visited the FSI (HQs), Mumbai on 20.05.2019 and reviewed the institutional activities.
- Dr. J. Balaji, Joint Secretary, Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India, New Delhi visited Visakhapatnam Base of FSI on 07.08.2019.
- Shri Sagar Mehra, IAS, Joint Secretary (Inland Fisheries) Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying, Government of India, visited the Chennai Base of FSI and vessels *MFV Matsya Drushti* and *MFV Samudrika* on 09.09.2019.
- Shri Mukesh ISS, Joint Director (Statistics), Department of Fisheries, Ministry of Fisheries, Animal husbandry and Dairying, New Delhi visited the Chennai Base of FSI on 27.09.2019.
- Shri Mukesh ISS, Joint Director (Statistics), Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying visited FSI (HQs), Mumbai and conducted a scientific meeting during 28th -29th November 2019. The Joint Director had a detailed discussion with the Scientists and Computer Division officials of FSI on compilation of 10 years data on Tuna/Tuna like species and other fish species in order to utilize the data and disseminate for the benefit of the fishing industry and the fishermen. He also physically verified the time series data available with FSI along with the publications of FSI.
- Shri S. Venkateshapathy IAS, Director of Fisheries, Government of Kerala visited Cochin Base of FSI on 09.03.2020.

*Ms. Rajni Sekhri Sibal IAS, Secretary, DFAH&D at FSI (HQs)*

*Shri Mukesh ISS, Joint Director, DFAH&D at FSI (HQs)*

*Shri Sagar Mehra, IAS, Joint Secretary, DFAH&D at Chennai Base of FSI*

*Shri Mukesh ISS, Joint Director, DFAH&D at Chennai Base of FSI*

# 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.

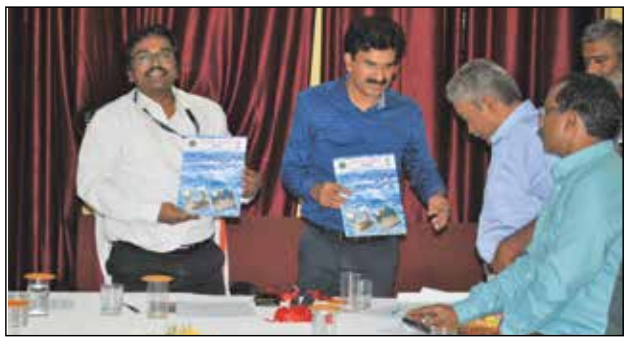
## Hindi Magazine

Hindi in-house magazine "*Visakha*" was released on 30.10.2019 by Visakhapatnam Base of FSI.

"*Matsya Dhwani*", Hindi magazine of Cochin Base was released by Shri S. Venkateshapathy, IAS, Director of Fisheries, Govt. of Kerala on 09.03.2020.

The 8th issue of Hindi In-house magazine of Fishery Survey of India (HQs.) "*Matsya Kiran*" was published and released in the OLIC Meeting held on **20.03.2020** at Fishery Survey of India (HQs.), Mumbai.

*Release of Hindi in-house magazine "Visakha" of Visakhapatnam Base on 30.10.2019*



*Release of Hindi magazine "Matsya Dhwani" of Cochin Base on 09.03.2020*

*Release of Hindi in-house magazine "Matsya Kiran" at FSI (HQs) on 20.03.2020*

## Meena News

| | |
|---|---|
| Meena News Vol. XXXV No.: II April - June 2018 | (Bilingual) |
| Meena News Vol. XXXV No.: III July - September 2018 | (Bilingual) |
| Meena News Vol. XXXV No.: IV October - December 2018 | (Bilingual) |
| Meena News Vol. XXXVI No.: I January - March 2019 | (Bilingual) |
| Meena News Vol. XXXVI No.: IIApril - June 2019 | (Bilingual) |
| Meena News Vol. XXXVI No.: III July - September 2019 | (Bilingual) |
| Meena News Vol. XXXVI No.: IV October - December 2019 | (Bilingual) |

## Survey Programme

Fishery Resources Survey, Assessment & Research Programme 2019-20

## Reports

Annual Report 2018-19 of the Institute.

India's National Report to the Scientific Committee of the Indian Ocean Tuna Commission (IOTC) 2019.

## Resources Information Series - 12 issues

Four issues each from Chennai and Visakhapatnam Bases, three issues from Mumbai Base and one issue from Mormugao Base were published in respective local languages for the benefit of fishermen.

## Papers published by scientists in Journals / Magazines

Ramachandran S., Sijo Varghese, N Unnikrishnan, D. K. Gulati, A. E. Ayoob, L. Ramalingam, 2019. New record of *Alpheus bisincisus* De Haan, 1844 (Caridea: Alpheidae) from the west coast of India. *Journal of the Marine Biological Association of India* **61**: 95-99.

Ramachandran S. and L. Ramalingam, 2019. Distribution and abundance of billfishes in Indian EEZ. *IOTC2009WPB17-26*.

Nashad M., Sijo P. Varghese, S. S. Shirke, A. A. M. Hatha and L. Ramalingam, 2019. Further report of *Bariaka alopiae* Cressey, 1966 (Copepoda, Siphonostomatoida) from the Indian Ocean with new host and geographic record. *Journal of Parasitic Diseases* 43 (4), 544-548.

Nashad M., Sijo P. Varghese, K. K. Bineesh, A. A. M. Hatha, S. Rajendran and L. Ramalingam, 2019. Novel report of three parasites of wahoo, *Acanthocybiumsolandri* (Cuvier, 1832) from Andaman and Nicobar Islands. *Journal of the Marine Biological Association of India* **61 (1)**, 61-65.

Varghese Sijo P., M. Nashad, P. Das, S. S. Shirke and L. Ramalingam, 2019. New insights to the biology of black snoek*Thyrsitoidesmarleyi* (Teleostei: Gempylidae) in the Andaman and Nicobar waters, India. *Vie et milieu Life and environment* **69 (4)**, 249-258.

Kumar Nimit, Masuluri, Nagaraja Kumar, Aaron M. Berger, Rose P. Bright, Satya Prakash, T. V. S. Udayabhaskar, T. Srinivasa Kumar, Prathibha Rohit, A. Tiburtius, Shubhadeep Ghosh and Sijo P. Varghese, 2020. Oceanographic preferences of yellowfin tuna (*Thunnus albacares*) in warm stratified oceans: A remote sensing approach. *International Journal of Remote Sensing* **41 (15), 1**-21.

Mukesh, Sijo P Varghese, Sanjay Pandey and L Ramalingam, 2019. Marine fisheries data collection methods in India an update. *Working documents of the Meeting of the IOTC Working Party on Methods, San Sebastian, Spain. IOTC2019WPM1021*.

Mukesh, Rohit Pratibha, Sijo P. Varghese, Sanjay Pandey and L. Ramalingam, 2019. Status of Indian tropical tuna fisheries in 2018. *Working documents of the Meeting of the IOTC Working Party on Tropical Tunas, San Sebastian, Spain. IOTC2019WPTT2115_Rev1*.

Varghese Sijo P., Mukesh, Sanjay Pandey and L. Ramalingam, 2019. Recent studies on the population delineation of yellowfin tuna in the Indian Ocean considerations for stock assessment. *Working documents of the Meeting of the IOTC Working Party on Methods, San Sebastian, Spain. IOTC2019WPM1018*.

Varghese Sijo P., V. S. Somvanshi, Sanjay Pandey and L. Ramalingam, 2019. Diet of yellowfin and skipjack tunas in the eastern Arabian Sea. *Working documents of the Meeting of the IOTC Working Party on Tropical Tunas, San Sebastian, Spain. IOTC2019WPTT2118.*

Ramalingam L., Vinod Kumar Mudumala, Ansuman Das, A. Siva, Rajashree B. Sanadi, Rahulkumar B. Tailor, Kiran S. Mali, Pratibha Rohit, T. V. Sathianandan, Sijo P. Varghese and Sanjay Pandey, 2019. *India's National Report to the Scientific Committee of the Indian Ocean Tuna Commission (IOTC) 2019. Working documents of the Meeting of the IOTC Scientific Committee, Karachi, Pakistan. IOTC2019SC22NR08*.

## Papers presented by scientists in other Workshops/ Seminars/ Symposiums

Paper presented at the seminar on "Harith Matshiki-2019 on the theme "Sustainability on Marine Fisheries - Opportunities and Challenges" held on 30th July 2019 at Central Institute of Fisheries Technology, Visakhapatnam.

Pattnayak S. K., 2019: *"Present Status of marine fisheries (demersal) in the Upper east coast of India (Andhra Pradesh & Odisha)"*

## Papers presented by scientists under extension activities of FSI

### Mumbai Base

Papers presented in the regional workshop on "*Marine Fishery Resources of Maharashtra: Sustainable Utilization, Development and Management*" on 4th June 2019 at Government Fisheries School, Tarkarli, Sindhudurg.

Kadam A., 2019. *"Marine fishery Resources of Maharashtra and oceanic resources"*
Dwivedi S. K., 2019. "*Code of Conduct for Responsible Fisheries"*
Shirke S., 2019. "*Hygienic fish handling onboard the vessel and on landing center"*

Paper presented at regional workshop and exhibition on "*Marine Fishery Resources of Maharashtra and Eco-friendly Fishing Methods*" on 9th December 2019 at Vitthal Mandir Hall, Bharadkhol, Shrivardhan, Dist.-Raigad.

Balanayak B., 2019. "*Fuel saving tips"*
Kadam A., 2019. *"Marine fishery Resources of Maharashtra"*
Dwivedi S. K., 2019. "*Code of Conduct for Responsible Fisheries"*
Shirke S., 2019. "*Safety at sea"*
Joshi H. D., 2019. "*Hygienic fish handling onboard the vessel and on landing center"*

### Mormugao Base

Papers presented in the regional workshop on "*Marine Fishery Resources of Maharashtra: Sustainable Utilization, Development and Management*" on 4th June 2019 at Government Fisheries School, Tarkarli, Sindhudurg.

Nagpure Raju S., 2019. "*Decadal changes in Marine fishery resources along South Maharashtra coast"*
Solomon S., 2019. *"Safety at sea"*

Papers presented in the regional workshop on "*Marine Fishery Resources of Goa: Sustainable Utilization, Development and Management*" on 27th November 2019 at Sub-Office, Fisheries Complex, Malim Mandovi Fishermen Marketing Cooperative Society Ltd., Batim, Bardez, Goa.

Nagpure Raju S., 2019. "*Demersal fisheries resources of Goa coast change over the decades"*
Solomon S., 2019. *"Oceanic fisheries resources and harvesting method"*
Mohapatra A. K., 2019. "*Sea Safety and Navigation*"
Singh Puran., 2019. "*Code of Conduct for Responsible Fisheries*"

### Cochin Base

Papers presented in the regional workshop on *"Marine fisheries resources of Kerala coast and sustainable exploitation"* at Parish Hall, Arthungal, Alappuzha on 6th December 2019.

Ramachandran S., 2019 "*Non conventional fishery resources and exploitation by eco-friendly fishing methods*"
Unnikrishnan N., 2019 "*Marine Fishery Resources of Kerala coast - problems and prospects*"
Arunkumar P. A., 2019 "*Safety and precautionary measures to the fishermen*"

Ashokan J., 2019 "*Safety of Life at Sea (SOLAS)*"

**Chennai Base**

Papers presented in the workshop on "*Oceanic Fishery Resources of the South East Coast of India cum Awareness programme on the Responsible Fishing*" at Central Marine Fisheries Research Institute (CMFRI), Mandapam Camp, Rameswaram on 18th October 2019.

Jeyachandra Dhas J., 2019 "*Eco-friendly and Diversified Fishing methods*"
John Chembian A., 2019 "*Oceanic Fishery Resources*"
Tharumar Y., 2019, "*Monofilament Long Lining, Deck Equipments and Accessories*"

Papers presented in the workshop on "*Tuna and other Oceanic Fishery Resources, its Onboard Handling and Long line Fishing Method*" at Department of Fisheries and Fishermen Welfare, Fishing Harbour Complex, Thengaithittu, Puducherry on 10th January 2020.

Jeyachandra Dhas J., 2020 "*Ecofriendly and Diversified Fishing methods*"
John Chembian A., 2020 "*Onboard tuna handling and preservation for sashimi grade*"
Tharumar Y., 2020, "*Monofilament Long Lining, Deck Equipments and Accessories*"
Kanthan S., 2020, "*Conservation of Fuel in Fishing Boats*"

**Visakhapatnam Base**

Papers presented at the Regional Workshop held at SIFT, Kakinada, West Godavari District, Andhra Pradesh on 10th July 2019.

Jagannadh N., 2019 "*Oceanic Tuna Resources of the Andhra Pradesh Coast and Handling and Preservation of Tuna*"
Prasad G. V. A., 2019 "*Marine Fishery Resources of Andhra Pradesh Coast*"
Prasad G. V. A., 2019 "*Code of Conduct for Responsible Fisheries*"

Papers presented at the Regional Workshop held at Paradip, Odisha on 19th October 2019.

Kar A. B., 2019 "*Marine Fishery Resources of Odisha Coast*"
Kar A. B., 2019 "*Tuna Fish Handling and Preservation*"
Pattnayak S. K., 2019 "*Diversified fishing Methods*"
Pattnayak S. K., 2019 "*Code of Conduct for Responsible Fisheries*"
Pattnayak S. K., 2019 "*Safety at Sea*"

**Port Blair Base**

Papers presented at the Regional Workshop held at community Hall, Shaheed Dweep Island on 6th June 2019.

Uikey Dewanand E., 2019 "Code of Conduct for Responsible Fisheries"
Nashad M., 2019 "Marine Fishery Resources of Andaman and Nicobar Islands"

# 12. MEETINGS

## Half Yearly ROSA Meeting

**The Half Yearly Review of Operational and Scientific Activities (ROSA)** meeting for the year 2019-20 was conducted during 30-31st October 2019 at Visakhapatnam Base of FSI. The Heads of offices & Engineers of FSI (HQs) and all its Bases attended the meeting. Shri Rakesh Kumar Singh, Dy. Secretary, Ministry of Fisheries, Animal Husbandry and Dairying, Department of Fisheries, New Delhi was also present in the review meeting.

## Consultative Committee Meeting:

### Mumbai HQs

The 20th Consultative Committee meeting of Fishery Survey of India (HQs), Mumbai was held on 17th May 2019 at the conference hall of FSI (HQs), Mumbai under the Chairmanship of Dr. L. Ramalingam, DDG (Fy.) / Director General (I/C). The officials from CMFRI, CMLRE, NIO, DG Shipping, MPEDA, University of Mumbai, INCOIS, Representatives from Mahim Machimar Association and Karanja MAchimar Association attended the meeting. The Chairman welcomed all the participants and briefed about the creation of Department of Fisheries during February 2019 and wished that under the new department all can work together for the public, particularly, fishers, fishing industry and stakeholders. Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist represented the institutional activities, performance of the vessels during 2018-19 and proposed survey programme. Fishery Resource Survey Programme 2019-20 was finalized during the meeting.

*20th Consultative Committee meeting of Fishery Survey of India (HQs) held on 17.05.2019*

*Consultative Committee meeting of Cochin Base held on 09.03.2020*

### Cochin Base

Consultative Group meeting of Cochin Base of FSI was held on 9th March 2020 at the Marine Engineering Division under the Chairmanship of Shri S. Venkatesapathy IAS, Director of Fisheries, Government of Kerala.

### Chennai Base

16th Consultative Group Meeting was held on 4th March 2020 under the Chairmanship of Dr. G. S. Sameeran IAS, Director of Fisheries, Govt. of Tamil Nadu and other representatives from MMD, Scientist-in-Charge, CMFRI, Chennai, MPEDA, Chennai and Kanchipuram Dist. Fisherman Association Representative Shri. Venugopal Ex MLA. The meeting reviewed the performance of Survey vessel during the year 2019-20. Chairman of the meeting suggested that the department should conduct Tuna resource survey along Palk Strait and Gulf of Mannar. Chennai Base expressed difficulty to survey in Palk Strait due to depth constraints in the area. He agreed and requested for Tuna survey in Gulf of Mannar. Accordingly, a separate Tuna resource survey project is included in the Fishery Resources Survey, Assessment and Research programme proposed for the year 2020- 2021.

### Visakhapatnam Base

The Consultative Group Meeting of the Base for finalizing the survey programme 2019-20 was held on 2nd May 2019 under the Chairmanship of Shri Rama Sankar Naik IAS, Commissioner of Fisheries, Govt. of Andhra Pradesh at the Base office.

For finalizing the survey programme 2020-21, the Consultative Group Meeting was held on 6th March 2020 under the Chairmanship of Dr. G. Soma Sekharam, Commissioner of Fisheries, Govt. of Andhra Pradesh at the Base office.

*Consultative Group Meeting of the Visakhapatnam Base of FSI on 02.05.2019*

### Port Blair Base

*Consultative Group Meeting of the Port Blair Base of FSI on 26.04.2019*

The Consultative Group Meeting of the Base for finalizing the survey programme 2019-20 was held on 26th April 2019 under the Chairmanship of Smt. Nitika Pawar, IAS, Secretary (Fisheries), Andaman and Nicobar Administration at the Base office. The Chairperson, in her address urged the FSI to intensify its survey activities in the Island and disseminate the gathered information to the fishermen on a real time basis. Further she directed the FSI to impart training on latest technologies of fishing and post harvest methodologies to the fishermen of the Island. Dr. Utpal Kumar Sar, Director of Fisheries, Andaman & Nicobar Administration who was also present in the meeting requested the FSI to take up the following tasks:-

- Locating new fishing grounds.
- Minimum legal size (MLS) of the major fishery resources of the Andaman and Nicobar waters to be estimated for the sustainable utilization of the resources.
- Regular training to fishermen on modern fishing techniques.
- Dissemination of survey finding to the target group in a better way.
- The survey need to be intensified in the near shore waters.

The Consultative Group Meeting of the Base for finalizing the survey programme 2020-21 was held on 9th March 2020 under the Chairmanship of Smt. Nitika Pawar IAS, Secretary (Fisheries), Andaman and Nicobar Administration at the Base office.

# 13. PARTICIPATION OF DIRECTOR GENERAL AND OTHER OFFICIALS IN VARIOUS EVENTS

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

| Sl. No. | Events | Venue/ Date |
|---|---|---|
| 1 | 4th meeting of the Committee constituted for enquiry into loss suffered to the Govt. on account of the LOP Scheme. | Krishi Bhavan, New Delhi 2rd April 2019 |
| 2 | Special meeting of the Task Force on Fisheries Subsidies. | Krishi Bhavan, New Delhi, 5th April 2019 |
| 3 | 2nd meeting of the Committee for re-drafting of the Marine Fisheries (Regulation and Management) Bill. | Krishi Bhavan, New Delhi, 6th May 2019 |
| 4 | 5th meeting of the committee constituted for enquiry into loss suffered to the Govt. on account of the LOP scheme. | Krishi Bhavan, New Delhi 7th May 2019 |
| 5 | 2nd meeting of the Committee for re-drafting of the Marine Fisheries (Regulation and Management) Bill. | Krishi Bhavan, New Delhi 13th May 2019 |
| 6 | 6th meeting of the Committee constituted for enquiry into loss suffered to the Government on account of LOP Scheme. | Krishi Bhavan, New Delhi 14th May 2019 |
| 7 | 2nd meeting of the Committee to look into the aspects of banning/ regulating high HP boats. | Krishi Bhavan, New Delhi 14th May 2019 |
| 8 | 1st meeting of the Task Force constituted with reference to the Marine Mammal by-catch and the related international obligations. | Krishi Bhavan, New Delhi 28th May 2019 |
| 9 | Revised draft of the Marine Fisheries (Regulation and Management) Bill. | Krishi Bhavan, New Delhi 29th May 2019 |
| 10 | IOTC-Compliance Committee meeting (COC16). | Hyderabad 9th-10th June 2019 |
| 11 | IOTC 23rd Session of the Commission (S23). | Hyderabad 17th-21th June 2019 |
| 12 | The Departmental Screening Committee meeting for consideration of MACP proposals of FSI. | Krishi Bhavan, New Delhi 24th June 2019 |
| 13 | The meeting of Hon'ble Union Minister of Fisheries, Animal Husbandry & Dairying and Hon'ble MOSs with Senior Scientists/ Officers of ICAR along with Senior Officers of Department of Fisheries. | Krishi Bhavan, New Delhi 25th June 2019 |
| 14 | Meeting of all department Heads of Fisheries Institute held under the Chairmanship of Joint Secretary (Fy). | Krishi Bhavan, New Delhi 9th August 2019 |
| 15 | Visited the office of Director of Fisheries, Govt. of Tamil Nadu to chalk out the plan for organizing the workshop cum awareness programme on IUU fishing for the Rameshwaram & Thutoor fishermen. | Tamil Nadu 19th August 2019 |
| 16 | 2nd meeting of the committee to workout fleet plan for Indian EEZ. | BOBP-IGO, Chennai 19th August 2019 |

| Sl. No. | Events | Venue/ Date |
|---|---|---|
| 17 | National Workshop of the Full Size Project (FSP) of Bay of Bengal Large Marine Ecosystem Project (NW-BOBLME). | BOBP-IGO, Chennai<br>9th September 2019 |
| 18 | The ceremony of the release of ***Handbook on Fisheries Statistics 2018*** by Hon'ble Minister Shri Giriraj Singh, Ministry of Fisheries, Animal Husbandry & Dairying. | Media Centre, New Delhi<br>19th September 2019 |
| 19 | 3rd meeting of the Committee to work out fleet plan for Indian EEZ. | BOBP-IGO, Chennai<br>23rd September 2019 |
| 20 | 1st meeting of the Rules Drafting Committee constituted for the "Draft National Marine Fisheries (Regulation and Management) Bill". | MoFAH&D, New Delhi<br>11th October 2019 |
| 21 | 1st meeting of the committee for "Evaluation of tracking devices (transponders) for fishing vessels". | MoFAH&D, New Delhi<br>14th October 2019 |
| 22 | One-day regional Workshop on "Oceanic Fishery Resources of the South-east coast of India-cum-awareness programme on the responsible fishing" organised by Chennai Base of FSI in association with Department of Fisheries, Govt. of Tamil Nadu. | RC-CMFRI-Mandapam, Rameshwaram<br>18th October 2019 |
| 23 | 1st meeting of the Technical committee for reviewing the duration of the fishing Ban period and to suggest further Measures to strengthen the conservation and management aspects. | CMFRI, Kochi<br>24th October 2019 |
| 24 | 3rd meeting of Central Approval and Monitoring Committee (CAMC) | MoFAH&D, New Delhi<br>12th December 2019 |
| 25 | National Conference on Fisheries and Aquaculture with the theme "Harvesting the Untapped Potential of Fisheries & Aquaculture". | MoFAH&D, New Delhi<br>13th December 2019 |
| 26 | 1st meeting of the Technical Committee for review of IOTC resolution on harvest control measures and proposed quota allocation principals. | CMFRI, Kochi<br>3rd January 2020 |
| 27 | 2nd meeting of the Technical committee for reviewing the duration of the fishing Ban period and to suggest further Measures to strengthen the conservation and management aspects. | CMFRI, Kochi<br>27th January 2020 |
| 28 | 2nd meeting of the Technical Committee for review of IOTC resolution on harvest control measures and proposed quota allocation principals. | MoFAH&D, New Delhi<br>28th January 2020 |
| 29 | 2nd meeting of the Rules Drafting Committee constituted for the "Draft National Marine Fisheries (Regulation and Management) Bill". | MoFAH&D, New Delhi<br>29th January 2020 |
| 30 | Visited Porbandar to study the feasibilities for re-opening the Porbandar Base of FSI. | Porbandar<br>12th February 2020 |
| 31 | Attended the sitting of Standing Committee on agriculture for Examination of Demand for Grants 2020-21 for Department of Fisheries. | Parliament House, New Delhi<br>19th February 2020 |

## Involvement of scientists/ other officials in various programmes conducted by FSI and other organizations:

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 1 | Dr. Sijo P. Varghese, Zonal Director<br>Dr. S. Ramachandran, Sr. Fisheries Scientist<br>Dr. A. B. Kar, Fisheries Scientist | Meeting with Secretary and Joint Secretary, Dept. of Fisheries, Ministry of Agriculture and farmers Welfare on the issues related to IOTC and Stock Assessment. | New Delhi<br>5th–7th April 2019 |
| 2 | Dr. Sijo P. Varghese, Zonal Director | IOTC preparatory working group meeting held at Bay of Bengal Programme-IGO. | Chennai<br>15th–16th April 2019 |
| 3 | Shri Nashad M., Sr. Scientific Assistant | "International workshop on Social network of Animals in extreme environment of Antarctica with special reference to Penguins". | ZSI, Port Blair<br>22nd–23rd April 2019 |
| 4 | Dr. Sijo P. Varghese, Sr. Fisheries Scientist attended the | Meeting of the State Level Approval and Monitoring Committee for implementation of Blue Revolution schemes in Andaman & Nicobar Islands. | Chamber of Secretary (Fisheries), A & N Administration<br>23rd April 2019 |
| 5 | Dr. S. Ramachandran, Sr. Fisheries Scientist<br>Shri N. Unnikrishnan, Jr. Fisheries Scientist | 14th Meeting of Sectional Committee of Textile materials for Marine fishing. | CIFT, Kochi<br>25th April 2019 |
| 6 | Shri G. S. V. Sharma, Mech. Supervisor (Sr.) | Stake holder's meeting on usage of high speed boat engines. | CIFNET, Visakhapatnam<br>9th May 2019 |
| 7 | Shri Pratyush Das, Junior Fishing Gear Technologist<br>Dr. Dewanand E. Uikey, Sr. Scientific Assistant | Meeting with Shri K. P. Jayakumar, Nautical Advisor, Merchantile Marine Department, Kolkata. | Sinclair's, Port Blair<br>9th May 2019 |
| 8 | Dr. Sijo P. Varghese, Zonal Director | 3rd meeting of IOTC preparatory group meeting at Bay of Bengal Programme-IGO. | Chennai<br>9th-11th May 2019 |
| 9 | Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist | One-day workshop on "Role of S & T Institutions in the promotion of Entrepreneurship and sustainable Livelihood in the Rural Areas through Fisheries Sector" | NIRDPR, Hyderabad<br>14th May 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 10 | Shri C. Dhananjay Rao, Mech. Marine Engineer<br>Dr. A. B. Kar, Fisheries Scientist | Meeting with Deputy Chairman of Visakhapatnam Port Trust in connection with the infrastructure facilities at jetty no.6 of fishing harbour. | Visakhapatnam<br>14th May 2019 |
| 11 | Shri C. Dhananjay Rao, Mech. Marine Engineer | Inspection of the deep sea fishing vessel constructed by Shri D. Suryanarayana at M/s SKML Boat Builders along with an official of the Dept. of Fisheries, Andaman & Nicobar Administration. | Golla Veedhi, Vedapatasala, Visakhapatnam<br>25th May 2019 |
| 12 | Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist | Served as a member of selection committee meeting for selection of Young Professional II and Field assistant. | Coastal and Marine Biodiversity Centre, Airoli,<br>Navi Mumbai<br>29th May 2019 |
| 13 | Shri N. Unnikrishnan, Jr. Fisheries Scientist | Meeting to discuss about the US Marine Mammal Protection Act (MMPA). | MPEDA Head Office, Kochi<br>10th June 2019 |
| 14 | Dr. Sijo P. Varghese, Zonal Director | IOTC meeting. | Hyderabad<br>10th–21st June 2019 |
| 15 | Shri A. Siva, Sr. Scientific Assistant | National Seminar on FISHTECH-19 & Industry meet 2019. | Taloja,<br>Navi Mumbai<br>11th June 2019 |
| 16 | Shri A. Tiburtius, Zonal Director<br>Dr. Jeyachandra Dhas, Jr. Fisheries Scientist | 7th meeting of Project Management Council (PMC) on Ocean Observation System, SIBER & GEOTRACES under the Chairmanship of Secretary, MOES. | National Institute of Ocean Technology (NIOT), Chennai<br>19th June 2019 |
| 17 | Shri S. K. Pattnayak, Sr. Scientific Assistant | Stake holder's meeting on "Fisher friend mobile application" organized by Indian National Centre for Ocean Information Services and M.S. Swaminathan Research Foundation, Chennai. | Centre of Studies for Bay of Bengal, Andhra University, Visakhapatnam<br>27th June 2019 |
| 18 | Dr. Sijo P. Varghese, Zonal Director | 3rd Stake holder's meeting. | CMLRE, Kochi<br>1st–2nd July 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 19 | Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant | Nominated to act as an External examiner for II$^{nd}$ Semester Examination of B.F.Sc. (Fishery Science) 2018-19. | MAFSU, Nagpur 3$^{rd}$ – 4$^{th}$ July 2019 |
| 20 | Shri N. Unnikrishnan, Jr. Fisheries Scientist | 2$^{nd}$ meeting of Kerala State Fisheries Management Council (SFMC). | Directorate of Fisheries, Vikas Bhavan, Thiruvananthapuram 4$^{th}$ July 2019 |
| 21 | Dr. A. B. Kar, Fisheries Scientist | FAO workshop on "Best Practices to Prevent and Reduce Abandoned, Lost or Otherwise Discarded Fishing Gear". | Bali, Indonesia 8$^{th}$ – 11$^{th}$ July 2019 |
| 22 | Shri A. Siva, Sr. Scientific Assistant | IOTC 7$^{th}$ Working Party meeting on Temperate Tuna (WPTmT077). | National Research Institute of Far Seas Fisheries (NRIFSI), Shizhoka, Japan 23$^{rd}$ -26$^{th}$ July 2019 |
| 23 | Dr. S. K. Pattnayak, Sr. Scientific Assistant<br>Shri Shanawaz, Jr. Translation Officer | Seminar on *Harith Matshiki-2019* on the theme "Sustainability on Marine Fisheries - Opportunities and Challenges". | Regional Centre of CIFT, Visakhapatnam 30$^{th}$ July 2019 |
| 24 | Dr. A. B. Kar, Fisheries Scientist and<br>Shri G. V. A. Prasad, Jr. Fisheries Scientist | Stakeholders consultation on "Marine Fisheries Regulation Act Bill". | CMFRI, Visakhapatnam 9$^{th}$ August 2019 |
| 25 | Shri Dharamvir Singh, Mech. Marine Engineer | Meeting for implementation of Blue Revolution Scheme in Andaman and Nicobar Islands. | The chamber of the Director of Fisheries, Andaman and Nicobar Administration 14$^{th}$ August 2019 |
| 26 | Shri A. Tiburtius, Zonal Director<br>Dr. A. John Chembian, Jr. Fisheries Scientist<br>Shri Y. Tharumar, Sr. Scientific Assistant<br>Ms. Roshan Maria Peter, Sr. Scientific Assistant | 2$^{nd}$ & 3$^{rd}$ meeting on "The committee to work out the fleet plan for the Indian Exclusive Economic Zone (EEZ)". | BOBP-IGO, Chennai 20$^{th}$ August 2019 & 23$^{rd}$ September 2019 |
| 27 | Dr. S. K. Pattnayak, Sr. Scientific Assistant | Workshop on "Maritime Search and Rescue (M-SAR). | Andhra University, Visakhapatnam 27$^{th}$ August 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 28 | Dr. Sijo P. Varghese, Zonal Director | Stake holder - Consultation meeting under the chairmanship of the Secretary (Fisheries), Department of Fisheries, Ministry of Fisheries, Animal Husbandry and Dairying. | Krishi Bhawan, New Delhi<br>29th August 2019 |
| 29 | Shri K. Govindaraj, Zonal Director<br>Dr. A. B. Kar, Fisheries Scientist | Stake holders meeting being convened by the Hon'ble Union Minister of Fisheries, Govt. of India, Shri. Giriraj Singh during his visit to Visakhapatnam. | Novotel Hotel, Visakhapatnam<br>6th September 2019 |
| 30 | Dr. A. B. Kar, Fisheries Scientist<br>Dr. S. K. Pattnayak, Sr. Scientific Assistant | Interactive session with Myanmar Fisheries Development Team and had a discussion on status of Indian marine fisheries and other developmental issues related to marine fisheries. | Hotel Daspalla Executive, Visakhapatnam<br>7th September 2019 |
| 31 | Dr. Sijo P. Varghese, Zonal Director<br>Shri Pratyush Das, Junior Fishing Gear Technologist<br>Dr. Dewanand E. Uikey, Sr. Scientific Assistant<br>Shri Nashad M., Sr. Scientific Assistant | Conference on "Seaweeds and its potential aspects in Andaman and Nicobar Islands" hosted by the Directorate of Fisheries, Andaman and Nicobar Administration. | Conference Hall of Megapode Residency, Haddo<br>8th September 2019 |
| 32 | Shri D. Bhami Reddy, Mech. Marine Engineer | Physical verification of trawlers under DADF scheme "Conversion of trawlers into resource specific Deep Sea Fishing vessel". | Cuddalore, Tamil Nadu<br>19th - 20th August 2019<br>Nagapattinam and Karaikal , Tamil Nadu<br>23rd – 27th September 2019 |
| 33 | Dr. A. B. Kar, Fisheries Scientist | Inception Workshop on NFDB/ BOBP Project on Development of value chain model for Tuna Fisheries in Lakshadweep Islands. | Chennai<br>28th September 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 34 | Dr. A. John Chembian, Jr. Fisheries Scientist | 19th & 20th State Level Technical Committee and Administrative Committee (SLTC and SLAC) meeting convened under the scheme on "50% subsidy assistance to fishermen for procurement of new Tuna long liner cum gill netters". | Directorate of Fisheries, Government of Tamil Nadu, Nandanam, Chennai 3rd September 2019 30th October 2019 |
| 35 | Shri N. Unnikrishnan, Jr. Fisheries Scientist | Meeting on collection and filling of scientific information for uploading in the progress report on US Marine Mammal Protection Act (MMPA) Import Rule. | MPEDA Head Office, Kochi 5th September 2019 |
| 36 | Dr. Jeyachndra Dhas, Jr. Fisheries Scientist Dr. A. John Chembian, Jr. Fisheries Scientist | National Workshop to assist in preparation of Full Size project (FSP) of the Bay of Bengal Large Marine Ecosystem Project (NW-BOBLME). | Rain Tree Hotel, Mandaivelli, Chennai, Tamil Nadu 9th September 2019 |
| 37 | Shri Ashok S. Kadam, Fisheries Scientist | Meeting of experts and stakeholders of Maharashtra, organised by Department of Fisheries, Govt. of Maharashtra for discussion on the draft bill on National Marine Fisheries (Regulation and Management) 2019. | CIFE, Versova, Mumbai 13th September 2019 |
| 38 | Shri A. E. Ayoob, Jr. Fishing Gear Technologist | Consultative Workshop on Okhi special package for fisheries. | Center for Management Development, Thiruvananthapuram 25th September 2019 |
| 39 | Dr. Ansuman Das, Fisheries Scientist | Served as a Member in the selection committee for walk-in-interview to recruit two project personnel at the ICAR-NFGBR hatchery. | The Coastal and Marine Bio- diversity Centre, Airoli, Navi Mumbai 27th September 2019 |
| 40 | Dr. A. B. Kar, Fisheries Scientist Shri A. E. Ayoob, Jr. Fishing Gear Technologist | Inception Workshop on "Development of Fisheries in Lakshadweep". | Bay of Bengal Programme (BOBP), Chennai 28th September 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 41 | Shri N. Unnikrishnan, Jr. Fisheries Scientist | 1st meeting of the Expert Committee to consider the final application under financial assistance for "Certification and Chain of custody". | MPEDA Head Quarters, Kochi 14th October 2019 |
| 42 | Shri. O.T. Manoj Kumar, Service Engineer (Mech.) | Expert Committee meeting of MPEDA scheme on satellite based VMS. | MPEDA Headquarters, Kochi 14th October 2019 |
| 43 | Dr. Sijo P. Varghese, Zonal Director<br>Shri Nashad M., Sr. Scientific Assistant | Stakeholder consultation meeting to discuss on draft "National Marine Fisheries (Regulation and Management) Bill-2019 and draft "Aquatic Animal Health Management Bill-2019". | Directorate of Fisheries, Andaman and Nicobar Administration 14th October 2019 |
| 44 | Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist | 3rd meeting of Central Approval and Monitoring Committee (CAMC). | MoFAH&D, New Delhi 17th October 2019 |
| 45 | Dr. Sijo P. Varghese, Zonal Director | 10th Working Party on Methods (WPM) and 21st Working Party on Tropical Tunas (WPTT21). | Donostia-San Sebastian, Spain 17th-19th and 21st- 24th October 2019 |
| 46 | Dr. Mahesh Kumar Farejiya, Dy. Director General (Engineering) | Conference on Fishing Vessel Safety and Illegal, Unreported and Unregulated (IUU) fishing organized by the International Maritime Organization (IMO). | Torremolinos, Malaga, Spain 21st-23rd October 2019 |
| 47 | Dr. S. Ramachandran, Sr. Fisheries Scientist<br>Shri N. Unnikrishnan, Jr. Fisheries Scientist | 1st meeting of Technical Committee to review the duration of fishing ban period. | CMFRI, Kochi 24th October 2019 |
| 48 | Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist | Meeting of the Task Force on Fisheries Subsidies. | MoFAH&D, New Delhi 28th October 2019 |
| 49 | Shri Solly Solomon, Sr. Scientific Assistant | Workshop/ Seminar on "Refinement of Marine Fisheries Management in Goa State" organised by the Marine Products Export Development Authority (MPEDA), Panaji, Goa. | Directorate of Art and Culture, Patto, Panaji, Goa 30 th October 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 50 | Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist<br>Shri Ashok S. Kadam, Fisheries Scientist<br>Shri A. Siva, Sr. Scientific Assistant<br>Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant | Meeting of the user-interaction workshop with a special reference to the "GEMINI" of INCOIS, Hyderabad in collaboration with Mumbai Research Centre of CMFRI and G. M. Vedak College of Science, Tala, Raigad. | CMFRI, Mumbai<br>15th November 2019 |
| 51 | Dr. Mahesh Kumar Farejiya, Dy. Director General (Engineering)<br>Shri S. K. Jaiswal, Mech. Marine Engineer<br>Shri Ashok S. Kadam, Fisheries Scientist<br>Shri B. Satheesh Kumar, Assistant Engineer<br>Shri Rahulkumar B. Tailor, Sr. Scientific Assistant<br>Shri Rajendra Dokare, Mech. Supervisor (Sr.)<br>Shri Gopal Thule, Superintendant<br>Shri B. C. Sudeesh, Carpenter | Participated in Exhibition "Agrovision". | Nagpur<br>22nd -25th November 2019 |
| 52 | Dr. A. John Chembian, Jr. Fisheries Scientist | 1st level Consultative meeting on the Research dissemination of technology & awareness programme to the fishermen of Inland and Marine sector. | Directorate of Fisheries, Government of Tamil Nadu, Nandanam, Chennai<br>27th November 2019 |
| 53 | Shri D. Bhami Reddy, Mech. Marine Engineer | Physical inspection of conversion of demersal trawlers into resource specific deep sea fishing vessels under the NFDB, Hyderabad sponsored project. | Tuticorin and Mandapam, Tamil Nadu<br>27th – 28th November 2019 |
| 54 | Dr. L. Ramalingam, Dy. Director General (Fy.)<br>Shri D. K. Gulati, Zonal Director<br>Shri A. Tiburtius, Zonal Director<br>Dr. Sijo P Varghese, Zonal Director<br>Shri N. V. Ramana Murthy, System Analyst<br>Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist<br>Dr. S. Ramachandran, Sr. Fisheries Scientist<br>Dr. S. K. Dwivedi, Fisheries scientist<br>Dr. Ansuman Das, Fisheries Scientist<br>Dr. A. B. Kar, Fisheries Scientist<br>Shri Ashok S. Kadam, Fisheries Scientist<br>Dr. A. John Chembian, Jr. Fisheries Scientist | Scientific meeting on "The utilization of scientific data generated by FSI vessels" under the Chairmanship of Shri Mukesh, Joint Director (Statistics) from the Department of Fisheries, New Delhi. | FSI Headquarters, Mumbai<br>28th – 29th November 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| | Shri Ch. Bhaskar, Programmer<br>Shri Ashish Kumar, Programmer<br>Shri A. V. Tamhane, Sr. Scientific Assistant<br>Shri A. Siva, Sr. Scientific Assistant<br>Dr. Rajashree B. Sanadi, Sr. Scientific Assistant<br>Shri Rahulkumar B. Tailor, Sr. Scientific Assistant<br>Shri Swapnil S. Shirke, Sr. Scientific Assistant | | |
| 55 | Shri Y. Tharumar, Sr. Scientific Assistant | 21st State Level Administrative Committee (SLAC) meeting. | Directorate of Fisheries, Government of Tamil Nadu, Nandanam, Chennai<br>29th November 2019 |
| 56 | Dr. Sijo P. Varghese, Zonal Director | 22nd Scientific Committee (SC) meeting of the Indian Ocean Tuna Commission (IOTC). | Karachi, Pakistan<br>2nd-6th December 2019 |
| 57 | Dr. H. D. Pradeep, Fisheries Scientist | Awareness programme under the ‘‘Marine Fisheries Improvement Project‘‘ organised by Asian Fisheries Socitey, Indian Branch, Mangaluru, Karnataka in association with Director of Fisheries, Dept. of Fisheries, Govt. of Goa. | Vasco Fishing Jetty, Khariwada, Vasco-da-Gama, Goa<br>10th December 2019 |
| 58 | Shri K. Govindaraj, Zonal Director<br>Shri A. Tiburtius, Zonal Director<br>Dr. S. Ramachandran, Sr. Fisheries Scientist<br>Dr. H. D. Pradeep, Fisheries Scientist | National Conference on Fisheries & Aquaculture “Harnessing the Untapped Potential of Fisheries and Aquaculture“. | Shangri-La‘s-Eros Hotel, New Delhi<br>13th December 2019 |
| 59 | Shri Solly Solomon, Sr. Scientific Assistant | Conference on MARICON, 2019. | School of Marine Science Cochin University of Science & Technology, Cochin, Kerala<br>16th – 20th December 2019 |
| 60 | Dr. Sijo P. Varghese, Zonal Director | Indian Ocean Tuna Commission (IOTC) Scientific Committee meeting. | Karachi, Pakistan<br>26th December 2019 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 61 | Shri Raju S. Nagpure, Sr. Scientific Assistant<br>Shri Manoj Valvaikar, Machinist | Meeting with the Chairman, Kadamba Transport Corporation Ltd., Goa.. | Vasco-Da- Gama<br>30th December 2019 |
| 62 | Dr. A. John Chembian, Jr. Fisheries Scientist | Awareness programme on "Responsible fishing and Banned Fishing Net" conducted by Department of Fisheries, Government of Tamil Nadu. | Cuddalore, Tamil Nadu<br>8th January 2020 |
| 63 | Shri. A. Tiburtius, Zonal Director | 22nd State Level Administrative Committee (SLAC) meeting. | Directorate of Fisheries, Government of Tamil Nadu, Nandanam, Chennai<br>23rd January 2020 |
| 64 | Shri. A. Tiburtius, Zonal Director<br>Shri Y. Tharumar, Sr. Scientific Assistant | 9th State Level Technical Committee (SLTC) meeting. | Directorate of Fisheries, Government of Tamil Nadu, Nandanam, Chennai<br>23rd January 2020 |
| 65 | Shri Raju S. Nagpure, Sr. Scientific Assistant<br>Shri Manoj Valvaikar, Machinist | Meeting with Shri Jose Luies Carlos Almida, MLA Vasco-Da-Gama contituency regarding regarding the promotion of acquaculter in different fresh water lakes in Vasco. | Office of the Dy. Collector & Sub-Divisional Magistrate, Vasco-da-Gama, Goa<br>28th January 2020 |
| 66 | Dr. A. B. Kar, Fisheries Scientist and<br>Shri M. Govinda Rao, Radio Telephone Operator | Attended the demonstration of the harvest of cage farmed Indian pompano. | CMFRI, Visakhapatnam<br>28th January 2020 |
| 67 | Dr. H. D. Pradeep, Fisheries Scientist | Meeting with Hon'ble Minister of Fisheries to discuss organising of "Aqua Goa Mega Fish Festival 2019-20". | Chamber of the Minister, Goa<br>4th February 2020 |
| 68 | Dr. Sijo P. Varghese, Zonal Director | Consultative workshop on threatened and protected Elasmobranchs of India - conservation status and policy needs. | CMFRI, Kochi<br>4th February 2020 |
| 69 | Shri N. Unnikrishnan, Jr. Fisheries Scientist | Attended the meeting with Mr. Serge Seura, H. E., the Ambassador and officials of French team. | KUFOS, Kochi<br>5th February 2020 |

| Sl No. | Name/ Designation | Events | Venue/ Date |
|---|---|---|---|
| 70 | Dr. Sijo P. Varghese, Zonal Director<br>Dr. S. Ramachandran, Sr. Fisheries Scientist | Meeting to discuss the IOTC matters. | CMFRI, Kochi<br>5th–6th February 2020 |
| 71 | Dr. H. D. Pradeep, Fisheries Scientist | Meeting regarding conducting ‘‘57th National Maritime day Celebration | MMD, Headland Sada. Mormugao, Goa<br>6th February 2020 |
| 72 | Dr. Sijo P. Varghese, Zonal Director<br>Dr. S. Ramachandran, Sr. Fisheries Scientist | Working Group meeting on fish ban. | CMFRI, Kochi<br>7th,15th and 22nd February 2020 |
| 73 | Dr. A. B. Kar, Fisheries Scientist and<br>Shri G. V. A. Prasad, Jr. Fisheries Scientist | Stake holders’ consultation meeting on “National Policy on Post Harvest Processing and Marketing of Fish and Fishery Products”. | CIFT, Visakhapatnam.<br>18th February 2020 |
| 74 | Dr. Sijo P. Varghese, Zonal Director | Meeting to finalize the project proposal on stock delineation of yellowfin tuna. | CMFRI, Kochi<br>24th February 2020 |
| 75 | Shri N. Unnikrishnan, Jr. Fisheries Scientist | 3rd meeting of Expert Committee on Assistance for Certification of Fishery and Chain of Custody/ Assistance for installation of Satellite based VMS. | MPEDA Head Quarters, Kochi<br>4th March 2020 |
| 76 | Dr. H. D. Pradeep, Fisheries Scientist | International Symposium on “Fish and Fisheries“. | PSGR, Krishnammal College for Women, Coimbatore<br>5th March 2020 |
| 77 | Shri Nashad M., Sr. Scientific Assistant | Delivered a lecture on “Marine fishery resources of A & N Islands” during foundation training programme on Basic Fisheries and Aquaculture for the newly appointed Fisheries Field Assistants. | Conference hall of Dept. of Fisheries, A & N Administration<br>16th March 2020 |
| 78 | Shri Dharamvir Singh, Mech. Marine Engineer | Meeting to discuss on uniform fishing ban in A & N Islands. | Chamber of Director of Fisheries, A & N Administration<br>19th March 2020 |
| 79 | Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant | VISHWANATH SUMMIT an online state level conference on “Management of Aquatic Health and Resources of Konkan, with Special Emphasis on Sindhudurg”. | Online<br>29th March 2020 |

# 14. FLEET MAINTENANCE

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

| Name of the Vessel | Name of the yard | Period of Docking & Afloat Repairs | Work supervised |
|---|---|---|---|
| *MFV Matsya Vrushti* | M/s CSL, Mumbai Ship Repair Unit | Docked: 18.03.2020<br>Undocked: Dry docking was in progress. | Service Engg (Mech)<br>Chief Engineer Gr.I<br>Skipper |
| *MFV Matsya Nireekshani* | M/s CSL, Cochin | Docked: 18.03.2020<br>Undocked: Dry docking was in progress. | Service Engg (Mech)<br>Chief Engineer Gr.I<br>Skipper |
| *MFV Sagarika* | M/s GSL, Goa | Docked: 27.06.2019<br>Undocked: Dry docking was in progress. | Chief Engineer Gr.I<br>Skipper<br>Mech. Supervisor(Sr.)<br>Mech. Marine Engineer |
| *MFV Samudrika* | M/s. HSL, Visakhapatnam | Docked: 27.09.2019 to 20.01.2020 | Mech. Marine Engineer<br>Chief Engineer Gr.I<br>Skipper |
| *MFV Matsya Shikari* | M/s. HSL, Visakhapatnam | Docked: 03.10.2019<br>Undocked: 07.01.2020 | Mech. Marine Engineer<br>Chief Engineer Gr.I<br>Skipper<br>Mech. Supervisor(Sr.) |

## B. Major Overhauling of the Machinery & Equipment

| Name of the vessel | Machinery Overhauled | Period of the Overhauling | Agency | Supervision |
|---|---|---|---|---|
| *MFV Yellow Fin* | Auxiliary Engine-I | 25.05.2019 to 01.07.2019 | Dept. Workshop | Chief Engineer, Gr-I & Mech. Supervisor (Sr.) |
| *MFV Lavanika* | Main Engine | 20.08.2019 to 17.10.2019 | Dept. Workshop | Service Engineer (M), Mech. Supervisor (Sr.), Fitter, Mechanic |
| *MFV Matsya Drushti* | Harbour Engine | 30.12.2019 to 10.01.2020 | Dept. Workshop | Mech. Supervisor (Sr), Chief Engineer, Gr-II |
| *MFV Blue Marlin* | Auxiliary Engine-II | 25.06.2019 to 11.07.2019 | Dept. Workshop | Mech. Marine Engineer, Chief Engineer Gr-I, M.S.(Sr.), Machinist, Greaser Gr-I |
| | Main Engine | 07.10.2019 to 17.11.2019 | Dept. Workshop | Mech. Marine Engineer, Chief Engineer Gr-I, M.S.(Sr.), Machinist, Greaser Gr-I |

## C. Acquisition of New Vessels:

The proposal for acquisition of new vessels is under consideration of the Ministry of Fisheries, Animal Husbandry & Dairying, New Delhi.

## D. Import of spare parts:

Spare parts worth of Rs. 300.00 lakhs have been imported towards the maintenance of the vessels during the year 2019-20 as per the statement furnished below.

| Sl. No. | Name of the vessel | Name of the Machinery/ Equipment | Name of the supplier | Cost of the spare parts including customs duty etc. (₹ ) |
|---|---|---|---|---|
| 1. | *MFV Matsya Nireekshani* | MAN B&W Engine (Propeller shaft, Stern tube) | M/s. Man Energy Solution, Denmark | 48,77,229 |
| 2. | *MFV Matsya Varshini* | MAN B&W Engine (Propeller shaft, Stern tube) | M/s. Man Energy Solution, Denmark | 13,66,661 |
| 3. | *MFV Samudrika* | Auxiliary Engine | M/s. Yanmar Engineering Co. Ltd., Japan | 21,64,859 |
| 4. | *MFV Yellow Fin* | Niigata Main Engine | M/s. Neptunus Global Trading FZE, UAE. | 80,15,115 |
| 4. | *MFV Yellow Fin* | Niigata Auxiliary Engine | M/s. Neptunus Global Trading FZE, UAE. | 52,20,635 |
| 5. | *MFV Yellow Fin* | Air Cooler of Auxiliary Engine | M/s. Neptunus Global Trading FZE, UAE. | 4,95,275 |
| 6. | *MFV Samudrika MFV Sagarika* | Amplifier | M/s. Daikai Engineering Pte Ltd., Singapore | 1,88,852 |
| 7. | *Matsya Matsya Shikari* | Propeller spare parts | M/s. Man Energy Solution, Denmark | 23,57,101 |
| 8. | *MFV Blue Marlin* | Chemical Light Stick | M/s. Dong K Wang International Corp., Busan, Korea | 96,691 |
| 9. | *MFV Samudrika* | Propeller shaft | M/s. Daikai Engineering Pte Ltd., Singapore | 5,10,101 |
| 10. | *MFV Samudrika* | Niigata Marine Gear | M/s. Neptunus Global Trading FZE, UAE. | 11,45,422 |
| **Total (₹)** | | | | **2,64,37,941** |

# 15. INFRASTRUCTURE FACILITIES

## Performance of Marine Engineering Division (MED), Kochi

The details of vessels hauled up in the Slip-way and Servicing of Life Raft for the year 2019-20 are given below.

| Sl. No. | Month | No. of Vessel Hauled-up | Amount realized (₹) | No. of ILR/HRU Services | Amount realized (₹) |
|---|---|---|---|---|---|
| 1. | April 2019 | 05 | 4,47,787 | 03 | 22,923 |
| 2. | May 2019 | 06 | 8,77,299 | 05<br>03 | 2,00,152<br>30,261 |
| 3. | June 2019 | 04 | 5,01,543 | 05<br>(Utility) | 1,57,600<br>48,635 |
| 4. | July 2019 | 07 | 5,24,975 | 13<br>07<br>(Utility) | 4,39,657<br>48,017<br>1,39,383 |
| 5. | August 2019 | 08 | 6,68,562 | 05<br>09<br>(Utility) | 71,232<br>2,78,590<br>2,07,227 |
| 6. | September 2019 | 07 | 4,77,577 | -<br>(Utility) | <br>1,88,471 |
| 7. | October 2019 | 05 | 4,77,577 | (Utility) | 2,825 |
| 8. | November 2019 | 05 | 5,37,366 | (Utility) | 14,000 |
| 12. | March 2020 | 14 | 3,24,694 | 02<br>(Utility) | 1,12,583<br>63,024 |
| | **Total** | **61** | **48,37,380** | **23**<br>**19**<br>**(Utility charges)** | **10,04,147**<br>**3,56,868**<br>**6,63,565** |

# 16. ADMINISTRATION AND FINANCE

## 16.1 Sanctioned posts

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

| Group | Category | No. of Posts | | |
|---|---|---|---|---|
| | | Filled | Vacant | Total |
| A | Scientific | 12 | 13 | 25 |
| | Technical | 9 | 10 | 19 |
| | Administrative | 1 | - | 01 |
| B | Scientific | 23 | 11 | 34 |
| | Technical | 25 | 16 | 41 |
| | Administrative | 15 | 35 | 50 |
| | Floating staff | 24 | 70 | 94 |
| C | Scientific | - | 01 | 01 |
| | Technical | 71 | 84 | 155 |
| | Administrative | 79 | 60 | 139 |
| | Floating staff | 40 | 144 | 184 |
| | **Total** | **299** | **444** | **743** |

## 16.2 Officers in different stations

Name and designation of the officers of the Institutes as on 31st March 2020 are given below:

| **HEADQUARTERS** | | |
|---|---|---|
| Sl. No. | Name | Designation |
| 1. | Dr. L. Ramalingam | Deputy Director General (Fisheries)/ Director General (I/C) |
| 2. | Dr. M.K. Farejiya | Deputy Director General (Engg.) |
| 3. | Shri S. K. Jaiswal | Mech. Marine Engineer |
| 4. | Shri N.V. Ramanamurthy | System Analyst |
| 5. | Dr. Vinodkumar Mudumala | Sr. Fisheries Scientist |
| 6. | Dr. Ansuman Das | Fisheries Scientist |
| 7. | Smt. M. K. Sreemathi | Sr. Administrative Officer |
| 8. | Shri Chittajallu Bhaskar | Programmer |
| 9. | Shri Bapu M. Raut | Programmer |
| 10. | Shri Ashish Kumar | Programmer |
| 11. | Shri Pradeep Kumar Shukla | Asst. Accounts Officer |
| **MUMBAI BASE** | | |
| Sl. No. | Name | Designation |
| 1. | Shri D. K. Gulati | Zonal Director |
| 2. | Shri B. Balanayak | Service Engineer (Mech.) |
| 3. | Dr. S. K. Dwivedi | Fisheries Scientist |
| 4. | Shri A. S. Kadam | Fisheries Scientist |
| 5. | Shri Jacob Thomas | Jr. Fisheries Scientist |

| MORMUGAO BASE | | |
|---|---|---|
| Sl. No. | Name | Designation |
| 1. | Dr. H. D Pradeep | Fisheries Scientist |
| **COCHIN BASE** | | |
| **Sl. No.** | **Name** | **Designation** |
| 1. | Dr. Sijo P. Varghese | Zonal Director |
| 2. | Dr. S. Ramachandran | Sr. Fisheries Scientist |
| 3. | Shri Manoj Kumar O.T. | Service Engineer (Mech.) |
| 4. | Shri A.E. Ayoob | Fishing Gear Technologist |
| 5. | Shri N. Unnikrishnan | Jr. Fisheries Scientist |
| 6. | Shri B. Satheesh Kumar | Assistant Engineer (workshop) |
| **CHENNAI BASE** | | |
| Sl. No. | Name | Designation |
| 1. | Shri A.Tiburtius | Zonal Director |
| 2. | Dr. Jaya Chandra Dhas | Jr. Fisheries Scientist |
| 3. | Dr. A. John Chembian | Jr. Fisheries Scientist |
| 4. | Dr. Manaskumar Sinha | Jr. Fisheries Scientist |
| **VISAKHAPATNAM BASE** | | |
| Sl. No. | Name | Designation |
| 1. | Shri D. Bhami Reddy | Mech. Marine Engineer |
| 2. | Dr Annada Bhusan Kar | Fisheries Scientist |
| 3. | Shri G. V. A. Prasad | Jr. Fisheries Scientist |
| **PORT BLAIR BASE** | | |
| Sl. No. | Name | Designation |
| 1. | Shri Dharamvir Singh | Mech. Marine Engineer |

## 16.3 Budget and Accounts

The details of the Budget Grant and Expenditure of the Institute during the year 2019-20

(₹ In Lakhs)

| Particulars | Budget Grant | Actual Expenditure |
|---|---|---|
| **Plan** | | |
| Capital | 611.00 | 215.53 |
| **Sub-Total** | **611.00** | **215.53** |
| **Non-Plan** | | |
| Revenue | 8489.27 | 8216.77 |
| Capital | - | - |
| **Sub-Total** | **8489.27** | **8216.77** |
| **Grand Total** | **9100.27** | **8432.30** |

## 16.4 Transfers

The transfers effected during the year

| Name | Designation | Base/ HQs | |
|---|---|---|---|
| | | From | To |
| Shri D. K. Gulati | Zonal Director | Cochin | Mumbai |
| Dr. Sijo P Varghese | Zonal Director | Port Blair | Cochin |
| Shri S. K. Jaiswal | Mechanical Marine Engineer | Mormugao | Mumbai (HQs) |
| Shri D. Bhami Reddy | Mechanical Marine Engineer | Chennai | Visakhapatnam |
| Smt. Rajashree Mendon | Office Superintendent | Mumbai | Mumbai (HQs) |
| Shri. Santosh Raut | Marine Electrician | Mumbai | Port Blair |
| Shri S. Subramaniyan | Marine Electrician | Chennai | Mumbai |
| Shri K. S. Ranjith | Lower Division Clerk | Cochin | Port Blair |
| Shri K. S. Joseph Paul | Skipper | Chennai | Cochin |
| Shri S. Subramaniyam | Marine Electrician | Chennai | Mumbai |
| Shri. V. Muthu Kumar | Marine Electrician | Vishakhapatnam | Chennai |
| Shri C. Dhananjay Rao | Mechanical Marine Engineer | Vishakhapatnam | Chennai |
| Shri S. Pasha | Mechanical Supervisor (Sr.) | Visakhapatnam | Port Blair |
| Shri G. S. V. Sharma | Mechanical Supervisor (Sr.) | Port Blair | Visakhapatnam |
| Shri A. P. Udayappan | Skipper | Visakhapatnam | Port Blair |
| Shri Chandrasen | Bosun ( C ) | Port Blair | Visakhapatnam |
| Shri A. Lawrance | Chief Engineer Gr.II | Port Blair | Visakhapatnam |
| Shri R. Y. Naidu | Marine Electrician | Port Blair | Visakhapatnam |
| Shri M. V. Prasad | Chief Engineer Gr.II | Visakhapatnam | Port Blair |
| Shri G. S. Wellington | Chief Engineer Gr.II | Visakhapatnam | Chennai |
| Shri Pratyush Das | Jr. Fishing Gear Technologist | Port Blair | Visakhapatnam |
| Shri Boopathi | Bosun (C) | Port Blair | Chennai |

## 16.5 Promotions

The promotions effected during the year

| Name | Designation | | Base/ HQs | Date |
|---|---|---|---|---|
| | From | To | | |
| Shri K. Govindaraj | Sr. Fisheries Scientist | Zonal Director | Visakhapatnam | 10.05.2019 |
| Shri A. Tiburtius | Sr. Fisheries Scientist | Zonal Director | Chennai | 10.05.2019 |
| Dr. Sijo P. Varghese | Sr. Fisheries Scientist | Zonal Director | Port Blair | 13.05.2019 |
| Shri T. V. Chadrashekar | Lower Division Clerk | Upper Division Clerk | Chennai | 02.12.2019 |
| Shri A. E. Ayoob | Junior Fishing Gear Technologist | Fishing Gear Technologist | Cochin | 20.01.2020 |

## 16.6 Grant of Modified Assurance Career Progression (MACP)

A total of 19 staff were granted MACP and 5 staff were granted ACP during the year.

## 16.7 Retirements

The details of retirements of officers/ staff during the year

| Name | Designation | Base/HQs | Superannuation/ Voluntary | Date |
|---|---|---|---|---|
| Shri M. V. Ajith Kumar | Chief Engineer Gr.II | Visakhapatnam | Superannuation | 30.04.2019 |
| Shri K. N. Adrayan | Asst. Operator | Cochin | Superannuation | 31.05.2019 |
| Shri V. Rajan | Sr. Deckhand-cum-Cook | Cochin | Superannuation | 31.05.2019 |
| Shri J. Raj | Sr. Deckhand | Chennai | Superannuation | 30.06.2019 |
| Shri V. P. Sharma | Mechanical Supervisor (Sr.) | Mormugao | Superannuation | 31.07.2019 |
| Shri C. K. Antony | Slipway worker Gr.II | Cochin | Superannuation | 31.07.2019 |
| Smt. G. Ramalakshmi | Muti-Tasking Staff | Chennai | Superannuation | 31.07.2019 |
| Shri N. Jagannadh | Jr. Fisheries Scientist | Visakhapatnam | Superannuation | 31.07.2019 |
| Shri R. Rosary | Netmender | Chennai | Superannuation | 30.09.2019 |
| Shri K. A. Joshi | Netmender | Cochin | Superannuation | 31.10.2019 |
| Shri K. Govindaraj | Zonal Director | Visakhapatnam | Superannuation | 29.02.2020 |

## 16.8 Deputation

Shri T. Jayaprakash, UDC relieved w.e.f. 03.07.2019 AN from FSI (HQs), Mumbai on his selection to the post of UDC on Deputation basis in Unique Identification Authority of India, Regional Office, Mumbai.

Shri P. Chalapati Rao, Statistician relieved w.e.f. 10.07.2019 AN from FSI (HQs), Mumbai on his selection to the post of Sr. Executive (Technical) on Deputation basis in National Fisheries Development Board, Hyderabad.

## 16.9 Resignation/ Relieved

| Name | Designation | Base/HQs | Resignation | Date |
|---|---|---|---|---|
| Shri Ankit Kumar | Muti Tasking Staff | Mumbai (HQs) | Technical Resignation | 27.06.2019 |
| Shri Narendra S. Yadav | Lower Division Clerk | Visakhapatnam | Technical Resignation | 08.11.2019 |

## 16.10 Obituary

Shri P. Tamilarasan, Fisheries Scientist, Cochin Base of FSI passed away on 28.04.2019. He was working with Fishery survey of India since 15.05.1992. The Director General and staff of FSI mourned his untimely death on 29.04.2019 at a condolence meeting held at FSI (HQs), Mumbai.

# 17. TRAINING TO FSI STAFF

**The following officers and staff attended various training programmes during the year 2019-20**

| Name | Designation | Subject/ Institute/ Place/ Period |
|---|---|---|
| Shri Nashad M. | Senior Scientific Assistant | "Export oriented Fisheries and Aquaculture in Andaman and Nicobar Islands" hosted by the Directorate of Fisheries, A & N Administration at FSI, Port Blair 27th-28th May 2019 |
| Shri Amal Haldar<br>Shri Sumanth Singh | Upper Division Clerk<br>Multi Tasking Staff | "Uploading of NPS data" at RTC, Mumbai 17th June 2019 |
| Smt. Rajashree Mendon<br>Shri Hemant | Office Superintendent<br>Stenographer | "Seniority and Promotion" at RTC, Mumbai 24th to 26th June 2019 |
| Shri Dharmvir Singh<br>Ms. Anita M. Ekka | Mech. Marine Engineer<br>Upper Division Clerk | "CS (MA) & CGHS Rules" at RTC, Chennai 10th -11th July 2019 |
| Shri Dharmvir Singh<br>Ms. Anita M. Ekka | Mech. Marine Engineer<br>Upper Division Clerk | "Leave/T.A., D.A. & LTC Rules" at Chennai 22nd July 2019 |
| Dr. Sijo P. Varghese<br>Shri Dharmvir Singh | Zonal Director<br>Mech. Marine Engineer | "Government E-Procurement and E-Tendering process" at Chennai 6th–7th August 2019 |
| Shri A. Tiburtius<br>Shri B. Suresh Kumar<br>Smt R. Ramalakshmi | Zonal Director<br>Upper Division Clerk<br>Upper Division Clerk | "Pay Fixation & MACP" at RTC Chennai 26th August 2019 |
| Dr. Sijo P. Varghese<br>Shri Dharmvir Singh | Zonal Director<br>Mech. Marine Engineer | "Functions of DDOs in PFMS-EIS & DDO Module" at Chennai 17th–18th September 2019 |
| Shri Pradeep Raghav<br>Shri Sandeep Kumar Kushwaha | Lower Division Clerk /Hindi typist<br>Lower Division Clerk /Hindi typist | Training on PFMS, EIS, Pension and GPF modules at the Institute of Government Accounts and Finance, Rajaji Bhavan, Chennai 14th-15th November 2019 |
| Smt. R. Sreeja<br>Smt. Sheeba K.S<br>Smt. Sajina P.M | Upper Division Clerk<br>Upper Division Clerk<br>Multi Tasking Staff | Training programme on Government e-Marketing (GeM) at the Institute of Government Accounts and Finance, Rajaji Bhavan, Chennai 16th December 2019 |
| Dr. A. B. Kar | Fisheries Scientist | "Regional Training Course for Capacity Enhancement on International Fisheries Agreement, Treaties and Conventions", organised by Bay of Bengal Programme-Inter Governmental Organisation, Chennai, 17th-22nd December 2019 |

# 18. OFFICIAL LANGUAGE ACTIVITIES

## 18.1 Hindi workshops and seminars

### Mumbai (HQs)

A one day Hindi Workshop was organized on 19th June 2019 at FSI (HQs), Mumbai in order to encourage the staff members to work in Hindi. Dr. Motilal Gupta, Asstt. Director, Hindi Teaching Scheme, Navi Mumbai was the subject expert for the workshop. He delivered a lecture on "General Hindi". Altogether 20 staff members actively participated in the workshop.

*Hindi workshop held on 20.09.2019*

Second Hindi workshop was organized on 20th September 2019 in FSI (HQs), Mumbai to encourage the use of Hindi in Official work. Dr. Sunita Yadav, Ex-Deputy Director, Regional Implementation Office (Western Region) was invited to deliver lecture on "Sentence Pattern of Official Hindi and its use in official work". She also gave some Hands on training in translation. 20 staff members actively participated in the workshop and benefited.

Third Hindi workshop was organized on 19th December 2019 at FSI (HQ's), Mumbai. Shri Vinod Kumar Sharma, Asst. Director, Hindi Teaching Scheme, Navi Mumbai was invited as a Chief Guest to deliver a lecture on "Hindi Noting and Drafting". Altogether 20 staff members participated in the workshop.

### Mumbai Base

A one day Hindi workshop on "***Filling of quarterly progress report proforma***" was organized on 3rd May 2019. Smt. Meera Vellan Rajiv, Jr. Translator, Fishery Survey of India (HQs), Mumbai was the subject specialist. Shri B. Balanayak Service Engineer (Mech.) and Chairman of the Hindi Committee welcomed the subject Specialist and all the participants. All the officers and staff members actively participated the workshop.

*Hindi workshop held on 03.05.2019*

*Hindi workshop held on 21.09.2019*

Second Hindi workshop was organised on 21st September 2019. Shri Naresh Kumar, Assistant Director, Central Translation Bureau, New Delhi was the subject specialist. The topic of the workshop was "***Samanya Patrachar***". The workshop was attended by 18 staff members and 04 officers of the Base.

Third Hindi workshop was organized on 25th November 2019 on the topic "***Unicode***". Dr. Vishwanath Jha, Dy. Director (West), Hindi Shikshan Yojana, Belapur, Navi Mumbai was the subject specialist. All the officers and staff members actively attended the workshop.

Fourth Hindi worshop was organised on 26th February 2020 on "***Practical Unicode***". Dr. Vishwanath Jha, Dy. Director (West), Hindi Shikshan Yojana, Belapur, Navi Mumbai was the subject specialist. All the officers and staff members actively attended the workshop.

*Hindi workshop held on 25.11.2019*

*Hindi workshop held on 26.02.2020*

### Mormugao Base

A Hindi workshop was organized by Mormugao Base on "***Language Diversity in India and Official Language Hindi***" on 26th September 2019 for the benefit of officers and staff members of the Base. Dr. Subrata Mishra, Freelance Hindi Writer, Goa was the resource person during the workshop.

Second Hindi workshop was organized on **"*Hindi typing techniques on computer*"** on 7th December 2019 for the benefit of officers and staff members of the Base. Shri Sougat Kumar Palit, Hindi Assistant, Goa Shipyard Ltd., Vasco, Goa was the resource person on this occasion.

### Cochin Base

A Hindi workshop was organized at Cochin Base on 21st June 2019. Smt. Leena T. P, Jr. Translation Officer delivered a lecture on Administrative noting and drafting. Fifteen employees attended the workshop.

Second Hindi workshop was conducted on 21st September 2019. Shri Premchand, Hindi Officer from CMLRI trained the staffs on Hindi grammar. Twenty Staff members participated in the workshop.

Third Hindi workshop was conducted on 28th December 2019. Smt. Leena T. P., Jr. Translation Officer delivered a lecture on Hindi terminology. About 20 employees attended the workshop.

### Visakhapatnam Base

A Hindi Workshop was organized at Visakhapatnam Base on 15th June 2019. Smt. G. Deepthi. Jr. Hindi Translator, Income Tax Department, Visakhapatnam was the resource person on this occasion. She deliberated on the importance of Hindi as official language as well as Hindi translation procedure in detail. The officers and staff members of the Base attended the workshop.

Second Hindi workshop was conducted on 12th September 2019. Shri. Shankar Dora, Hindi Professor, Hindi Teaching Scheme, Visakhapatnam was the resource person on the occasion. He deliberated on various aspects of Hindi vocabulary and its usage.

Third Hindi workshop was conducted on 9th December 2019. Shri Upendranath Patra, Senior Hindi Translator, Naval Base Post, Visakhapatnam was the resource person on this occasion. He deliberated on various aspects of Hindi as official language, technical terminology and also day to day use of Hindi in Govt. Offices.

Fourth Hindi workshop was conducted by the Base on 29th February 2020. Dr. Rita Trivedi, Hindi Professor, Hindi Teaching Scheme, Visakhapatnam was the resource person on the occasion. She deliberated on importance of Hindi as official language and its implementation.


*Hindi Workshop at Visakhapatnam Base of FSI on 15.06.2019 & 09.12.2019*

### Port Blair Base

A one day Hindi workshop was organized by Port Blair Base on 29th June 2019, wherein, Shri Subhrajit Das, Stenographer Gr.II from the Base office was the resource person. He delivered lecture on the topic 'Preparing Hindi Quarterly Report'.

Second Hindi workshop was organised by the Base on 23rd September 2019, wherein Shri J. Anand Raj, Hindi Typing Instructor, Secretariat, Port Blair was the resource persons. He delivered lecture on "Origin of official language and its implementation" and taught the participants about use of Hindi in day to day activities in the office.

## 18.2 Hindi Day and Hindi Fortnight Celebration

### Mumbai (HQs)

The Fishery Survey of India (HQs), Mumbai observed **"*Hindi Day*"** on 14.09.2019 and **"*Hindi Fortnight*"** during 14th–28th September 2019. Dr. L. Ramalingam, DDG (Fy)/Director General (I/C) inaugurated the function by lighting the traditional lamp. Smt. Meera Vellan Rajiv, Jr. Translation Officer gave brief information about the competitions to be organized during Hindi Fortnight and requested all the staff members to do more and more official work originally in Hindi. During the Hindi Fortnight, five competitions were conducted *viz.* 1) Hindi essay writing 2) Hindi noting & drafting 3) General Knowledge on Official Language 4) Anthakshari 5) Hindi Poem recitation. As many as 25 staff members participated in the competitions enthusiastically. The valedictory function of Hindi Fortnight was held on 27th September 2019. Shri Satish Kumar, Pay and Accounts Officer, MoFAH&D was the Chief Guest on the occasion. He congratulated all the winners and participants of all the competitions and also distributed prizes to them.



*Hindi Fortnight celebrations and Prize distribution in FSI (HQs)*

### Mumbai Base

Mumbai Base celebrated ***"Hindi Day"*** on 14th September 2019 and ***"Hindi Fortnight"*** for a period from 14th–28th September 2019. The inaugural function of Hindi Day & Hindi Fortnight was held on 14th September 2019 at the Base Office under the Chairmanship of Shri B. Balanayak, Service Engineer (Mech.). During the fortnight, total of five competitions were conducted *viz* 1) Essay writing 2) Hindi Dictation 3) General Knowledge 4) Hindi Noting & Drafting 5) Hindi Antakshari. As many as 25 staff members participated in the above competitions. A valedictory function of Hindi fortnight was held on 29th September 2019. Dr. Sunita Yadav, Ex-Dy. Director (Implementation), Navi Mumbai was the Chief Guest. During the function, the prizes were distributed to the winners of various competitions.


*Hindi Fortnight celebrations and Prize distribution in Mumbai Base of FSI*

### Mormugao Base

Mormugao Base celebrated **"*Hindi Fortnight*"** from 16th – 30th September 2019. The fortnight programme was inaugurated by Shri R.S. Shukla, PGT, Kendriya Vidyalaya (K.V.) No.1 Vasco-da-Gama, Goa. Dr. Ravi Mishra, Scientist D, NCPOR, Head land Sada, Mormugao, Goa was the Chief Guest on the concluding day and awarded the prizes to the winners of various Hindi competitions conducted during the fortnight.


*Hindi Fortnight celebrations in Mormugao Base of FSI*

### Cochin Base

The **"*Hindi Fortnight*"** was celebrated at Cochin Base during the period 15th – 28th September 2019 with various programmes and competitions in Hindi for the staff. Dr. Jaisingh Meena, Director, NIFPHATT was the Chief Guest for the valedictory function, during which prizes were distributed to the winners of the Hindi competition.


*Hindi Fortnight celebrations in Cochin Base of FSI*

### Chennai Base

**"*Hindi Fortnight*"** was observed at Chennai Base during 1st – 14th September 2019. Various competitions like quiz, essay writing, debate, etc., were conducted and prizes were disturbed to the winners and all the participants. Officers and staff of the base actively participated in the programme.

*Hindi Fortnight celebrations in Chennai Base of FSI*

### Visakhapatnam Base

**"*Hindi Fortnight*"** was observed at Visakhapatnam Base office during 11th - 25th September 2019. The inaugural function along with a debate competition was organized on 11th September 2019. Shri Bibhuti Ranjan, Deputy Inspector General, Indian Coast Guard, District Headquarters, Visakhapatnam was the Chief Guest in the inaugural function. Dr. Rita Trivedi, Hindi Professor, Hindi Teaching Scheme, Visakhapatnam was present on the occasion as guest of honour. All the officers and staff of the Base were present on this occasion. The winners of the debate competition organized on the topic 'Corruption free India' were given prizes by the Chief Guest. The valedictory function was held on 25th September 2019. Shri Sunil B. Rangari, Officer -in- Charge, Central Institute of Fisheries Nautical & Engineering Training (CIFNET), Visakhapatnam was the Chief Guest for the occasion. The winners of various competitions organized during the Hindi Fortnight 2019 were distributed prizes by the Chief Guest.

*Hindi Fortnight celebrations in Visakhapatnam Base of FSI*

### Port Blair Base

Port Blair Base celebrated ***"Hindi Fortnight"*** from 14th - 28th September 2019. On the inauguration day, Shri C. S. Kiran, Surveyor Cum DDG (Tech.), MMD, Port Blair was the Chief Guest. Various competitions *viz.* essay writing, speech, translation, notings, etc. were organized during the fortnight. On 28.09.2018, the closing ceremony of Hindi fortnight was organised wherein, Shri Satya Priyadarshi, Regional Manager, SBI, Port Blair was the Chief Guest and distributed prizes to the winners of various competition organized during the fortnight.

## 18.3 Participation in TOLIC Meetings

| Participant(s) | Designation | Venue and Date |
|---|---|---|
| Shri K. Govindaraj<br>Shri Shahnawaz | Zonal Director<br>Jr. Translation Officer | Office of the Divisional Railway Manager, Visakhapatnam<br>14th May 2019 |
| Dr. Vinod Kumar Mudumala<br>Smt. Meera Vellan Rajiv | Sr. Fisheries Scientist<br>Jr. Translation Officer | Western Railway (HQs) , Churchgate, Mumbai<br>27th May 2019 |
| Shri D. K. Gulati<br>Smt. T. P. Leena | Zonal Director<br>Jr. Translation Officer | Office of the Chief Commissioner of Income Tax, Ernakulam,<br>13th August 2019 |
| Dr. H. D. Pradeep | Fisheries Scientist | MPT Conference Hall, Goa, 25 th September 2019 |

| Participant(s) | Designation | Venue and Date |
|---|---|---|
| Shri S. K. Jaiswal<br>Smt. Meera Vellan Rajiv | Mech. Marine Engineer<br>Jr. Translation Officer | Western Railway (HQs), Churchgate, Mumbai<br>25th October 2019 |
| Shri N. Unnikrishnan<br>Smt. T. P. Leena | Jr. Fisheries Scientist<br>Jr. Translation Officer | Office of the Chief Commissioner of Income Tax, Ernakulam,<br>29th October 2019 |

## 18.4 Participation in Hindi Workshop/ Seminars

- Dr. Mahesh Kumar Farejiya, Deputy Director General (Engg.) and Smt. Meera Vellan Rajiv, Jr. Translation Officer from FSI (HQs), Mumbai participated in the Liaison Officers meeting organized by the Hindi Teaching Scheme, Belapur, Navi Mumbai on 13th May 2019 at Konkan Rail Vihar, Nerul Sea Wood Railway Sation, Navi Mumbai.
- Smt T. P. Leena, Jr. Translation Officer participated in the state wide Official Language seminar in connection with the World Hindi Day celebrations organized by the Cochin TOLIC during 9th- 10th January 2020 in CIFNET, Kochi.

## 18.5 Basic Training Programme to work in Hindi on Computer

- Shri C. H. Bhaskar, Programmer attended the 5 days training programme during 5th - 9th August 2019 organized by Central Hindi Training Institute at Hindi Teaching Scheme, Kendriya Sadan, CBD, Belapur, Navi Mumbai.
- Shri S. K. Jaiswal, Mech. Marine Engineer, Shri Bapu M. Raut, Programmer and Shri Sanjeev Kumar Singh, Stenographer Gr. II from FSI (HQs), Mumbai participated in the 5 days training programme during 16th - 20th December 2019 organized by Central Hindi Training Institute at Hindi Teaching Scheme, Kendriya Sadan, CBD, Belapur, Navi Mumbai.

## 18.6 Training in Hindi

- Kum. Sheryl Thomas, Jr. Librarian from FSI (HQs), Mumbai had undergone Hindi Pragya Training under Hindi Teaching Scheme, during July 2019.
- Smt. Malika, Stenographer Gr. II had undergone Hindi Stenography Training under Hindi Teaching Scheme during Jan 2020.

## 18.7 Awards

- Fishery Survey of India (HQs), Mumbai received a "Shield and a Citation certificate" for the best performance in Official Language implementation for the year 2018-19 among the central Govt. offices located at Mumbai. The Shield and a citation certificate were received by Dr. Vinod Kumar Mudumala, Sr. Fisheries Scientist and Smt. Meera Vellan Rajiv, Jr. Translation Officer in the TOLIC meeting held on 27th May 2019 at Western Railway (HQs), Churchgate, Mumbai.
- The Mormugao Base of FSI was awarded with a shield & Certificate as Ist prize among all Central Govt. offices in Goa for the implementation of Official Hindi Language for the year 2018-19 on 25th September 2019 at Mormugao Port Trust, Mormugao, Goa.

*Awards being received by FSI for Official Language Implementation*

## 18.8 Incentive Scheme for doing official work originally 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, Cash Awards were given to the following employees for the year 2018-19 as per the recommendation of the Assessment Committee constituted for the purpose.

***Frist Prize***

1. Shri Vishal K. Kharat, LDC/Hindi Typist

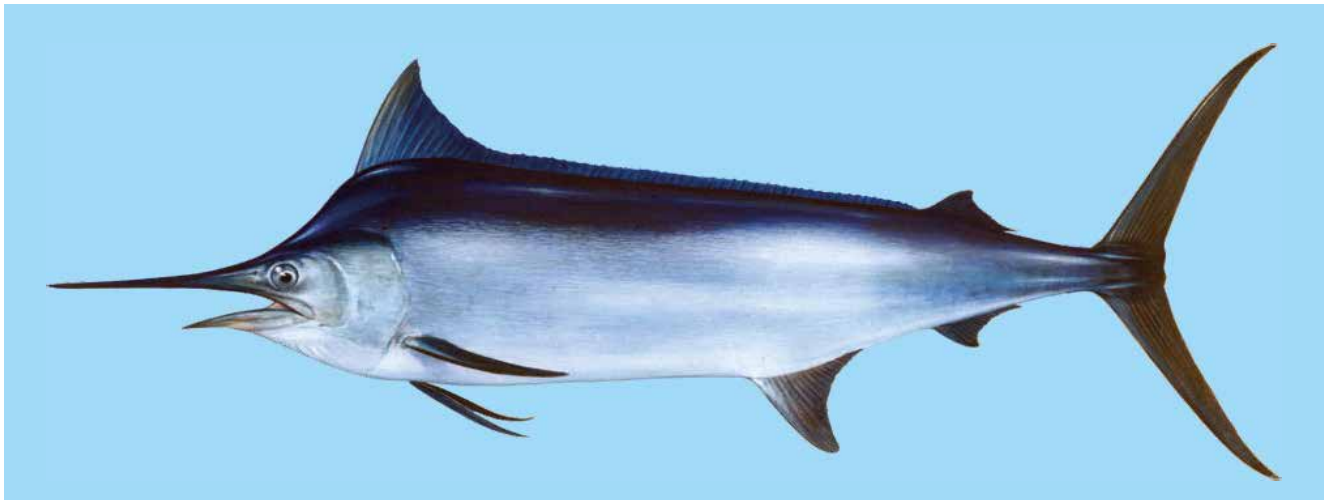
2. Shri Chetan N. Raithatha, UDC

***Second Prize***

1. Shri D. K. Pandya, UDC

2. Shri Chandragupt, LDC

2. Smt. Kavita Naik, MTS



# 19. OTHER ACTIVITIES

## 19.1 International Yoga Day

Fishery Survey of India HQs and Bases observed International Yoga Day on 21.06.2019. All the officials actively participated and performed Yoga *asanas* during the event.

*Yoga asanas performed by FSI (HQs) and Base office staffs on 21.06.2019*

## 19.2 Vigilance awareness week

***"Vigilance Awareness Campaign"*** was observed by FSI HQs, Mumbai and all the Bases from 28th October 2019 to 2nd November 2019. As a part of campaign the integrity pledge was taken by all the officers and staff members on 28th October 2019.

*Observance of Vigilance Awareness Week in FSI (HQs) and Bases*

A Vigilance Awareness Rally was carried out in fishing harbor, Kasimedu by the staff of the Chennai Base of FSI and students from the Central Institute of Fisheries Nautical and Engineering (CIFNET), Chennai on 1st November 2019 where vigilance awareness pamphlets were distributed among the local fishermen. Debate, poster making and elocution competitions were conducted for the students of CIFNET, Chennai and the best performers were awarded with prizes and certificates. Elocution competition was also conducted for the officers and staff of the Base office on 2nd November 2019 and prizes were distributed to the winners.

## 19.3 Swachhata Pakhwada/ Abhiyan observed by Fishery Survey of India HQs and Bases

Swacchata Campaign was organised by FSI (HQs) jointly with the Mumbai Base of FSI from 11th September 2019 to 27th October 2019 under Swachhata Action Plan (SAP) of Department of Fisheries. All the officers and staff of the HQs and Base took active participation in this cleanliness drive. During this programme clean-up drives were conducted at various places like St. George Hospital (2nd and 3rd October 2019), Girgaon Chowpaty (9th October 2019), Kelwa Jetty, Palghar (18th October 2019) etc. The task of weeding out the old files, cleaning the office premises and road adjoining the Sassoon Dock Jetty were also taken up during the *Abhiyan*. The importance of cleanliness and hygiene was also explained to the seafood peeling shed workers at Sassoon Dock, Mumbai.




Mormugao Base of FSI were actively involved in various cleanliness activities. Officials of the Base took oath on "Swachhata Hi Seva" on 24th September 2019 and cleaned the office premises on 26th September 2019. Further, they cleaned the street drains on 5th and 16th October 2019 and Baina beach on 19th October 2019. The Base also conducted a rally for generating awareness about Swachhata on 23rd October 2019, where around 40 students of Govt. Primary School, Bogda along with 5 faculty members participated. The news about the rally was published in the local dailies

like "Navprabha" and "Tarun Bharat" on 24th October 2019 and 31st October 2019 respectively.

Cochin Base of FSI observed "Swacchta Hi Sewa" campaign to upkeep cleanliness of office premises at the Base, Marine Engineering Division (MED), FSI Staff Quarters and Fort Kochi beach during the priod 1st–26th October 2019.

Chennai Base of FSI, with the guidance of Environmentalist Foundation of India (E.F.I), Chennai has organized 1st & 2nd phase of "Wall Painting Activity" on 23rd December 2019 and 31st December 2019 respectively on the office compound walls as a part of "Swachh Bharat Abhiyan". Volunteers from Bharathi Women's College (A), Chennai and the officers & staff of the Base actively participated in the event. Base also planted indoor plants and plant saplings across the office premises as a part of "Swachh Bharat Abhiyan".

Visakhapatnam Base of FSI observed "Swacchta Hi Sewa" campaign from 15th September to 2nd October 2019. All the officers and staff took part in the cleanliness drive at the office premises and at fishing harbour jetty no.6.

Port Blair Base of FSI, under "Swachhta Abhiyaan" organized various cleanliness drives in the office premises and nearby areas on 3rd August 2019, 13th August 2019, 12th September 2019 and 28th October 2019. An oath on *Swachhta* was also taken on 12th September 2019.

# 20. CO-OPERATION AND ASSOCIATION WITH NATIONAL AND INTERNATIONAL ORGANIZATIONS

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.

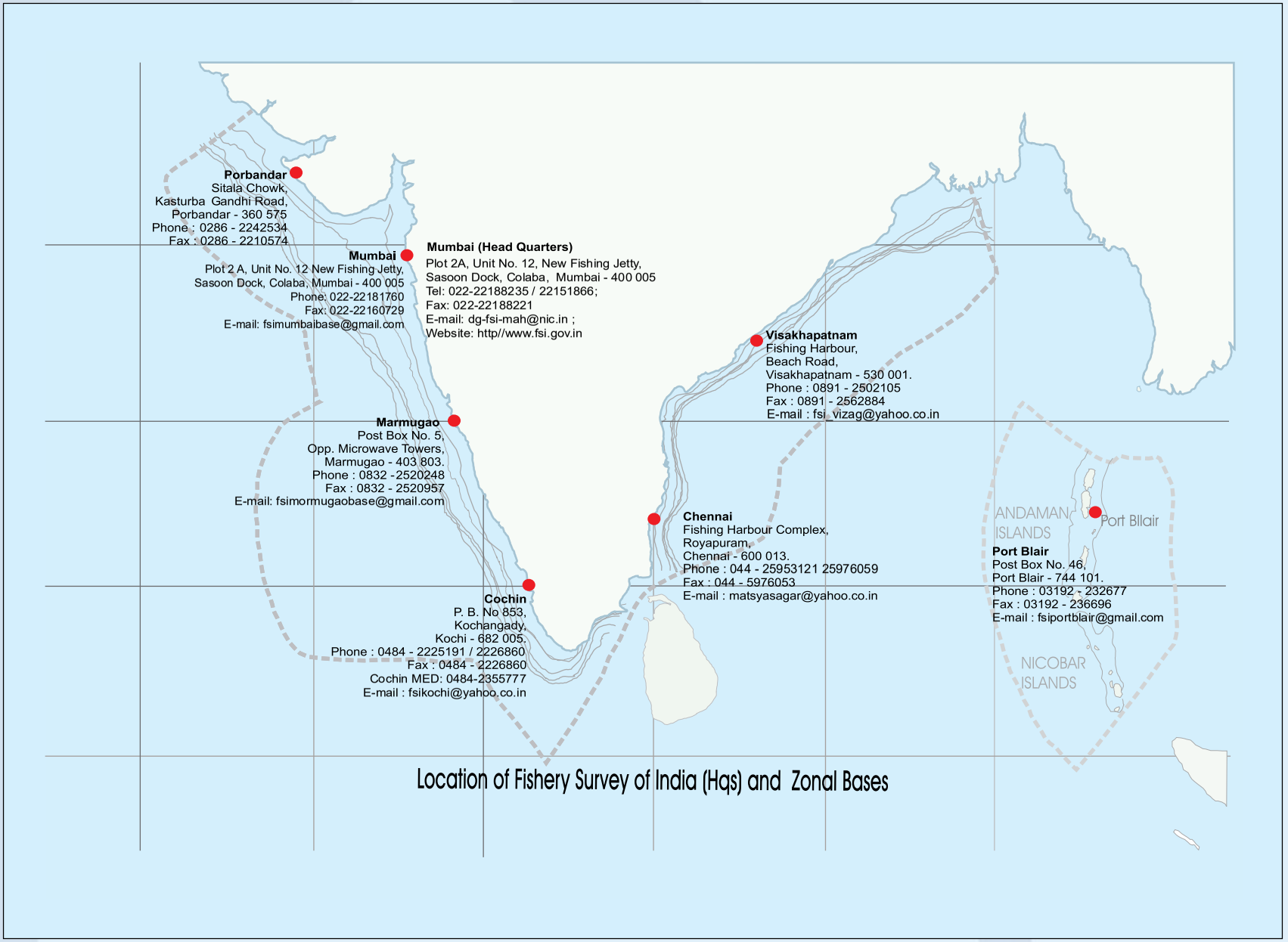
11. Committee for revalidation of fish catch potential from In-land and Marine Cages.
12. Committee to consider various issues relating to Fisheries/ Security to fishermen.
13. Working group on Animal Committee.
14. Committee on FAO's Technical Consultation on Flag state performance.
15. Cenral Approval and Monitoring Committee (CAMC) for approval of both administrative and financial angle for centre financial assistance under CSS.
16. Committee for re-drafting of Marine Fisheries Regulation and Management Bill.
17. Research Advisory and Monitoring Committee (RAMC) for Zoological Surey of India.
18. Task Force on Fisheries Subsidies
19. Committee to look into the aspects of use of high power engine boats for trawling Committee
20. Committee to work out fleet plan for Indian EEZ.
21. Project Management Council (PMC) of Ocean Observation System (OOS), SIBER and GEOTRACES.

# 21. 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 | : | Other fishes |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Kasturba Gandhi Road,
Porbandar - 360 575
Phone : 0286 - 2242534
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Sasoon Dock, Colaba, Mumbai - 400 005
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