



# FISHERY RESOURCES SURVEY, ASSESSMENT AND RESEARCH PROGRAMME 2022-23

April 2022

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**FISHERY SURVEY OF INDIA**  
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## PREFACE

The Nation is celebrating 75 years of independence “*Azadi ka Amrit Mahotsav*”. On this occasion, Fishery Survey of India (FSI) too had celebrated the diamond jubilee anniversary on completion of its 75 years of dedicated service to the Nation and redirected the activities to the Nation poising to achieve new heights of Excellency in marine fishery resources management. FSI’s primary mandated activities of marine fishery resources survey, assessment and monitoring are one of its kind in the country. FSI is unique for its data bank in the global arena.

FSI being the nodal institute under the administrative control of the Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India, used to carry out the activities in a systematic planned manner. Entire research and survey programmes are well documented in this book “Fishery Resources Survey, Assessment and Research Programme’. This book is being published every year depicting the research plan, survey operation programme and research project action plan. In a nutshell, this book acts like Research & Survey manual of the institute.

The programmes are planned on need basis, i.e., as per the demand and request of the coastal states as well as the stakeholders of the fishing industry through the respective Zonal Bases of FSI. Compilation and refinement of all the needs give birth to this book.

This year, FSI took the following projects on its endeavor to achieve new heights of excellence;

- (i) Marine Mammal Stock Assessment in Indian EEZ.
- (ii) Yellowfin Tuna Stock delineation through molecular techniques.
- (iii) GloLitter project.

In addition to the above projects, survey and assessment of oceanic squids have also been planned with a hope to bring best results for the industry to explore new vistas of exploitation of oceanic resources aiming to reduce fishing pressure from the coastal waters.

Focused implementation of all the activities will be taken up based on the programmes envisaged in this book. To fulfill the entire task on a precise manner, I seek the continued support of Dept. of Fisheries, all the scientists, technocrats, administrators and the entire FSI team to produce quality, real-time, geo-tagged marine fishery resources data for the Nation.

I wish each and everyone, all the very best in this journey to achieve the targets in the most optimal level.

(Dr. R. Jeyabaskaran)  
Director General

**OPERATIONAL BASES AND SURVEY VESSELS**

<b>Name of the Vessel</b>	<b>Vessel Type</b>	<b>OAL (m)</b>	<b>GRT</b>	<b>BHP</b>
<b>MUMBAI</b>				
<i>MFV Matsya Vrushti</i>	Monofilament longliner	37.5	465	1215
<i>MFV Matsya Nireekshani</i>	Stern trawler	40.5	329.3	2030
<b>MORMUGAO</b>				
<i>MFV Yellow Fin</i>	Tuna longliner	35.7	310	800
<i>MFV Sagarika</i>	Stern trawler	28.8	189	650
<b>COCHIN</b>				
<i>MFV Matsya Varshini</i>	Trawler-cum-Purse-seiner	36.5	268.8	1160
<i>MFV Lavanika</i>	Stern trawler	24.0	151	500
<b>CHENNAI</b>				
<i>MFV Matsya Drushti</i>	Monofilament longliner	37.5	465	1215
<i>MFV Samudrika</i>	Stern trawler	28.8	189	650
<b>VISAKHAPATNAM</b>				
<i>MFV Matsya Shikari</i>	Stern trawler	39.8	352.4	1740
<i>MFV Matsya Darshini</i>	Stern trawler	36.5	268.80	1160
<b>PORT BLAIR</b>				
<i>MFV Blue Marlin</i>	Tuna longliner	35.7	310	800

**I. MARINE FISHERY RESOURCES SURVEY, ASSESSMENT AND RESEARCH PROJECTS**

**I. A. DEMERSAL RESOURCES SURVEY AND MONITORING PROJECTS**

<b>Sl. No.</b>	<b>Coast / Vessel</b>	<b>Latitude / Depth (m)</b>
<b>West Coast</b>		
I.A.1	MFV <i>Matsya Nireekshani</i>	18° –23°N 30-500 m
I.A.2	MFV <i>Sagarika</i>	12° –18°N 30-300 m
I.A.3	MFV <i>Matsya Varshini</i>	07° –12°N 30-500 m
I.A.4	MFV <i>Lavanika</i>	08° –11°N 20-100 m
<b>East Coast</b>		
I.A.5	MFV <i>Samudrika</i>	10° -16°N 30-300 m
I.A.6	MFV <i>Matsya Shikari</i>	16° –21°N 30-200 m
I.A.7	MFV <i>Matsya Darshini</i>	16° –21°N 30-200 m

**Project –I.A.1.** : **DEMERSAL RESOURCES SURVEY, ASSESSMENT AND MONITORING OF FISH STOCKS ALONG NORTH MAHARASHTRA AND GUJARAT COAST BETWEEN LAT. 18° N AND 23° N**

**Project Coordinator** : Shri Ashok S. Kadam, Fisheries Scientist

**Period** : April 2022 – March 2023

**Project Components**

- ❖ Exploratory survey of demersal resources using fish trawl in 100 – 500 m depth.
- ❖ Monitoring of Demersal resources using fish trawl in 30-100 m depth.
- ❖ Exploratory survey using shrimp trawl in 100-500 m depth.
- ❖ Experiments for assessment of fishing gear efficiency.
- ❖ Mesh selectivity studies with cod-end cover.

**Project Objectives**

- Preparation of species inventory of demersal finfish and shellfish resources.
- Estimation of abundance indices of demersal resources and major components thereof with emphasis on Sciaenids, Threadfin breams, Catfish, Bulls eye, Barracuda, Ribbon fish, Horse mackerel, Scads, Squids and Cuttlefish.
- Identifying spatio-temporal distribution pattern of above resources.
- Study of biological aspects of important resources.
- Stock assessment of important species/resources.
- Study of suitable mesh size for important species.

**Survey and Research Team**

Project Leader	Project Associates	
	Scientists	Engineer
Shri. A. S. Kadam, Fisheries Scientist	Shri. A. V. Tamhane, Sr. Scientific Assistant  Shri. Swapnil S. Shirke, Sr. Scientific Assistant  Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant	Shri. S. Kanthen, Service Engineer (Mech.)

**Base of operation** : **Mumbai**

**Vessel** : ***Matsya Nireekshani***

**Gear** : 1) 34 m Fish trawl (FT)  
2) 45 m Shrimp trawl (ST)

**Vessel officers**

Skipper : Vacant

Chief Engineer Gr. I : Vacant

**Survey strategy** :

1. Stratified random sampling
2. The survey area to be divided into two sectors viz. Sector- I (Lat.18° N to 20° N) and Sector- II (Lat 20° N to 23° N)
3. Survey cruises to be conducted alternatively in each sector. In each cruise, sampling shall begin from the farthest Latitude as far as possible.

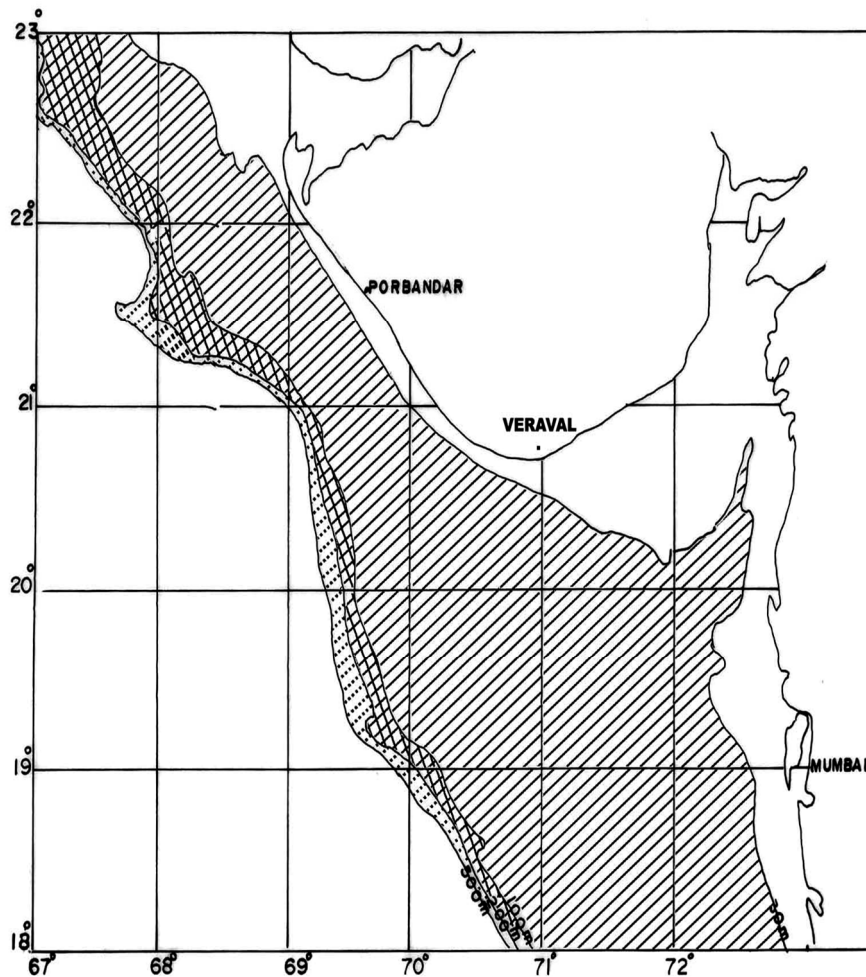
**Distribution of sampling efforts:**

Particulars	Exploratory Survey		Monitoring survey	
	FT	ST	FT	ST
Depth zone (m)	100-500	100-500	30-100	30-100
Extent of area (Sq. km)	14590	14590	97735	97735
No. of hauls	10	10	10	20

**Physical target per cruise**

Days out as Sea : 20  
Fishing days : 16  
No. of hauls : 50  
Duration of haul : 90 minutes

**Survey area: (Lat. 18° N - 23° N)**



**Result reporting:** As per Annexure – II

**Project –I.A.2.** : **DEMERSAL FISHERY RESOURCES, ASSESSMENT AND MONITORING ALONG SOUTH MAHARASHTRA, GOA, KARNATAKA AND NORTH KERALA COAST BETWEEN LAT 12° N - 18° N**

**Project Coordinator** : Dr. S. Ramachandran, Zonal Director

**Period** : April 2022 to March 2023

**Project component** : 1. Exploratory demersal resources survey in 100-300 m depth  
2. Monitoring of demersal resources in 30-100 m depth

**Project objectives:**

- Preparation of species inventory of demersal fish and shell fish resources
- Estimation of abundance indices of demersal resources and major components
- Study of biological aspects of important species
- Identifying spatio- temporal distribution pattern of the fishery resources
- Stock assessment of important resources

**Survey and research team**

<b>Project leader</b>	<b>Project Associates</b>	
	<b>Scientists</b>	<b>Engineer</b>
Dr. Pradeep H.D., Fisheries Scientist	Shri N. Unnikrishnan, Jr. Fisheries Scientist  Shri Raju S. Nagpure, Sr. Scientific Assistant  Shri Nashad M., Sr. Scientific Assistant	Shri Manoj O. T., Mechanical Marine Engineer

**Base of operation** : **Mormugao**

**Vessel** : **MFV Sagarika**

**Gear** : 27 m Fish Trawl  
30 m Shrimp Trawl

**Vessel officers**

Skipper : Shri A. K. Mohapatra

Chief Engineer Gr. I : Vacant

**Survey Strategy** : 1) Stratified random sampling.  
2) The northern and southern latitudes to be surveyed in alternative months.

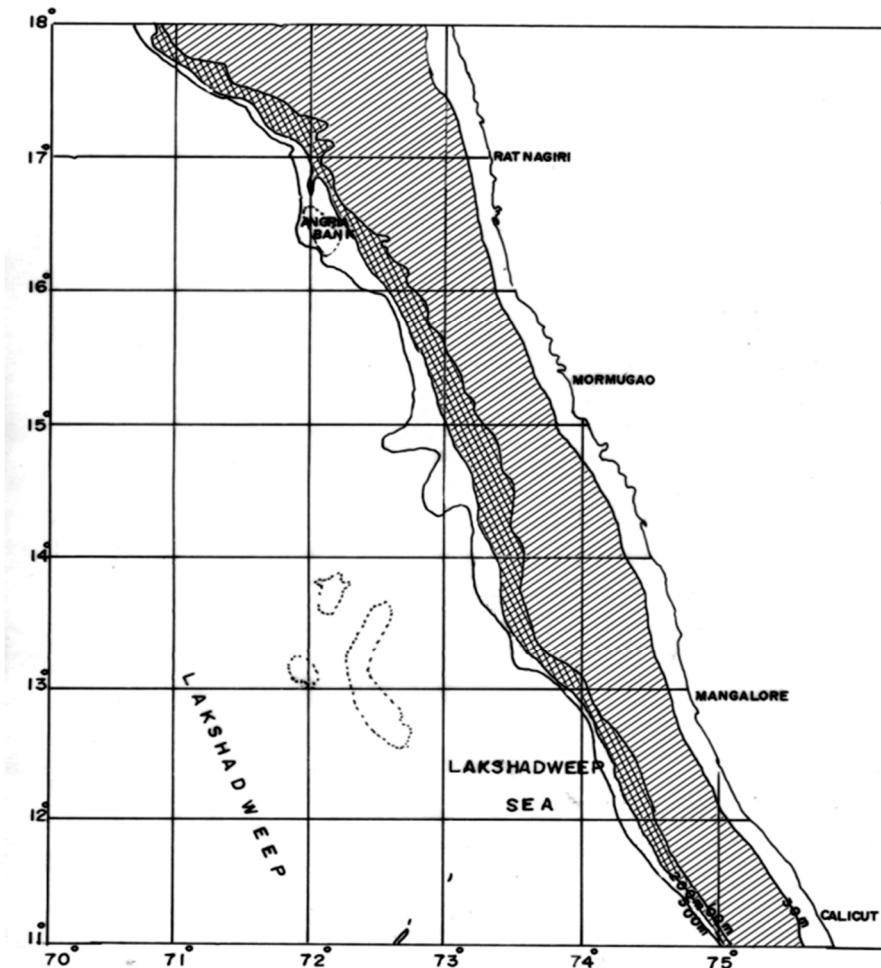
### Distribution of sampling efforts:

Particulars	Survey		Monitoring
	FT	ST	FT
Gear			FT
Depth zone (m)	100-200	100-300	30-100
Extent of Area (Sq. km)	12265	18000 (Approx)	58825
No of hauls	12	18	20

### Operational targets per cruise:

Days out at sea : 20  
Fishing days : 16  
No. of hauls : 50  
Duration of haul : 90 minutes

### Survey area: Lat. 12°-18° N



Result reporting : As per Annexure – II

**Project –I.A.3. : DEMERSAL FISHERY RESOURCES SURVEY, ASSESSMENT AND MONITORING ALONG SOUTH WEST COAST, WADGE BANK AND GULF OF MANNAR BETWEEN LAT. 07° N – 12° N**

**Project Coordinator :** Dr Sijo P. Varghese, Zonal Director

**Period :** April 2022 – March 2023

**Project components:**

1. Demersal fin fish resources survey in the South-West coast, Quilon Bank, Wedge Bank and Gulf of Mannar between 7° N and 12° N in 100-500 m depth.
2. Monitoring of demersal resources using fish trawl in 30-100 m depth.
3. Exploration and species inventory on slope dwelling resources in 200-500 m depth.

**Project objectives:**

- Preparation of species inventory of demersal fin-fish and shellfish resources
- Estimation of abundance indices of demersal resources and the major components thereof, with emphasis on scads, lizard fish, threadfin breams, squids, cuttlefish , bulls eye, crabs, carangids and horse mackerel
- Mapping spatio – temporal distribution pattern of the resources
- Study of biological aspects of selected 10 important species
- Investigation of biology of perches in Quilon Bank, Wadge Bank and Gulf of Mannar
- Imparting training in fishing techniques and demonstrations of modern equipment on board to the fishermen, fishing industry representatives and entrepreneurs.

**Survey and research team**

Project Leader	Project Associates	
	Scientists	Engineer
Shri. A. E Ayoob, Fishing Gear Technologist	Shri Jacob Thomas, Jr. Fisheries Scientist  Dr Sujit Kumar Pattnayak, Sr. Scientific Assistant  Shri Solly Solomon, Sr. Scientific Assistant	Shri. Dharamvir Singh, Mech. Marine Engineer

**Base of operation :** Cochin

**Vessel :** *Matsya Varshini*

**Gear :** 1) Expo model fish trawl  
2) 47 m shrimp trawl

**Vessel Officers**

**Skipper :** Shri. K. Joseph Paul, Skipper

**Chief Engineer Gr. I :** Shri. Chelliah Murugan, Chief Engineer, Gr.I

**Survey strategy:**

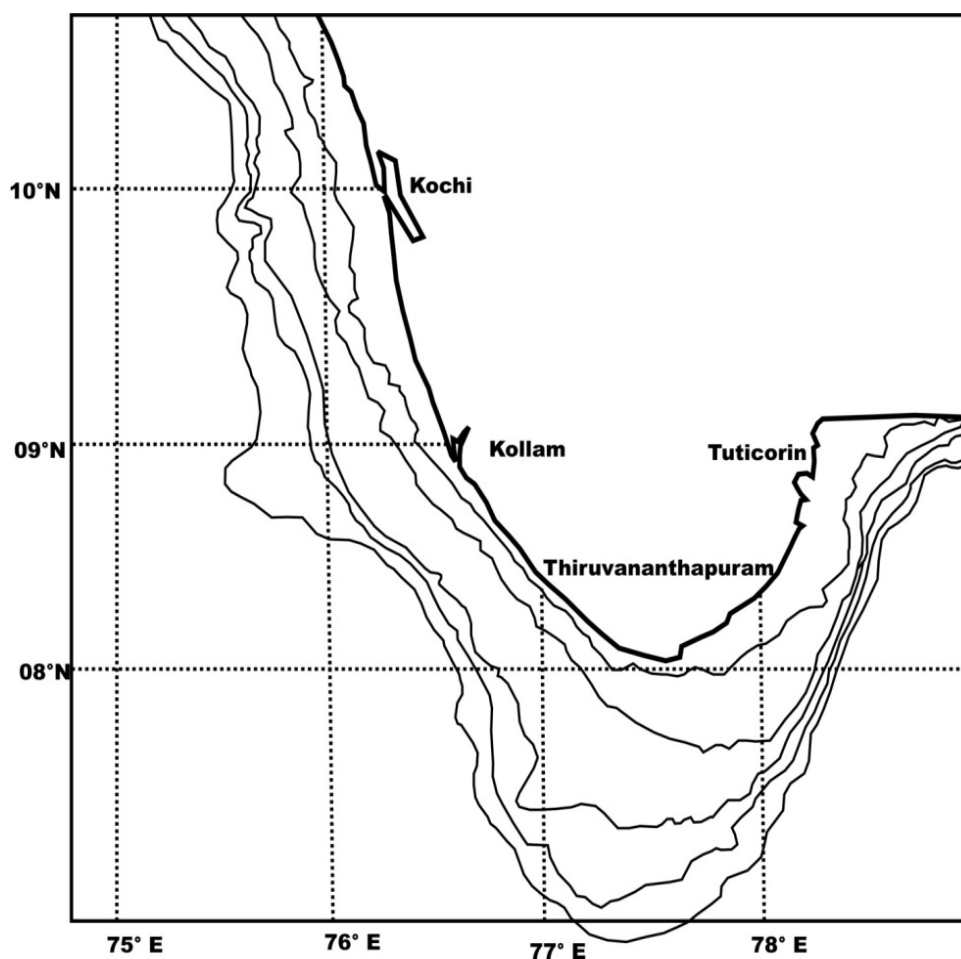
- 1) Area to be divided in three sectors viz., Wadge Bank, Gulf of Mannar and South west coast (7° - 12° N). Each sector to be covered in each quarter and every voyage, 10 days should be spent for demersal trawling along with 10 days squid jigging.

**Distribution of sampling efforts:**

Particulars	Exploratory survey				Monitoring survey	
	FT		ST		FT	ST
Depth zone (m)	100-200	200-500	100-200	200-500	30-100	30-100
Extent of area (Sq. km)	6525	7710	6525	7710	20250	20250
No. of hauls	5	6	3	3	5	3

**Operational target per cruise**

Days out at sea : 10  
Fishing days : 8  
No. of hauls : 25  
Duration of haul : 90 minutes

**Survey Area (7° N – 12° N)**

**Result reporting:** As per Annexure – II

**Project –I.A.4. : DEMERSAL FISHERY RESOURCES SURVEY, ASSESSMENT AND MONITORING ALONG SOUTH WEST COAST**

**Project Coordinator :** Dr Sijo P. Varghese, Zonal Director

**Period :** April 2022 – March 2023

**Project Objectives**

- Preparation of species inventory of demersal fin fish and shell fish resources.
- Estimation of abundance indices of demersal resources and the major components thereof, with emphasis on scads, lizard fish, threadfin breams, squids, cuttlefish, bulls eye, carangids.
- Identifying spatio-temporal distribution pattern of the resources.
- Study of biological parameters of important species as per Annexure – I

**Survey and Research Team**

Project Leader	Project Associates	
	Scientists	Engineer
Shri Jacob Thomas, Jr. Fisheries Scientist	Shri A. E Ayoob, Fishing Gear Technologist  Dr Sujit Kumar Pattnayak, Sr. Scientific Assistant  Shri Solly Solomon, Sr. Scientific Assistant	Shri Dharmvir Singh, Mech. Marine Engineer

**Base of operation :** Cochin

**Vessel :** MFV *Lavanika*

**Gear :** 1) 700 mesh Fish trawl  
2) 28 m Shrimp trawl

**Vessel officers**

Skipper : Shri. A. Udayappan, Skipper

Chief Engineer Gr. I : Vacant

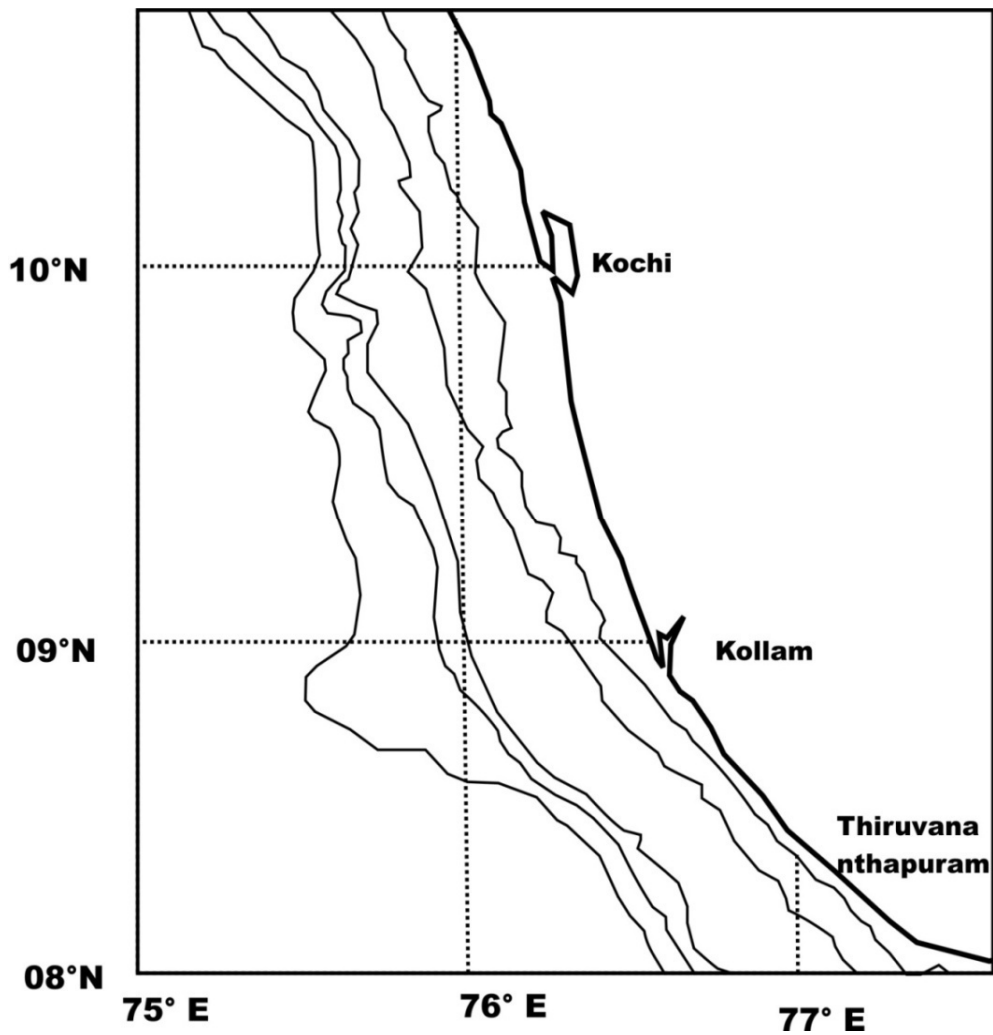
**Distribution of sampling efforts:**

Particulars	Monitoring	
	FT	ST
<b>Gear</b>		
<b>Depth zone (m)</b>	30-100	20-100
<b>No. of hauls</b>	15	10

### Physical target per cruise

No. of cruise/ month	:	01
Days out at sea	:	10
Fishing days	:	08
No. of hauls	:	25
Duration of haul	:	90 minutes.

**Survey Area: Lat.8° N-11° N**



**Result reporting:** As per Annexure – II

**Project –I.A.5. : DEMERSAL FISHERY RESOURCES SURVEY, ASSESSMENT AND MONITORING OF FISH STOCKS ALONG SOUTH EAST COAST BETWEEN LAT.10° N-16° N**

**Project Coordinator** : Shri A. Tiburtius, Zonal Director

**Period** : April 2022 – March 2023

**Project Objectives :**

- ❖ Preparation of species inventory of demersal finfish and shellfish resources.
- ❖ Estimation of abundance indices of demersal resources and major components thereof with emphasis on silver bellies, decapterids, mackerels, barracudas, carangids, squids, cuttle fishes, perches, lizard fishes, sciaenids, threadfin breems, catfishes, upenoids and bulls eye.
- ❖ Identifying spatio-temporal distribution pattern of the above resources.
- ❖ Study of biological aspects of important species.
- ❖ Stock assessment of important resources.

**Survey and Research Team:**

Project leader	Project Associates	
	Scientists	Engineer
Dr A. John Chembian, Jr. Fisheries Scientist	Dr J. Jeyachandra Dhas, Jr. Fisheries Scientist  Shri Y. Tharumar, Jr. Fisheries Scientist  Dr K. Silambarasan, Sr. Scientific Assistant  Dr Roshan Maria Peter, Sr. Scientific Assistant	Shri C. Dhanunjaya Rao, Mechanical Marine Engineer

**Base of operation** : **Chennai**

**Vessel** : **MFV *Samudrika***

**Gear** : 1) 27.5 m Fish trawl (FT)  
2) 30 m Shrimp trawl (ST)  
3) 36.2 m Cephalopod trawl (CT)  
4) Resources specific gear  
( to be made using square type mesh in cod-end)

**Vessel Officers**

**Skipper** : Vacant

**Chief Engineer Gr. I** : Vacant

### Survey Strategy:

1. Stratified random sampling.
2. The survey area to be divided in to two sectors Viz. Lat. 10° N-13° N and Lat. 14° N-16° N. Vessel to cover each sector in alternative cruise.
3. In each cruise sampling should begin from the farthest latitude as far as possible.
4. Resources specific trawl fishing to be conducted simultaneously with regular survey in peak season of abundance of each resource.

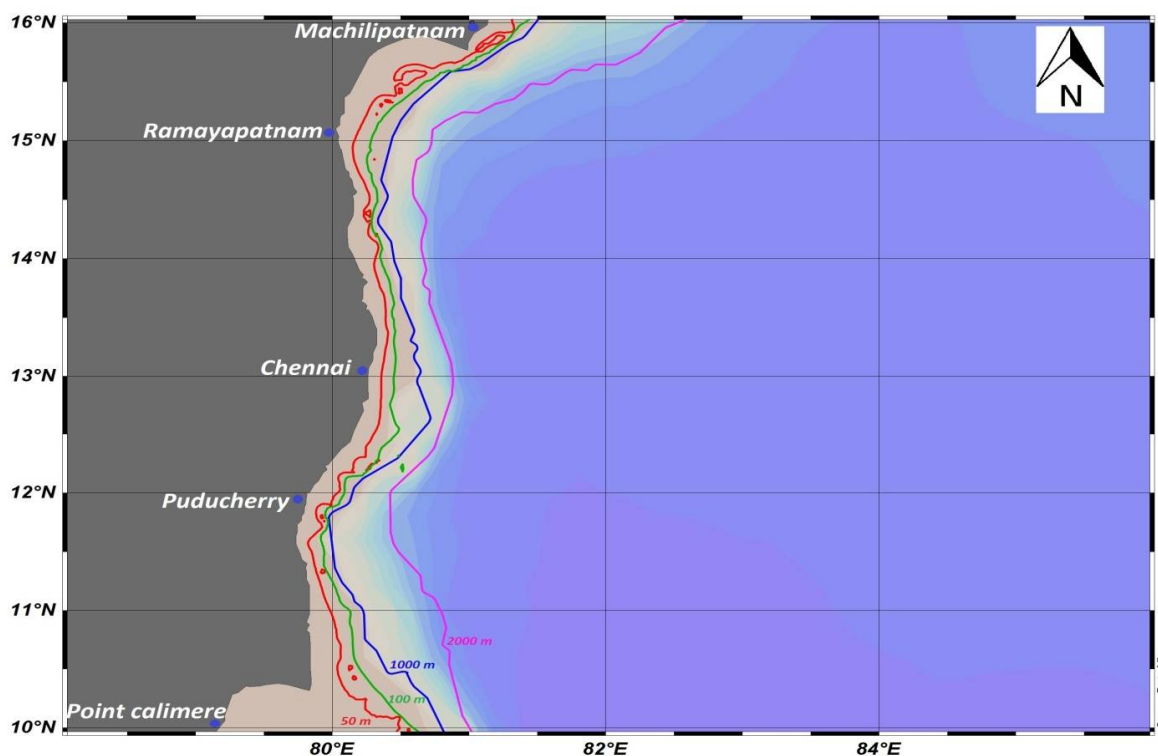
### Distribution of sampling efforts:

Particulars	Exploratory Survey			Monitoring
	FT	ST / Resources Specific trawl	CT	FT/ST
Depth zone (m)	100-300	30-300	30-300	30-100
Extend of area (Sq. km)	9265	21205	21205	11940
No. of hauls	15	15	10	10

### Physical Targets per Cruise

Days out at sea	: 20
Fishing days	: 16
No. of hauls	: 50
Duration of haul	: 90 minutes

### Survey area (Lat. 10°-16° N):



**Result reporting:** As per Annexure – II

**Project –I.A.6. : DEMERSAL FISHERY RESOURCES SURVEY, ASSESSMENT AND MONITORING ALONG THE UPPER EAST COAST BETWEEN LAT. 16<sup>0</sup> N AND 21<sup>0</sup> N**

**Project Coordinator : Shri D. Bhami Reddy, Mechanical Marine Engineer**

**Period : April 2022 – March 2023**

**Project components:**

1. Exploratory survey of demersal resources using 34 m Fish Trawl in 100 – 200 m depth.
2. Monitoring of demersal resources using 34 m Fish Trawl in 30 – 100 m depth.
3. Exploratory survey using 34 m Shrimp Trawl in 30 – 500 m depth.
4. Experiments for assessment of fishing gear efficiency.

**Project Objectives :**

1. Preparation of species inventory of demersal fishery resources
2. Estimation of abundance indices of demersal fishery resources and the major components thereof, with emphasis on Threadfin breams, Catfish, Mackerel, Scads, Goatfishes, Perches, Silver bellies, Bulls eye and Croakers
3. Identifying spatio-temporal distribution pattern of the resources
4. Study of biological parameters of important species
5. Stock assessment of important resources
6. Imparting training in fishing techniques and demonstrations of modern equipment on board to the fishermen, fishing industry representative and entrepreneurs

**Survey and Research Team:**

Project Leader	Project Associates	
	Scientists	Engineer
Dr. Annada Bhusan Kar, Fisheries Scientist	Shri G.V.A. Prasad, Junior Fisheries Scientist  Shri Pratyush Das, Jr. Fishing Gear Technologist	Shri D Bhami Reddy, Mechanical Marine Engineer

**Base of Operation : Visakhapatnam**

**Vessel : *Matsya Shikari***

**Gear : 34 m Shrimp Trawl  
: 34 m Fish Trawl**

**Vessel Officers**

**Skipper : Shri V.V.S. Murthy  
Chief Engineer Gr. I : Vacant**

**Survey Strategy** : Sampling in each cruise to begin from the farthest latitude as far as possible.

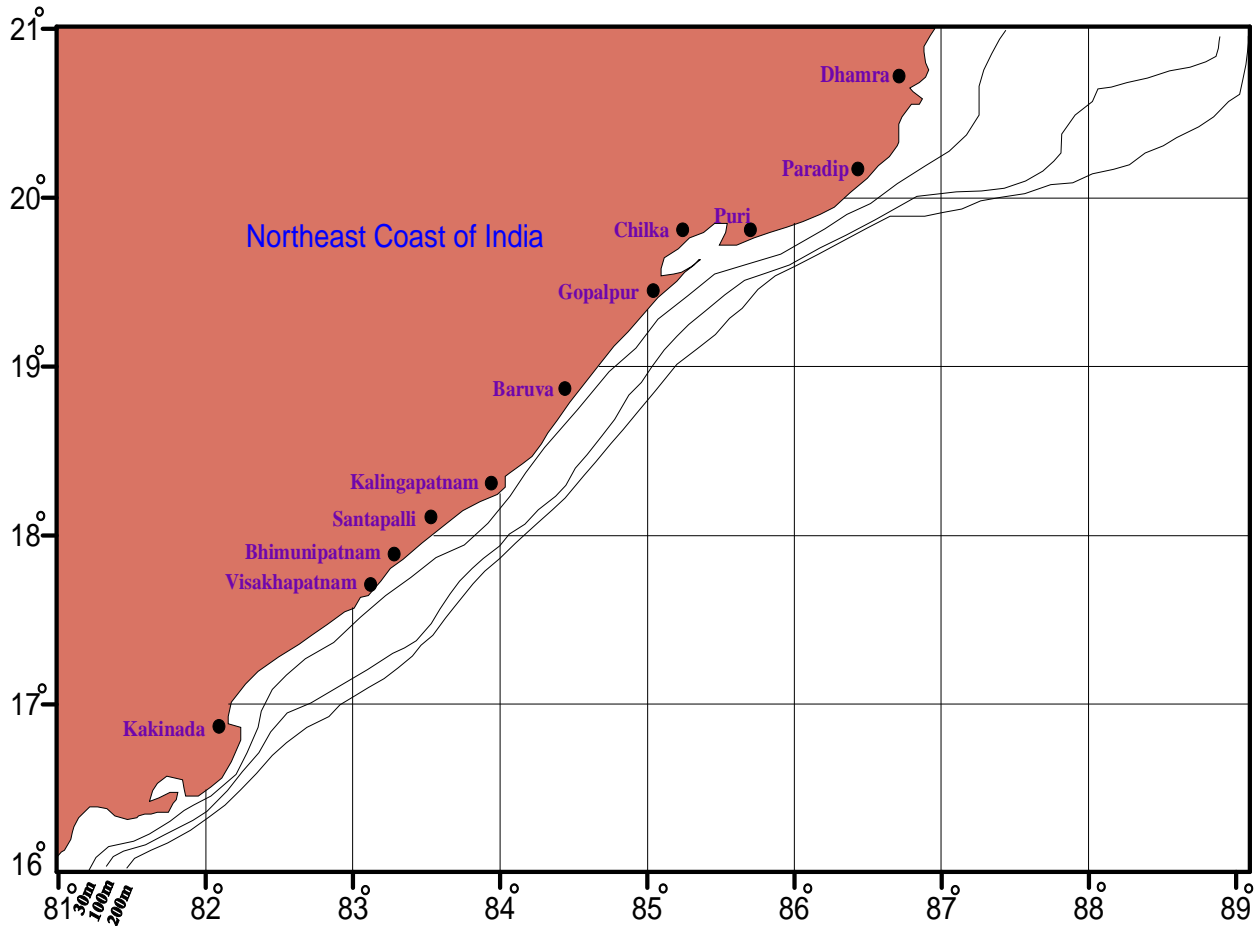
**Distribution of Sampling Efforts:**

Particulars	Survey		Monitoring
	FT	ST	FT
Gear			
Depth zone (m)	100-200	30-500	30-100
Area (sq. km)	15310	42620	23710
No. of hauls	18	17	15

**Physical Targets per Cruise**

Days out at sea : 20  
 Fishing Days : 16  
 Number of hauls : 50  
 Duration of haul : 90 min.

**Survey Area:**



**Result reporting:** As per Annexure – II

**Project –I.A.7. : DEMERSAL FISHERY RESOURCES SURVEY, ASSESSMENT AND MONITORING ALONG THE UPPER EAST COAST BETWEEN LAT. 16° AND 21° N**

**Project Coordinator : Shri D. Bhami Reddy, Mechanical Marine Engineer**

**Period : April 2022 – March 2023**

**Project Components:**

1. Exploratory survey of demersal fishery resources using 45.6 m Fish Trawl in 100 – 200 m depth.
2. Monitoring of demersal resources using 45.6 m Fish Trawl in 30 – 100 m depth.
3. Exploratory survey using 34 m Shrimp Trawl in 30 – 500 m depth.
4. Experiments for assessment of fishing gear efficiency.
5. Mesh selectivity study with cod end cover.
6. Comparative study of 30 m diamond cod-end mesh and 30 m square cod-end mesh.

**Project Objectives :**

1. Preparation of species inventory of demersal fishery resources
2. Estimation of abundance indices of demersal fishery resources and the major components thereof, with emphasis on Threadfin bream, Catfish, Mackerel, Scads, Goatfishes, Perches, Silver bellies, Bulls eye and Croakers
3. Identifying spatio-temporal distribution pattern of the resources
4. Study of biological parameters of important species
5. Stock assessment of important resources
6. Imparting training in fishing techniques and demonstrations of modern equipment on board to the fishermen, fishing industry representative and entrepreneurs

**Survey and Research Team:**

Project Leader	Project Associates	
	Scientists	Engineer
Shri G.V.A. Prasad, Junior Fisheries Scientist	Dr Annada Bhusan Kar, Fisheries Scientist  Shri Pratyush Das, Jr. Fishing Gear Technologist	Shri D. Bhami Reddy, Mechanical Marine Engineer

**Base of Operation : Visakhapatnam**

**Vessel : *Matsya Darshini***

**Gear : 45.6 m expo model bottom trawl  
: 34 m shrimp trawl**

**Vessel Officers**

**Skipper : Shri Paritosh Biswas**

**Chief Engineer Gr. I : Vacant**

**Survey Strategy** : Area to be divided in two sectors, viz. sector- I (16° N - 19° N) and sector- II (19° N - 21° N), each sector to be surveyed in alternate months.

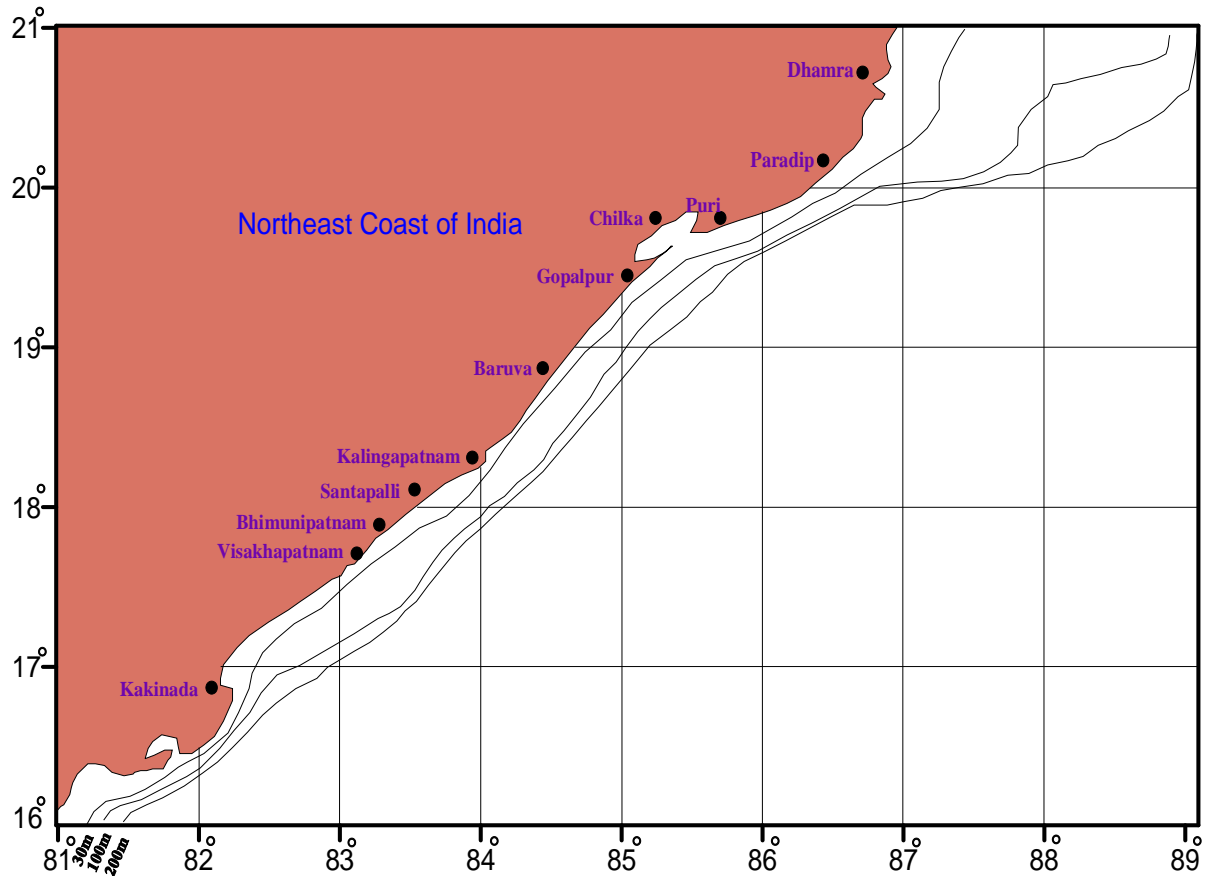
**Distribution of Sampling Efforts:**

Particulars	Survey		Monitoring
	FT EXPO	ST	FT EXPO
Gear	100-200	30-500	30-100
Depth zone (m)	15310	42620	23710
Area (Sq. km)	15	25	10
No. of hauls			

**Physical Targets per Cruise**

Days out at sea : 20  
 Fishing Days : 16  
 Number of hauls : 50  
 Duration of haul : 90 min.

**Survey Area:**



**Result reporting:** As per Annexure – II

**Project –I.B.1. : OCEANIC SQUID RESOURCES SURVEY, ASSESSMENT AND MONITORING ALONG SOUTH WEST COAST, WADGE BANK AND GULF OF MANNAR BETWEEN LAT. 07° N – 12° N**

**Project Coordinator** : Dr Sijo P. Varghese, Zonal Director

**Period** : April 2022 – March 2023

**Project components:**

1. Oceanic squid resources survey in the South-West coast between 7° N and 12° N.

**Project objectives:**

- Estimation of abundance indices of oceanic squids
- Mapping of spatio – temporal distribution pattern of the resources
- Collection of biological parameters of major oceanic squid species
- Oceanographic preferences of oceanic squids

**Survey and Research Team**

Project Leader	Project Associates	
	Scientists	Engineer
Shri. A. E Ayoob, Fishing Gear Technologist	Shri Jacob Thomas, Jr. Fisheries Scientist  Dr Sujit Kumar Pattnayak, Sr. Scientific Assistant  Shri Solly Solomon, Sr. Scientific Assistant	Shri. Dharamvir Singh, Mech. Marine Engineer

**Base of operation** : **Cochin**

**Vessel** : *Matsya Varshini*

**Gear** : Automatic squid jigging machine

**Vessel Officers**

**Skipper** : Shri. K. Joseph Paul, Skipper

**Chief Engineer Gr. I** : Shri. Chelliah Murugan, Chief Engineer, Gr. I

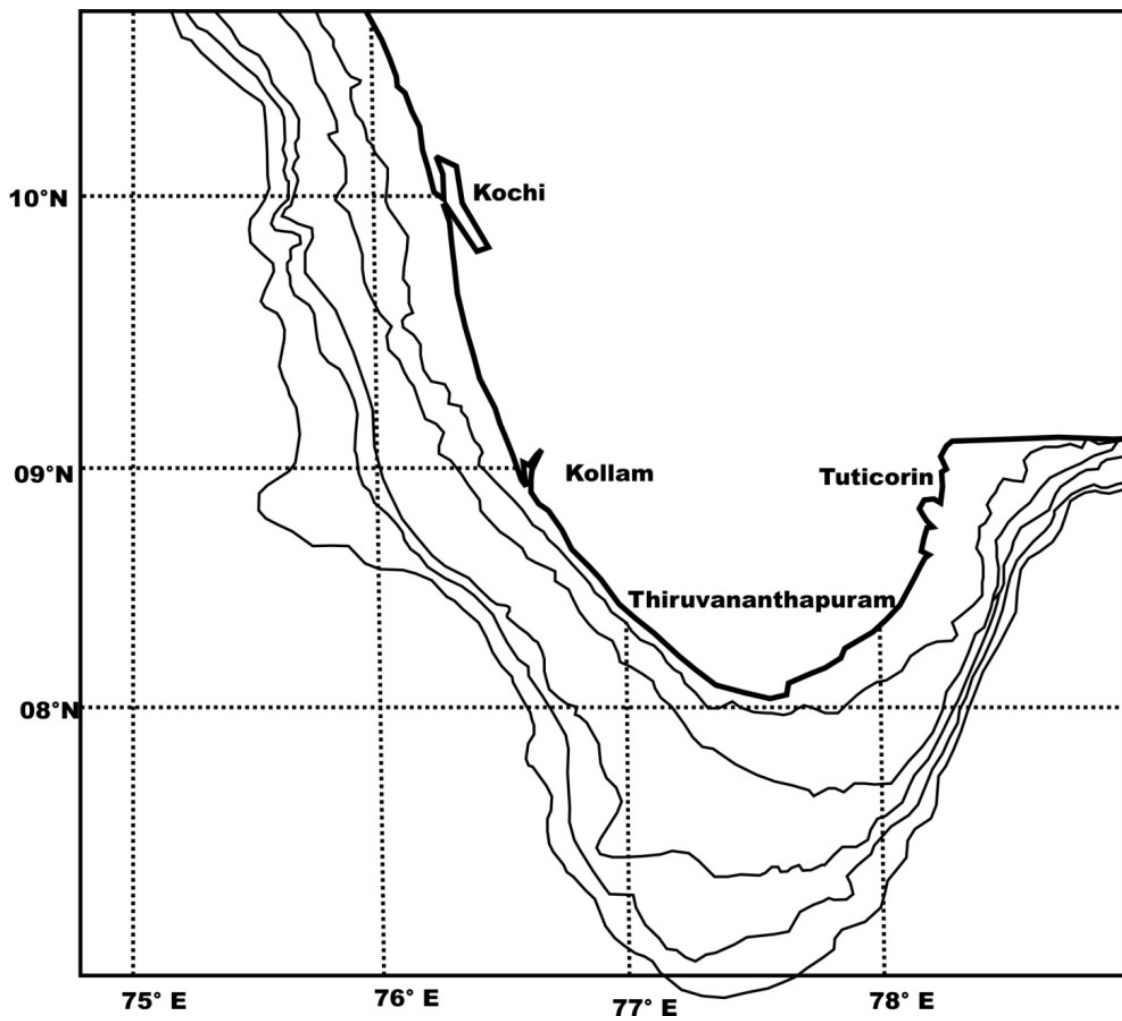
**Survey strategy:** South – west coast between 7° - 12° N and every voyage 10 days should be spent for squid jigging operation in the oceanic water of south-west coast.

**Distribution of sampling efforts:**

**Operational target per cruise**

Days out at sea:	10
Fishing days :	8

**Survey Area (7° N – 12° N)**



**Result reporting:** As per Annexure – II

**Project –I.B.2. : PELAGIC FISHERY RESOURCES SURVEY, ASSESSMENT AND MONITORING ALONG SOUTH WEST COAST**

**Project Coordinator** : Dr Sijo P. Varghese, Zonal Director

**Period** : April 2022 – March 2023

**Project objectives**

- Preparation of species inventory of pelagic fin fish and shell fish resources
- Estimation of abundance indices of pelagic resources
- Identifying spatio-temporal distribution pattern of the resources
- Study of biological parameters of important species

**Survey and Research Team**

Project Leader	Project Associates	
	Scientists	Engineer
Shri Jacob Thomas, Jr. Fisheries Scientist	Shri A. E Ayoob, Fishing Gear Technologist  Dr. Sujit Kumar Pattnayak, Sr. Scientific Assistant  Shri Solly Solomon, Sr. Scientific Assistant	Shri. Dharamvir Singh, Mech. Marine Engineer

**Base of operation** : **Cochin**

**Vessel** : MFV *Lavanika*

**Gear** : Drift gillnet with 20 m depth

**Vessel officers**

Skipper : Shri. A. Udayappan, Skipper

Chief Engineer Gr. I : Vacant

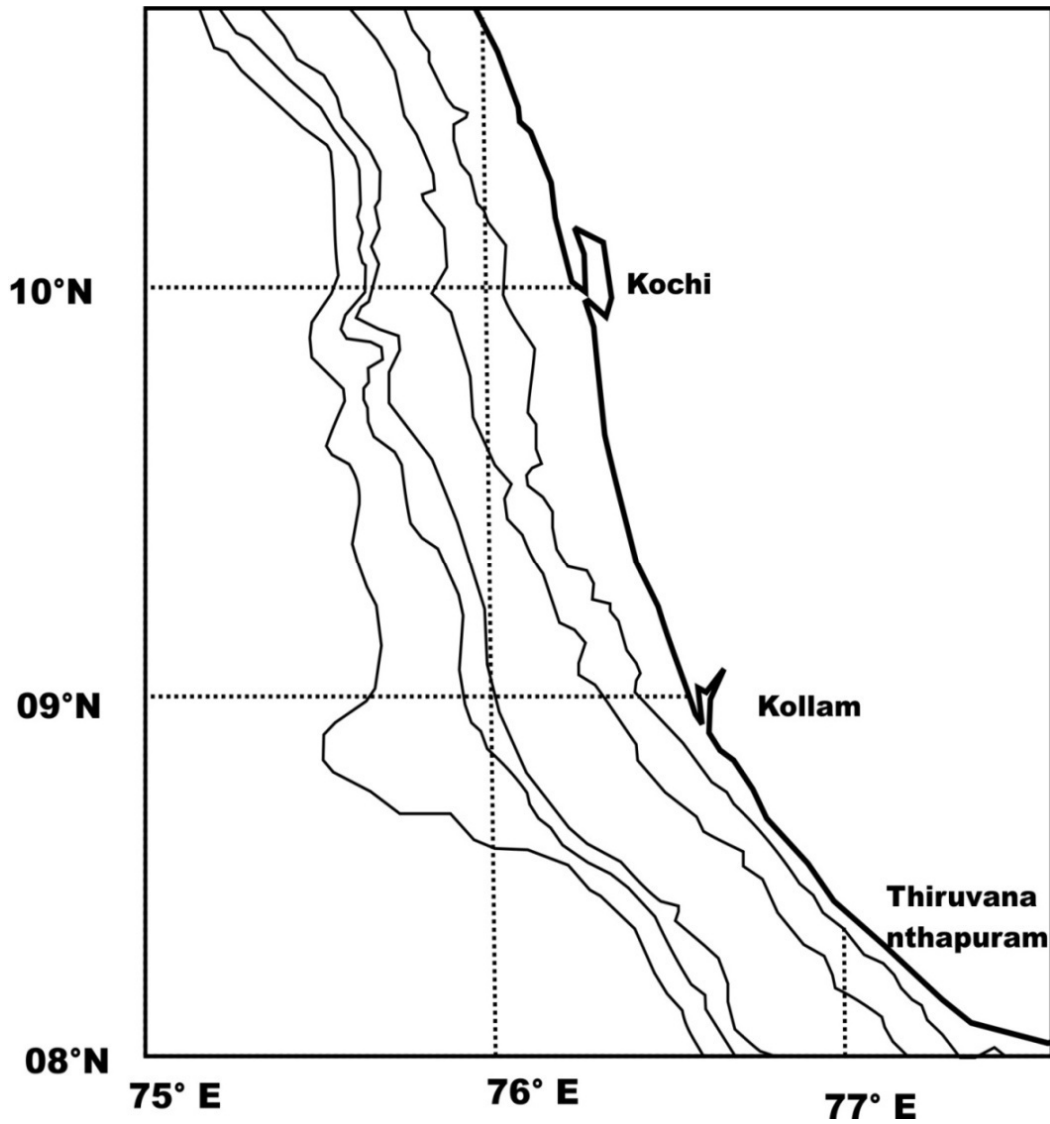
**Distribution of sampling efforts:**

Particulars	Monitoring	
	FT	ST
<b>Gear</b>		
<b>Depth zone (m)</b>	30-100	20-100
<b>No. of hauls</b>	15	10

### Physical target per cruise

No. of cruise/ month	:	01
Days out at sea	:	10
Fishing days	:	08
No. of hauls	:	08
Duration of haul	:	5 hrs immersion time

Survey Area: Lat. 8° N-11° N



Result reporting: As per Annexure – II

**Project –I.C.1.** : **TUNA RESOURCES SURVEY USING MONOFILAMENT LONGLINING ALONG THE WEST COAST OF INDIA BETWEEN LAT. 4° N AND LAT. 23° N**

**Project Coordinator** : Shri Ashok S. Kadam, Fisheries Scientist

**Period** : April 2022 – March 2023

**Project Components** : Survey of oceanic tunas and allied resources using monofilament longlining between Lat. 4° N and 23° N.

#### **Project Objectives**

- ❖ Estimation of abundance indices of oceanic tuna and allied resources
- ❖ Identifying spatio-temporal distribution pattern of the tuna and allied resources
- ❖ Study of biological parameters in respect of important species
- ❖ Stock assessment of important resources
- ❖ Study of oceanographic parameters
- ❖ Imparting training in fishing techniques and demonstrations of modern equipment onboard to the fishermen, fishing industry representatives and entrepreneurs

#### **Survey and Research Team**

<b>Project Leader</b>	<b>Project Associates</b>	
	<b>Scientists</b>	<b>Engineer</b>
Shri. A. S. Kadam, Fisheries Scientist	Shri. A. V. Tamhane, Sr. Scientific Assistant  Shri. Swapnil S. Shirke, Sr. Scientific Assistant  Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant	Shri. S. Kanthen, Service Engineer (Mech.)

**Base of operation** : **Mumbai**

**Vessel** : *Matsya Vrushti*

**Gear** : Monofilament long line with 7/8 hooks per basket

#### **Vessel officers**

**Skipper** : Shri. D. Mehalingam

**Chief Engineer Gr. I** : Vacant

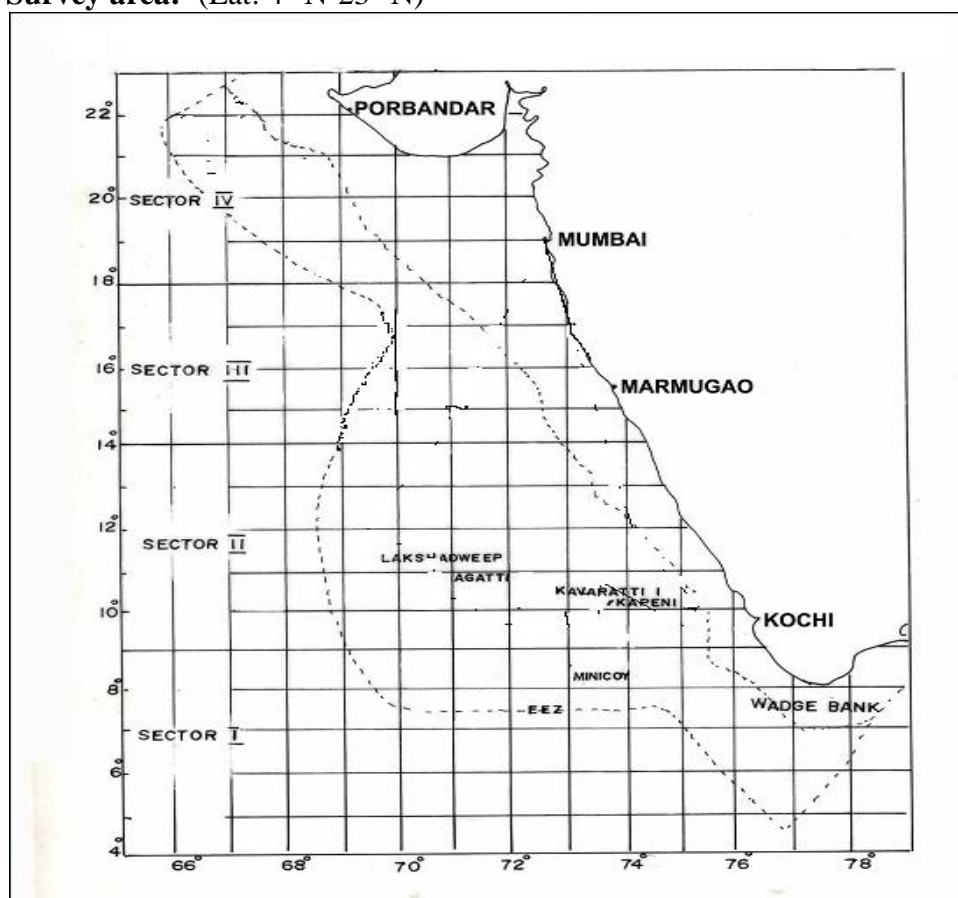
- Survey strategy:**
1. The survey area to be divided into four sectors viz. Sector- I (Lat 4° N to 9° N), Sector- II (Lat 9° N to 14° N), Sector- III (Lat 14° N to 18° N) and Sector- IV (Lat 18° N to 23° N).
  2. Survey cruises will be conducted alternatively in each sector.

**Operational target per cruise**

<b>Days Out at Sea</b>	:	20
<b>Fishing days</b>	:	12/14/16
<b>Hooks per set</b>	:	630

Sector	Area	Months	No. of sets per cruise
I	Lat. 4° N – 9° N	8, 1	12
II	Lat. 9° N – 14° N	5, 12, 3	14
III	Lat. 14° N – 18° N	4, 6, 11	16
IV	Lat. 18° N – 23° N	9, 10	16

**Survey area:** (Lat. 4° N-23° N)

**Collection of Environmental data:**

Besides the catch data and biological data being collected in long line survey, data on environmental parameters will be collected as follows:

1. Salinity, temperature and Depth (STD) data per day per set.
2. Sea surface Temperature (SST) data at every one hour interval from the commencement to completion of voyage.
3. Data on current direction and speed, one observation every day (sets are to be made at specific depth).

**Result reporting:** As per Annexure – II

**Project –I.C.2.** : **SURVEY OF OCEANIC TUNA AND ALLIED RESOURCES USING REGULAR LONG LINING AND DRIFT GILL NET FISHING IN THE INDIAN EEZ ALONG CENTRAL WEST COAST INCLUDING LAKSHADWEEP BETWEEN LAT. 8° N - 18° N**

**Project Coordinator** : Dr S. Ramachandran, Zonal Director

**Period** : April 2022 to March 2023

**Project components:**

- Survey of oceanic tuna and allied resources using regular long lining in the Indian EEZ along Central-west coast including Lakshadweep between Lat 08° N and 18° N.
- Experimental drift gill net fishing for oceanic resources along central west coast of India between Lat 08° N and 18° N.

**Project objectives:**

- ❖ Estimation of abundance index, spatio-temporal distribution, biology of tuna and allied resources of central west coast of India
- ❖ Study of oceanographic parameters in the distribution of tuna and allied resources  
Study of the biological parameters in respect of important species
- ❖ Estimation of abundance indices, spatio-temporal distribution and biology of large pelagic resources along central west coast of India
- ❖ Imparting training on tuna long line fishing to the end-users

**Survey and research team**

Project leader	Project Associates	
	Scientists	Engineer
Shri N. Unnikrishnan, Jr. Fisheries Scientist	Dr. Pradeep H. D., Fisheries Scientist  Shri Raju S. Nagpure, Sr. Scientific Assistant  Shri Nashad M., Sr. Scientific Assistant	Shri Manoj O. T., Mechanical marine Engineer

**Base of operation** : **Mormugao**

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

**Gear** : Multifilament Tuna Long line with 5 hooks/basket,  
Drift Gillnet.

**Vessel officers**

Skipper : Shri P. A. Arun Kumar

Chief Engineer Gr. I : Shri Joseph K. Ignatious

**Survey Strategy** : The survey area to be divided into two sectors viz, lat. 08° N-13° N and lat. 13° N-18° N. Vessel to cover each sector as per the distribution of sampling efforts table in alternative months.

**Distribution of sampling efforts:**

Sector	Area	Month	No. of sets per cruise
		RTL <sup>#</sup> /DGN <sup>\$</sup>	
I	Lat. 13° N-18° N	5, 9, 11, 2	16 (10 <sup>#</sup> +6 <sup>\$</sup> )
II	Lat. 08° N-13° N	4, 8, 10, 1, 3	14(10 <sup>#</sup> +4 <sup>\$</sup> )

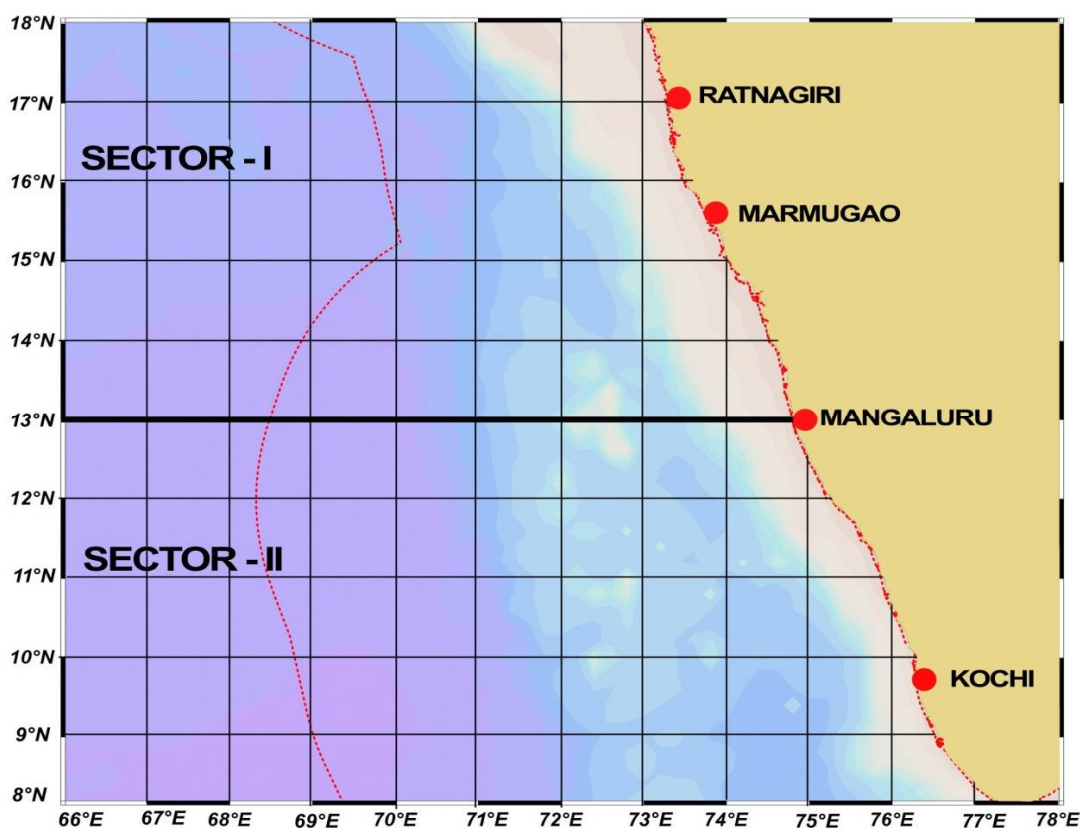
# Regular Tuna long lining

\$ Drift gill net operation

**Physical targets per cruise**

	Regular long line	Drift gill net operation
Days out at sea	20	20
Fishing days	10	04/06
Hooks per set	625	4 hrs/day/set

**Survey Area: Lat. 8° N-18° N**



**Collection of Environmental data:**

Besides the catch data and biological data being collected in long line survey, data on environmental parameters will be collected as follows:

4. Salinity, temperature and Depth (STD) data per day per set.
5. Sea surface Temperature (SST) data at every one hour interval from the commencement to completion of voyage.
6. Data on current direction and speed, one observation every day (sets are to be made at specific depth).

**Result reporting :** As per Annexure- II

**Project –I.C.3.** : **TUNA RESOURCES SURVEY USING MONOFILAMENT LONG LINING IN THE BAY OF BENGAL BETWEEN LAT. 10° N-20° N**

**Project Coordinator** : Shri A. Tiburtius, Zonal Director

**Period** : April 2022 – January 2023

**Project objectives:**

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

**Survey and Research Team:**

Project Leader	Project Associates	
	Scientists	Engineer
Dr Jeyachandra Dhas, Jr. Fisheries Scientist	Dr A.John Chembian, Jr. Fisheries Scientist  Shri Y.Tharumar, Jr. Fisheries Scientist  Dr K. Silambarasan, Sr. Scientific Assistant  Dr Roshan Maria Peter Sr. Scientific Assistant.	Shri C. Dhanunjaya Rao Mechanical Marine Engineer

**Base of operation** : **Chennai**

**Vessel** : *Matsya Drushti*

**Gear** : Monofilament longline with 7 hooks per basket

**Vessel Officers**

Skipper : Shri Bhoopathi, (Skipper In-charge)

Chief Engineer Gr. I : Shri G. Stanly Wellington

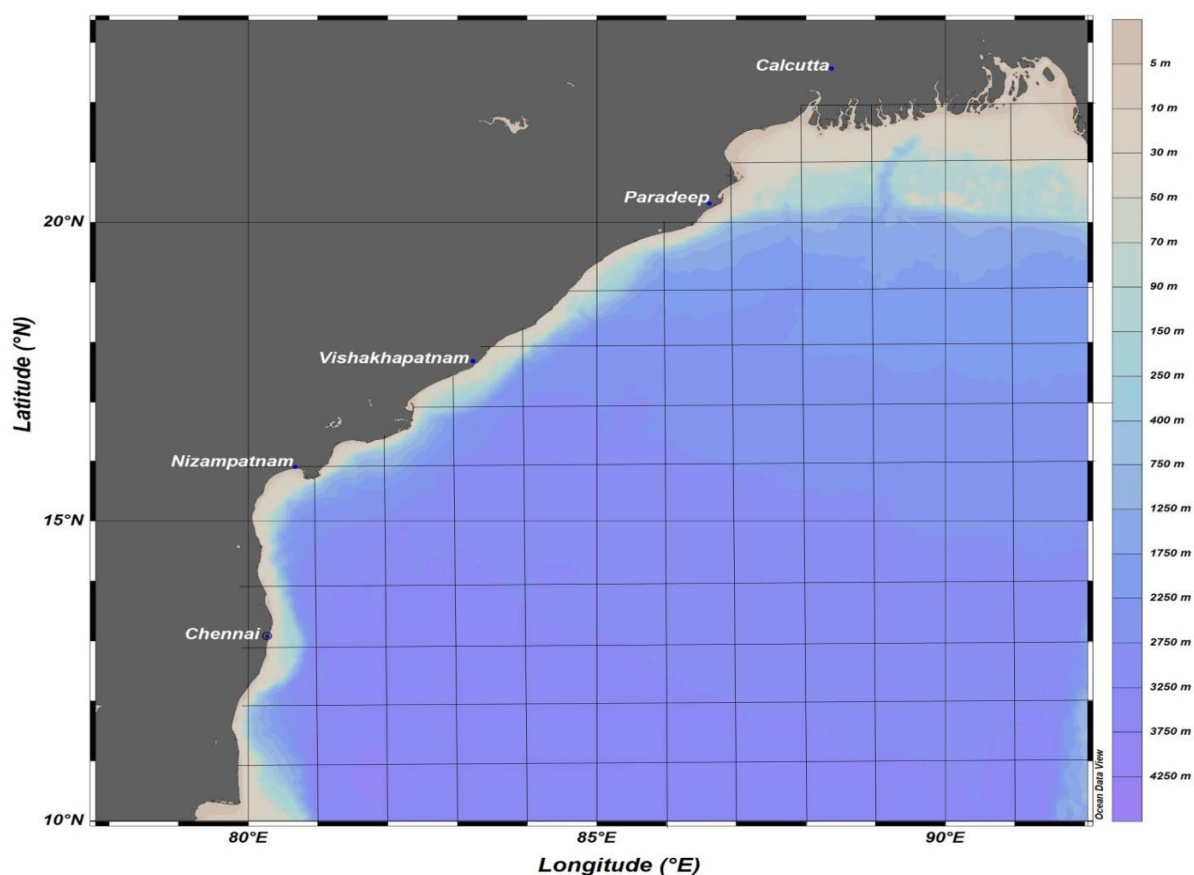
### Physical Targets per Cruise

Days out at sea : 20  
Fishing days : 12/14/15  
Hooks per set : 630

### Distribution of sampling efforts:

Sector	Region	Area	Months	No. of set per cruise
I	North East coast	Lat. 18° N-20° N	10,7,4	12
II	Central East coast	Lat. 14° N-18° N	11,12,6	14
III	South East coast	Lat. 9° N-14° N	8,5,1	15

Survey area : (Lat. 10°-20° N)



### Collection of Environmental data:

Besides the catch data and biological data being collected in long line survey, data on environmental parameters will be collected as follows:

7. Salinity, temperature and Depth (STD) data per day per set.
8. Sea surface Temperature (SST) data at every one hour interval from the commencement to completion of voyage.
9. Data on current direction and speed, one observation every day (sets are to be made at specific depth).

**Result reporting :** As per Annexure-II

**Project –I.C.4. : TUNA RESOURCES SURVEY USING MONOFILAMENT LONG LINING ALONG GULF OF MANNAR COAST**

**Project Coordinator : Shri. A. Tiburtius, Zonal Director**

**Period : February 2023**

**Project objectives:**

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

**Survey and Research Team:**

Project Leader	Project Associates	
	Scientists	Engineer
Shri Y. Tharumar, Jr. Fisheries Scientist	Dr J.Jeyachandra Dhas, Jr. Fisheries Scientist  Dr John Chembian, Jr. Fisheries Scientist  Dr. K. Silambarasan Sr. Scientific Assistant  Dr.Roshan Maria Peter Sr.Scientific Assistant.	Shri C. Dhanunjaya Rao Mechanical Marine Engineer

**Base of operation : Chennai**

**Vessel : *Matsya Drushti***

**Gear : Monofilament longline with 7 hooks per basket**

**Vessel Officers**

**Skipper : Shri Bhoopathi, (Skipper in-charge)**

**Chief Engineer Gr. I : Shri G. Stanly Wellington**

**Physical Targets per Cruise**

**Days out at sea : 20**

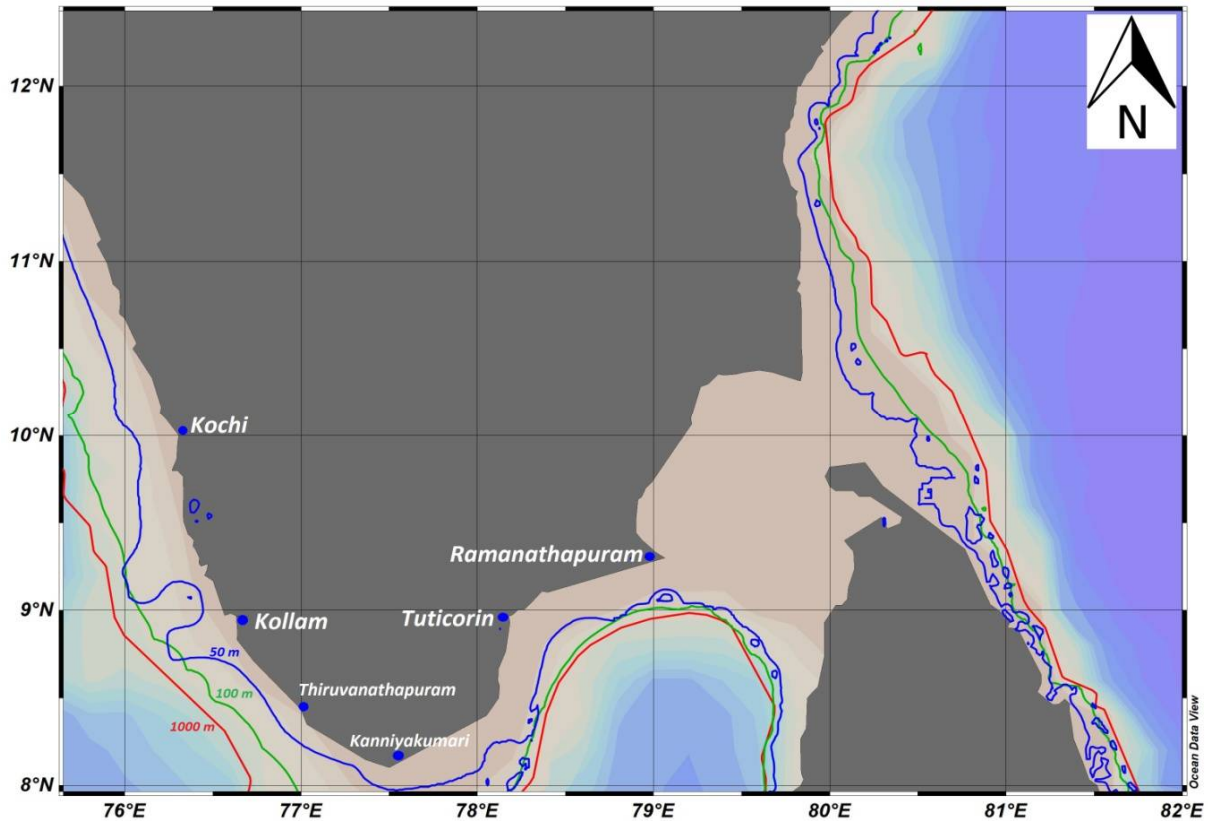
**Fishing days : 12/14/15**

**Hooks per set : 630**

### Distribution of sampling efforts:

Sector	Region	Months	No. of set per cruise
I	Gulf of Mannar Coast	2	12

### Survey area:



### Collection of Environmental data:

Besides the catch data and biological data being collected in long line survey, data on environmental parameters will be collected as follows:

- I. Salinity, temperature and Depth (STD) data per day per set.
- II. Sea surface Temperature (SST) data at every one hour interval from the commencement to completion of voyage.
- III. Data on current direction and speed, one observation every day (sets are to be made at specific depth).

**Result reporting :** As per Annexure-II

**Project –I.C.5. : SURVEY OF OCEANIC TUNA AND ALLIED RESOURCES AND PERCH RESOURCES BY DIFERENT TECHNIQUES IN A & N WATERS**

**Project Coordinator :** Dr. Vinod Kumar Mudumala, Zonal Director

**Period :** April 2022 – March 2023

**Project objectives:**

- ❖ Estimation of abundance indices of oceanic tuna, swordfish, perches and allied resources
- ❖ Identifying spatio-temporal distribution pattern of the above resources
- ❖ Study of biological parameters in respect of important species
- ❖ Study of oceanographic and meteorological parameters influencing tuna & swordfish distribution
- ❖ Study of migration pattern of yellowfin tuna
- ❖ Experiment with modified deep longline gear for surveying stock status of Big-eye tuna resources in Andaman waters
- ❖ Imparting training in fishing techniques and demonstrations of modern equipment on board, to the fishermen, fishing industry representative and entrepreneurs

**Survey and Research Team:**

Project Leader	Project Associates	
	Scientists	Engineer
Dr. Vinod Kumar Mudumala, Zonal Director	Shri. Puran Singh, Sr. Scientific Assistant  Shri Rahulkumar B. Tailor, Sr. Scientific Assistant	Shri Rajendra B. Dokare, Service Engineer (Mech)

**Base of operation :** Port Blair

**Vessel :** MFV *Blue Marlin*

**Gear :**

- (i) Multifilament tuna long line with 5 hooks per basket.
- (ii) Modified Deep long line with 7/9 hooks per basket.
- (iii) Drift longline with light sticks
- (iv) Bottom set vertical long line with 30 hooks per basket.

**Vessel Officers**

**Skipper :** Shri. K. P. Vinoji, Skipper

**Chief Engineer Gr. I :** Vacant

### Physical Target per Cruise

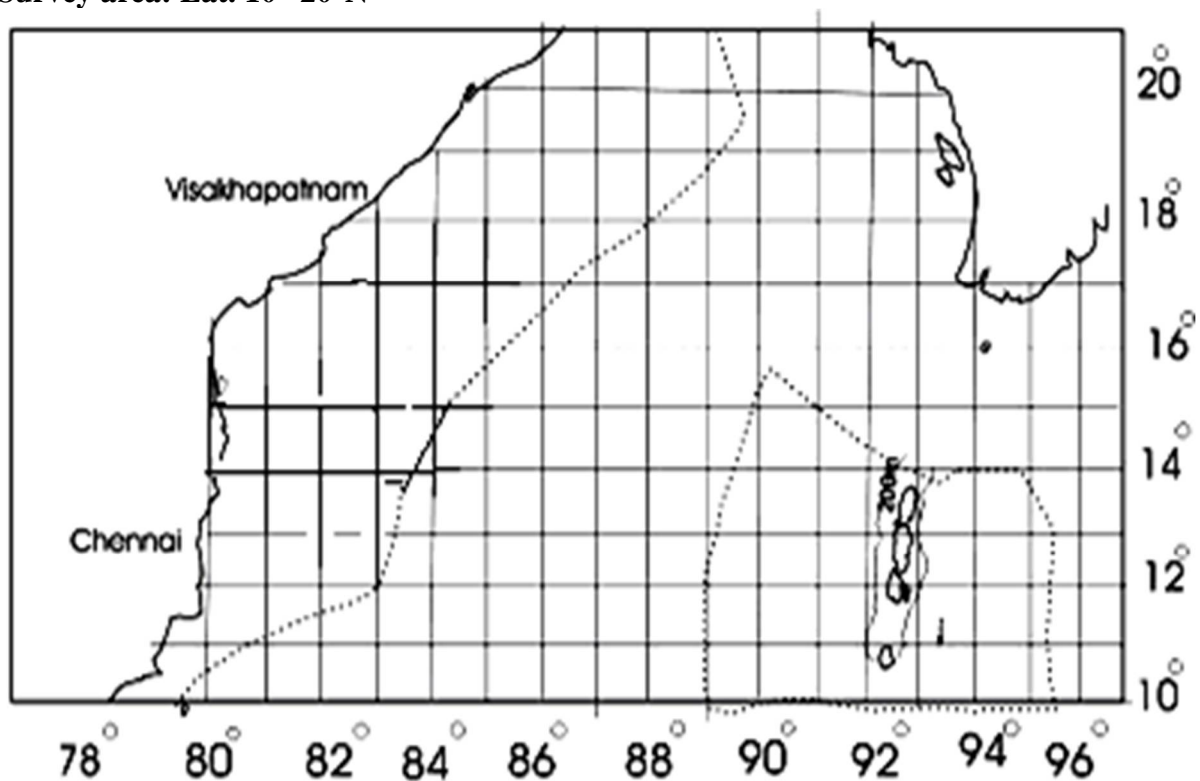
Days out at sea : 20  
Fishing days : 16 (Andaman waters) /14 (Nicobar waters)  
Hooks per set : 625

### Distribution of Sampling Efforts:

Project Area	Latitude	Month	No. of sets/cruise
Andaman Waters	10° - 15° N	04 <sup>#</sup> , 05 <sup>#</sup> , 07 <sup>♣</sup> , 11 <sup>#</sup> , 1 <sup>◇</sup> , 3 <sup>◎</sup>	16
Nicobar waters	05° - 10° N	6 <sup>♣</sup> , 8 <sup>◎</sup> , 10 <sup>#</sup> , 12 <sup>◇</sup> , 2 <sup>#</sup>	14

- # Regular tuna longline
- ♣ Bottom set vertical longline
- ◎ Modified Deep long line
- ◇ Drift longline with light sticks

Survey area: Lat. 10°-20°N



### Collection of Environmental Data:

Besides the catch data and biological data being collected in longline survey, data on environmental parameters will be collected as follows:

- i. Salinity, Temperature and Depth (STD) data per day per set.
- ii. Sea Surface Temperature (SST) data at every one hour interval from the commencement to completion of voyage.
- iii. Data on current direction and speed, one observation every day (sets are to be made at specific depth).

**Result reporting:** As per Annexure – II

**Project –I.D.1.** : **EXPERIMENTAL BOTTOM SET VERTICAL LONGLINE FISHING FOR PERCH RESOURCES OF THE CENTRAL WEST COAST OF INDIA INCLUDING LAKSHADWEEP BETWEEN LATITUDE 08° N - 18° N**

**Project Coordinator** : Dr S. Ramachandran, Zonal Director

**Period** : June 2022 to July 2022

**Project Components:**

- Survey of perch resources by using bottom set vertical long line along central west coast including Lakshadweep between Lat 08° N and 18° N

**Project Objectives :**

1. Survey of perch resources by using bottom set vertical longline along central west coast including Lakshadweep between Lat 08° N and 18° N
2. Estimation of abundance indices of perch resources

**Survey and Research Team**

Project leader	Project Associates	
	Scientists	Engineer
Shri N. Unnikrishnan, Jr. Fisheries Scientist	Dr Pradeep H. D., Fisheries Scientist  Shri Raju S. Nagpure, Sr. Scientific Assistant  Shri Nashad M., Sr. Scientific Assistant	Shri Manoj O. T., Mechanical marine Engineer

**Base operation** : **Mormugao**

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

**Gear** : Bottom set vertical longline with 30 hooks/basket

**Vessel Officers**

Skipper : Shri P. A. Arun Kumar

Chief Engineer Gr. I : Shri Joseph K. Ignatious

**Survey Strategy** : The survey area to be divided into two sectors viz, lat 08° N-13° N and lat. 13° N to 18° N. Vessel to cover each sector as per the distribution of sampling efforts shown in table.

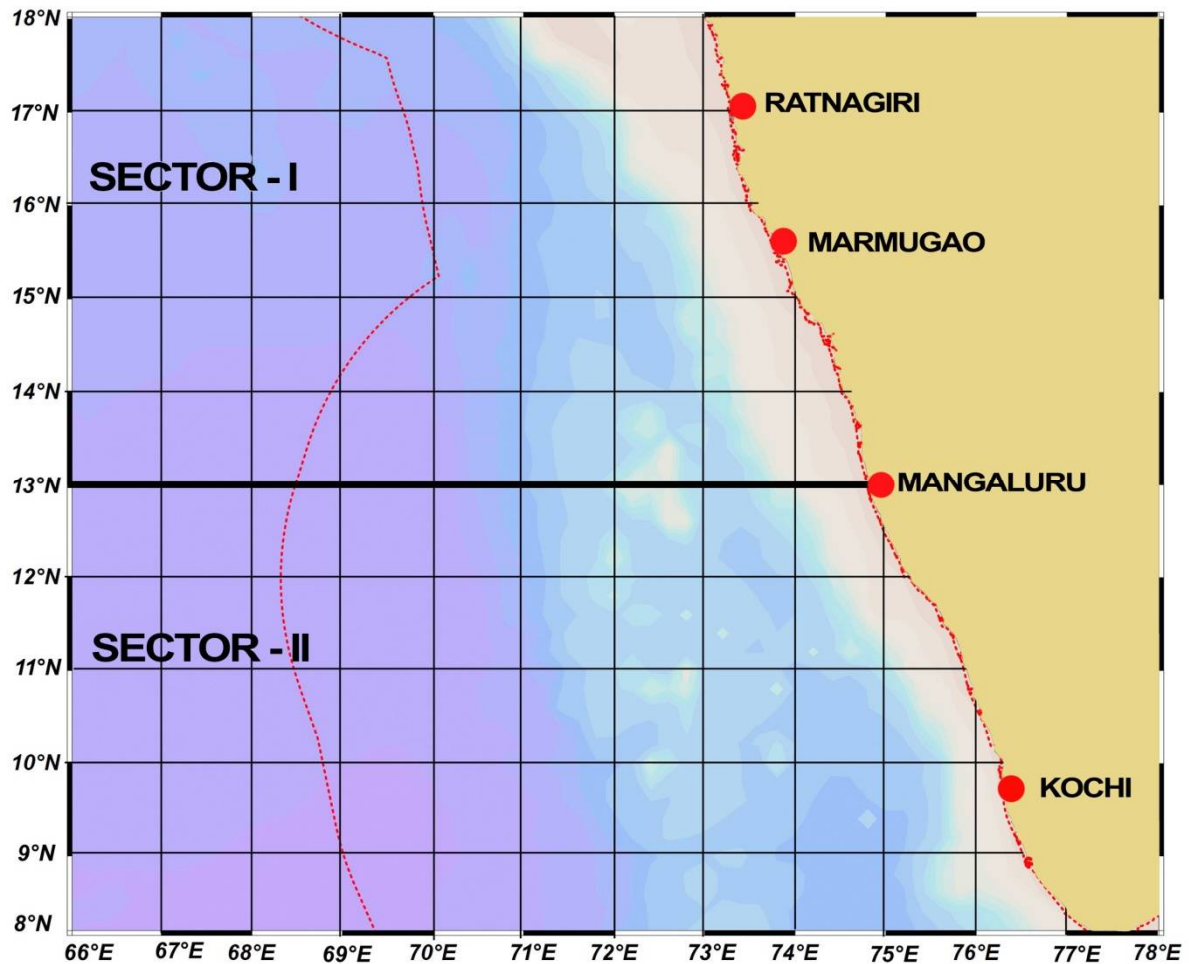
**Distribution of sampling efforts:**

Sector	Area	Month	No. of sets per cruise
I	Lat. 13° N to 18° N	7	16
II	Lat. 08° N-13° N	6	14

### Physical targets per cruise

Days out at sea : 20  
Fishing days : 14/16  
Hooks per set : 625

### Survey Area: Lat. 8° N-18° N



### Collection of Environmental data:

Besides the catch data and biological data being collected in long line survey, data on environmental parameters will be collected as follows:

1. Salinity, temperature and Depth (STD) data per day per set.
2. Sea surface Temperature (SST) data at every one hour interval from the commencement to completion of voyage.
3. Data on current direction and speed, one observation every day (sets are to be made at specific depth).

**Result reporting :** As per Annexure-II

**I. E. MAINTENANCE PROGRAMME 2022-23**

<b>Sl. No.</b>	<b>Vessel</b>	<b>Programme</b>
I. E.1	MFV <i>Matsya Nireekshani</i>	Annual Planned Maintenance Programme
I. E.2	MFV <i>Sagarika</i>	Dry-docking and Annual Planned Maintenance Programme
I.E.3	MFV <i>Matsya Varshini</i>	Annual Planned Maintenance Programme
I.E.4	MFV <i>Lavanika</i>	Dry-docking and Annual Planned Maintenance Programme
I.E.5	MFV <i>Samudrika</i>	Dry-docking and Annual Planned Maintenance Programme
I.E.6	MFV <i>Matsya Shikari</i>	Dry-docking and Annual Planned Maintenance Programme
I.E.7	MFV <i>Matsya Darshini</i>	Annual Planned Maintenance Programme
I.E.8	MFV <i>Yellow Fin</i>	Annual Planned Maintenance Programme
I.E.9	MFV <i>Blue Marlin</i>	Annual Planned Maintenance Programme
I.E.10	MFV <i>Matsya Vrushti</i>	Annual Planned Maintenance Programme
I.E.11	MFV <i>Matsya Drushti</i>	Annual Planned Maintenance Programme

**I.E.1. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Matsya Nireekshani**  
**Base of operation : Mumbai Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs												
Main Engine		#						#				
Aux. Engine(P)				#						#		
Aux. Engine(S)												
Harbour Engine						#						#
Generator(P)			#						#			
Generator(S)				#								#
Ref. Compr – I			#								#	
Ref. Compr – II												
A.C. Compressor												
Bait room Compressor					#							
General Maintenance												

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.2. : DRY-DOCKING & ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Sagarika**  
**Base of operation : Mormugao Base**

	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
Dry-docking & Afloat Repairs								///-DDR				
Main Engine			#							#		
Aux. Engine (1)										#		
Aux. Engine (2)										O		#
Harbour Engine												
Generator (1)			#						O		#	
Generator (2)									O		#	
Harbour Generator												
Ref. Compr – I			#							O		#
Ref. Compr – II												
Air conditioning Plant												
Bait room Compressor												
General Maintenance												

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.3. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Matsya Varshini**

**Base of operation : Cochin Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs												
Main Engine					#				O			
Aux. Engine(P)					#					#		
Aux. Engine(S)					#					#		
Generator(P)					#					#		
Generator(S)					#					#		
Ref. Compr – I					#							
Ref. Compr – II					#							
Bait room Compressor												
General Maintenance					GM							

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.4. : DRY-DOCKING & ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Lavanika**

**Base of operation : Cochin Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs							///DDR					
Main Engine		#			#				#			
Aux. Engine(P)	O				#				#			
Aux. Engine(S)					#				#			
Generator(P)								O				
Generator(S)								O				
Ref. Compr – I								O				
Ref. Compr – II								O				
Bait room Compressor												
General Maintenance									GM			

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.5. : DRY-DOCKING & ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Samudrika**

**Base of operation : Chennai Base**

	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
Dry-docking & Afloat Repairs							///-DDR- Afloat repairs					
Main Engine			#			#			#			#
Aux. Engine(P)	#			#			#			#		
Aux. Engine(S)		#			#			#			#	
Generator(P)			#				#					#
Generator(S)				#					#			
Ref. Compr – I	#					#						#
Ref. Compr – II			#				#				#	
Bait room Compressor	#				#				#			
General Maintenance		#				#				#		

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.6. : DRY-DOCKING & ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Matsya Shikari**

**Base of operation : Visakhapatnam Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs						///-DDR						
Main Engine	#		O			#				#		
Aux. Engine(P)		#			O			#				#
Aux. Engine(S)												
Generator(P)							O					
Generator(S)							O					
Ref. Compr – I	#		O		#				#			
Ref. Compr – II		#				#			O	#		
Bait room Compressor												
General Maintenance												

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.7. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Matsya Darshini**

**Base of operation : Visakhapatnam Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs												
Main Engine		#			#			O			#	
Aux. Engine(P)	#			#			#			#		
Aux. Engine(S)			#					#				#
Generator(P)	#			#			#			#		
Generator(S)			#					#				#
Ref. Compr – I		#		O		#			#			
Ref. Compr – II					#			#			#	
Bait room Compressor												
General Maintenance												

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.8. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Yellow Fin**  
**Base of operation : Mormugao Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs												
Main Engine			#						O			
Aux. Engine (P)				#				#				#
Aux. Engine (S)				#					#			
Generator (P)			#			#					#	
Generator (S)		#			#				#			
Harbour Generator												
Ref. Compr – I									O			#
Ref. Compr – II			#					#				
Air conditioning Plant												
Bait room Compressor												
General Maintenance									GM			

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.9. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Blue Marlin**  
**Base of operation : Port Blair Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs												
Main Engine					#			#				#
Aux. Engine(P)												
Aux. Engine(S)			#			O		#			#	
Generator(P)		#							#			
Generator(S)				#					#			
Ref. Compr – I			#					#			O	
Ref. Compr – II			#									
Bait room Compressor												
General Maintenance						GM						

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.10. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Matsya Vrushti**

**Base of operation : Mumbai Base**

	<b>Apr 22</b>	<b>May 22</b>	<b>Jun 22</b>	<b>Jul 22</b>	<b>Aug 22</b>	<b>Sep 22</b>	<b>Oct 22</b>	<b>Nov 22</b>	<b>Dec 22</b>	<b>Jan 23</b>	<b>Feb 23</b>	<b>Mar 23</b>
Dry-docking & Afloat Repairs												
Main Engine			#								O	
Aux. Engine(P)		O										
Aux. Engine(S)			O									
Harbour Engine				#								
Generator(P)				#					#			
Generator(S)					#					#		
Ref. Compr – I		#										
Ref. Compr – II						#						
A.C. Compressor	#				#				#			
Bait room Compressor			#				#					
General Maintenance												

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I.E.11. : ANNUAL PLANNED MAINTENANCE PROGRAMME  
FOR THE YEAR 2022-2023**

**Name of the Vessel : MFV Matsya Drushti**  
**Base of operation : Chennai Base**

	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
Dry-docking & Afloat Repairs												
Main Engine		#					#					O
Aux. Engine(P)	#				#	O			#			
Aux. Engine(S)			#			O		#				#
Harbour Engine				#							#	
Generator(P)		#				#				#		
Generator(S)				#					#			
Harbour Generator			#								#	
Ref. Compr – I		#				#						#
Ref. Compr – II			#			#			#			
Air conditioning Plant	#			#			#			#		
Bait room Compressor		#			#				#			
General Maintenance	#					#					#	

**O- Overhauling # -Inspection/Minor Repair /// – Dry-docking/Afloat Repairs, GM- General Maintenance.  
All other machinery Repairs/minor works as and when required.**

**I. F. : OPERATIONAL TARGETS FOR THE YEAR 2022-2023**

<b>Vessel</b>	<b>No. of Voyages</b>	<b>Days out at sea</b>	<b>Fishing Days</b>	<b>Bottom trawling (sampling hours)</b>	<b>Tuna longlining (hooks)</b>	<b>Experimental gear operation</b>
<i>Matsya Nireekshani</i>	11	220	176	825	-	-
<i>Sagarika</i>	09	180	144	675	-	-
<i>Matsya Varshini</i>	10	200	160	750	-	-
<i>M F V Lavanika</i>	18	180	144	675	-	-
<i>M F V Samudrika</i>	09	180	144	675	-	-
<i>Matsya Darshini</i>	10	200	160	750	-	*Acoustic survey
<i>Matsya Shikari</i>	09	180	144	675	-	-
<i>M F V Yellow Fin</i>	11	220	164	-	56,250	Regular Tuna longline- 56,250 hooks Drift Gill net- 176 hrs Bottom set vertical Longline- 18,750 hooks
<i>M F V Blue Marlin</i>	11	220	166	-	66,250	Regular Tuna longline- 47,500 hooks Modified deep longline- 18,750 hooks Drift Longline- 18,750 hooks Bottom set vertical Longline- 18,750 hooks
<i>Matsya Vrushti</i>	10	200	146	-	91,980	-
<i>Matsya Drushti</i>	10	200	137	-	86,310	-
<b>Total</b>	<b>117</b>	<b>2180</b>	<b>1685</b>	<b>5385</b>	<b>3,00,790</b>	<b>RTL – 103750; DGN – 27500; DL – 18750; BSVL – 37500; MDL – 18750</b>

**I.G. : MONTH-WISE TARGET OF OPERATIONAL DAYS: 2022-23**

Year	2022									2023			Total
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
<i>Matsya Nireekshani</i>	GM	20	20	20	20	20	20	20	20	20	20	20	<b>220</b>
<i>Sagarika</i>	20	20	20	20	20	20	20	DDR		O	20	20	<b>180</b>
<i>Matsya Varshini</i>	20	20	20	20	GM	20	20	20	O	20	20	20	<b>200</b>
<i>Lavanika</i>	20	20	20	20	20	20	DDR		GM	20	20	20	<b>180</b>
<i>Samudrika</i>	ME O	20	20	20	20	20	DDR		20	20	20	20	<b>180</b>
<i>Matsya Darshini</i>	20	20	20	20	20	20	20	ME O	20	20	GM	20	<b>200</b>
<i>Matsya Shikari</i>	20	20	O	20	20	DDR		20	20	20	20	20	<b>180</b>
<i>Yellow Fin</i>	20	20	20	20	20	20	20	20	ME O	20	20	20	<b>220</b>
<i>Blue Marlin</i>	20	20	20	20	20	GM	20	20	20	20	20	20	<b>220</b>
<i>Matsya Vrushti</i>	20	20	20	GM	20	20	20	20	20	20	ME O	20	<b>200</b>
<i>Matsya Drushti</i>	20	20	20	20	20	O	20	20	20	20	20	ME O	<b>200</b>

O- Overhauling, ME O- Main Engine Overhauling, DDR– Dry-docking/Afloat Repairs, GM- General Maintenance.

**I.H. : PROPOSED SCIENTIST PARTICIPANTION FOR THE YEAR 2022-23**

Base	Vessel	Apr 22	May 22	Jun 22	Jul 22	Aug 22	Sep 22	Oct 22	Nov 22	Dec 22	Jan 23	Feb 23	Mar 23
<b>Mumbai</b>	<i>M. Nireekshani</i>	GM	H. D. Joshi	To be posted*	To be posted*	S. S. Shirke	To be posted*	H. D. Joshi	To be posted*	A. V. Tamhane	To be posted*	S. S. Shirke	A. V. Tamhane
	<i>M. Vrushi</i>	A. V. Tamhane	S. S. Shirke	To be posted*	GM	A. V. Tamhane	H. D. Joshi	To be posted*	S. S. Shirke	To be posted*	H. D. Joshi	ME overhauling	Women Joint participation
<b>Mormugao</b>	<i>Yellow fin</i>	N. Unnikrishnan	H. D. Pradeep	Nashad. M	N. Unnikrishnan	To be posted*	H. D. Pradeep	Nashad. M	Raju S Nagpure	ME overhauling	N. Unnikrishnan	To be posted*	Raju S Nagpure
	<i>Sagarika</i>	Raju S Nagpure	To be posted*	H. D. Pradeep	Raju S Nagpure	Nashad. M	To be posted*	N. Unnikrishnan	Dry Docking		GM	Nashad. M	H. D. Pradeep
<b>Cochin</b>	<i>M. Varshini</i>	Solly Solomon	S. K. Pattnayak	Jacob Thomas	A. E. Ayoob	GM	Solly Solomon	S. K. Pattnayak	Jacob Thomas	ME overhauling	A. E. Ayoob	S. K. Pattnayak	Jacob Thomas
<b>Chennai</b>	<i>M. Drushti</i>	A.J. Chembian	J. C. Dhas	K. Silambarasan	To be posted*	Y. Tharumar	AE overhauling	A.J. Chembian	J. C. Dhas	K. Silambarasan	Women Joint participation	Y. Tharumar	ME overhauling
	<i>Samudrika</i>	ME overhauling	Y. Tharumar	To be posted*	A.J. Chembian	J. C. Dhas	K. Silambarasan	Dry Docking		Y. Tharumar	A.J. Chembian	J. C. Dhas	K. Silambarasan
<b>Visakha-patnam</b>	<i>M. Shikari</i>	G.V.A. Prasad	A.B. Kar	ME overhauling	Pratyush Das	G.V.A. Prasad	Dry Docking		A.B. Kar	To be posted*	Pratyush Das	To be posted*	G.V.A. Prasad
	<i>M. Darshini</i>	Pratyush Das	To be posted*	To be posted*	Ref. comp. overhauling	A.B. Kar	To be posted*	Pratyush Das	ME overhauling	G.V.A. Prasad	A.B. Kar	GM	To be posted*
<b>Port Blair</b>	<i>Blue Marlin</i>	Rahulkumar Tailor	To be posted*	Puran Singh	Rahulkumar Tailor	Puran Singh	GM	To be posted*	Rahulkumar Tailor	Puran Singh	To be posted*	Rahulkumar Tailor	Puran Singh

\*Keeping in view of acute shortage of scientific manpower, the deputation of Scientist participant may be arranged based on mutual consent of Bases as well as HQ.  
GM- General Maintenance.

**I.I. : TARGETS FOR SCIENTIST PARTICIPATION ONBOARD SURVEY VESSEL  
FOR THE YEAR 2022-23**

<b>Bases/ Headquarters</b>	<b>Designation</b>	<b>No. of voyages</b>	<b>No. of days</b>
Bases	Sr. Fisheries Scientist	3	60
	Fisheries Scientist/ Fishing Gear Technologist/ Jr. Fisheries Scientist	4	80
	Sr. Scientific Assistant/ Jr. Fishing gear Technologist	4	80
Headquarters	Sr. Fisheries Scientist/ Fisheries Scientist	1	20
	Jr. Fisheries Scientist/ Sr. Scientific Assistant	2	40

## **I.J. : INTER-INSTITUTIONAL PROJECTS**

### **I.J.1. : STOCK STRUCTURE INVESTIGATION ON YELLOW FIN TUNA, FROM THE EEZ OF INDIA AND THE ADJACENT HIGH SEAS USING GENOMIC TOOLS**

Government of India has conveyed the administrative approval for the project namely “*Stock Structure Investigation on yellow fin tuna, from the EEZ of India and the adjacent high seas using genomic tools*” jointly conducted by Fishery Survey of India (FSI) and ICAR-CMFRI under the Central Sector Schemes Component of ‘Pradhan Mantri Matsya Sampada Yojana’ (PMMSY): A scheme to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India during the financial year 2021-22. Further, 1<sup>st</sup> installment of ₹ 10,47,250/- ( Ten Lakhs Forty Seven Thousand Two Hundred and Fifty only) has already been released and credited to the designated account of ICAR-CMFRI. Total sanctioned grant for the project is ₹ 49.61 lakhs.

The major objectives of the project are;

- To detect sub-population structuring in Yellowfin tuna in the India’s EEZ and adjacent high seas.
- To identify highly differentiated SNP’s so as to develop a tool for detection of catch provenance.
- To disseminate findings to the Department of Fisheries, Govt. of India as reports and publications in peer reviewed journals.
- Suggest management and conservation measures to prevent over-exploitation of Yellowfin tuna fishery in the Indian EEZ.

## **I.J.2. : MARINE MAMMAL STOCK ASSESSMENTS IN INDIA**

Government of India has conveyed the administrative approval to the FSI for the project namely “*Marine Mammal Stock Assessments in India*” in collaboration with ICAR-CIFT (Central Institute of Fisheries Technology) and MPEDA-NETFISH at a total cost of ₹ 7,10,93,940/- ( Seven Crore Ten Lakh Ninety Three Thousand Nine Hundred and Forty Only) under the Central Sector Scheme Component of the ‘Pradhan Mantri Matsya Sampada Yojana’ (PMMSY): A scheme to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India during the financial year 2021-22 as 100% Central Assistance.

The major objectives of the project are;

- Document on marine mammal abundance, bycatch and mortalities.
- Document on suggestions on reducing incidental capture and mortality of marine mammals.
- Characterization of marine mammals (cetacean) in the Indian EEZ at different season.
- Examine relationship between marine mammal spatial distribution and oceanic features.
- A series of data on the abundance, distribution and habitat of marine mammals off the coast of India and to answer the following questions;  
How does abundance and diversity change with distance from the coast?  
What are the species that occur coastal and off shore of India?  
How does the species partition the available habitat?
- Submission of annual marine mammal stock assessment report to NOAA USA.

## ANNEXURE-I

## SPECIES SELECTED FOR BIOLOGICAL STUDIES

Sl. No	Name of the Base	Project Leader	Project Associates	Name of Species
1.	Mumbai	Shri A.S. Kadam, Fisheries Scientist	Shri Amod V. Tamhane, Sr. Scientific Assistant  Shri Swapnil S. Shirke, Sr. Scientific Assistant  Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant	<i>Thunnus albacares</i> <i>Katsuwonus pelamis</i> <i>Thunnus obesus</i> <i>Istiophorus platypterus</i> <i>Xiphias gladius</i> <i>Makaira mazara</i> <i>Makaira indica</i> <i>Tetrapturus audax</i> <i>Alopias pelagicus</i> <i>Galeocerdo cuvieri</i>
		Shri A.S. Kadam, Fisheries Scientist	Shri Amod V. Tamhane, Sr. Scientific Assistant  Shri Swapnil S. Shirke, Sr. Scientific Assistant  Dr. Harshavardhan D. Joshi, Sr. Scientific Assistant	<i>Rastrelliger kanagurta</i> <i>Nemipterus japonicus</i> <i>Saurida tumbil</i> <i>Priacanthus hamrur</i> <i>Decapterus russelli</i> <i>Megalaspis cordyla</i> <i>Upeneus moluccensis</i> <i>Metapenaeus monoceros</i> <i>Arius thalassinus</i> <i>Sphyaena obtusata</i>
2.	Mormugao	Dr. S. Ramachandran, Zonal Director	Dr. H.D. Pradeep, Fisheries Scientist  Shri N. Unnikrishnan, Jr. Fisheries Scientist  Shri Raju S. Nagpure Scientific Assistant  Shri Nashad M, Sr. Scientific Assistant	<i>Thunnus albacares</i> <i>Katsuwonus pelamis</i> <i>Thunnus obesus</i> <i>Istiophorus platypterus</i> <i>Xiphias gladius</i> <i>Makaira mazara</i> <i>Makaira indica</i> <i>Tetrapturus audax</i> <i>Alopias pelagicus</i> <i>Galeocerdo cuvieri</i>
		Dr. H.D. Pradeep, Fisheries Scientist	Shri N. Unnikrishnan, Jr. Fisheries Scientist  Shri Raju S. Nagpure Scientific Assistant  Shri Nashad M, Sr. Scientific Assistant	<i>Decapterus russelli</i> <i>Epinephelus diacanthus</i> <i>Priacanthus hamrur</i> <i>Nemipterus japonicus</i> <i>Nemipterus mesoprion</i> <i>Rastrelliger kanagurta</i> <i>Sphyaena obtusata</i> <i>Megalaspis cordyla</i> <i>Arius thalassinus</i> <i>Loligo duvaucelli</i>

Sl. No	Name of the Base	Project Leader	Project Associates	Name of Species
3.	Cochin	Dr. Sijo P. Varghese, Zonal Director	Shri A.E. Ayoob, Jr. Fishing Gear Technologist  Shri Jacob Thomas Jr. Fisheries Scientist  Dr. S. K. Pattnayak Sr. Scientific Assistant  Shri Solly Solomon Sr. Scientific Assistant	<i>Nemipterus japonicus</i> <i>Nemipterus randalli</i> <i>Epinephelus diacanthus</i> <i>Decapterus russelli</i> <i>Saurida undosquamis</i>
		Dr. Sijo P. Varghese, Zonal Director	Shri A.E. Ayoob, Jr. Fishing Gear Technologist  Shri Jacob Thomas Jr. Fisheries Scientist  Dr. S. K. Pattnayak Sr. Scientific Assistant  Shri Solly Solomon Sr. Scientific Assistant	<i>Priacanthus hamrur</i> <i>Sphyraena jello</i> <i>Selar crumenophthalmus</i> <i>Alepes djedaba</i> <i>Saurida tumbil</i>
4.	Chennai	Dr. A. John Chembian, Jr. Fisheries Scientist	Dr. Jayachandra Dhas, Jr. Fisheries Scientist  Shri Y. Tharumar, Jr. Fisheries Scientist  Dr. K. Silambarasan Sr. Scientific Assistant  Miss Roshan Maria Peter Sr. Scientific Assistant	<i>Gazza minuta</i> <i>Pentaprion longimanus</i> <i>Decapterus russelli</i> <i>Nemipterus japonicus</i> <i>Saurida undosquamis</i> <i>Priacanthus hamrur</i> <i>Dussumeria acuta</i> <i>Upeneus moluccensis</i>
		Dr. Jayachandra Dhas, Jr. Fisheries Scientist	Dr. A. John Chembian, Jr. Fisheries Scientist  Shri Y. Tharumar, Jr. Fisheries Scientist  Dr. K. Silambarasan Sr. Scientific Assistant  Miss Roshan Maria Peter Sr. Scientific Assistant	<i>Thunnus albacares</i> <i>Katsuwonus pelamis</i> <i>Thunnus obesus</i> <i>Istiophorus platypterus</i> <i>Xiphias gladius</i> <i>Makaira mazara</i> <i>Makaira indica</i> <i>Alopias pelagicus</i> <i>Galeocerdo cuvieri</i>

Sl. No	Name of the Base	Project Leader	Project Associates	Name of Species
5.	Visakhapatnam	Dr. A. B. Kar, Fisheries Scientist	Shri G.V.A. Prasad, Jr. Fisheries Scientist  Shri Pratyush Das, Jr. Fishing Gear Technologist	<i>Nemipterus japonicus</i> <i>Upeneus vittatus</i> <i>Rastrelliger kanagurta</i> <i>Sphyraena obtusata</i> <i>Decapterus russelli</i>
		Shri G.V.A. Prasad, Jr. Fisheries Scientist	Dr. A. B. Kar, Fisheries Scientist  Shri Pratyush Das, Jr. Fishing Gear Technologist	<i>Priacanthus hamrur</i> <i>Saurida tumbil</i> <i>Arius thalassinus</i> <i>Leiognathus spp.</i> <i>Scomberomorus guttatus</i>
6.	Port Blair	Dr. M. Vinodkumar Zonal Director	Shri Puran Singh Sr. Scientific Assistant  Shri Rahulkumar Tailor Sr. Scientific Assistant	<i>Thunnus albacares</i> <i>Katsuwonus pelamis</i> <i>Makaira mazara</i> <i>Makaira indica</i> <i>Tetrapturus audax</i> <i>Istiophorus platypterus</i> <i>Xiphias gladius</i> <i>Thunnus obesus</i> <i>Rastrelliger kanagurta</i> <i>Amblygaster sirm</i>

## RESULT REPORTING REQUIREMENT

### **Marine**

- (i) Weekly and monthly reports on physical achievements by e-mail/fax.
- (ii) Cruise reports, catch data, length frequency data, biological data and environmental data every month.
- (iii) Instantaneous reporting of significant findings of survey.
- (iv) Annual assessment of fish stocks.

### **Inter-disciplinary projects**

Quarterly, half-yearly and annual progress reports of the projects

## ANNEXURE – III

## STRATUM AREA FOR DEMERSAL TRAWL SURVEY

(Area in sq. km)

Latitude(° N)	Depth Zone(m)			
	30-50	50-100	100-200	200-500
<b>West Coast</b>				
7-8*	2430	3930	4090	2510
8-9	1700**	3870	870	2650
9-10	1685	2350	850	2135
10-11	1730	2555	715	415
11-12	2580	4820	1070	985
12-13	1710	4250	1835	825
13-14	3715	65+75	1875	1450
14-15	2345	6125	1835	825
15-16	1825	5065	2420	1040
16-17	1930	8010	1725	1140
17-18	3400	13905	2575	645
18-19	3885	22570	1235	600
19-20	7935	23080	1760	1355
20-21	8385	12950	1115	950
21-22	3625	9115	2515	1115
22-23	3220	2970	3100	845
<b>East Coast</b>				
8-9	500***	600	1540	825
9-10	--	--	--	--
10-11	440	1280	1510	450
11-12	810	875	260	255
12-13	1020	2100	725	345
13-14	375	785	415	565
14-15	455	525	395	150
15-16	630	625	470	275
16-17	520	690	1030	695
17-18	1535	1400	1255	925
18-19	810	3120	1485	510
19-20	1910	1975	1680	410
20-21	4220	7530	9860	1060

\*.-Wadge Bank

\*\*\*.- East of long. 77°30' E

Note: Area of strata for trawl survey, bounded by latitudes and depth contours, is given above. Un-trawlable grounds are not excluded.