



The Socio-economic Status and Sectoral Dynamics of Small-scale Tuna Fishing Communities in India

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Indian Fisheries: A GLANCE

Total fish production (2022-23)	17.5 Million MT (8% of global)
Marine (2022-23)	4.1 Million MT
Inland (2022-23)	13.5 Million MT
Contribution of fisheries to GVA (2022-23 at Current prices)	Rs. 232.9 Billion
Fisheries GVA as % of total GVA	1.24 %
Fisheries GVA as % of total Agri. GVA	7.28%
Export of fishery products (2023-24)	1.78 Million MT
Export value of fishery products (2023-24)	US\$ 8.09 Billion
Export value of tuna products (2020-21)	41586 MT (US\$ 56.6 Million)
Per capita consumption of fish (2021)	8.89 kg/person/annum

Indian Fisheries RESOURCE PROFILE

Physical Component

• Length of coastline	8,129 km
• Exclusive economic zone	2.02 m km ²
• Continental shelf	0.50 million km ²
• Inshore area (< 50 m depth)	0.18 million km ²
• Brackishwater area	1.16 Million ha
• Area / ponds under shrimp culture	0.15 Million ha
• Total inland water bodies	8.24 Million ha
• Rivers & canals	0.38 Million km
• Reservoirs	3.52 Million ha
• Tanks & ponds	2.4 Million ha
• Flood plain lakes and derelict waters	0.23 Million ha

Indian Fisheries RESOURCE PROFILE

Human Component (2016)

- Total population engaged in fishery activities **16.1 million**
- Marine fisher population **3.8 million**
- Active fisher population **0.93 million**

Infrastructure Component –Marine (2016)

- Landing centers **1265**
- Major fishing harbours **26**
- Minor fishing harbours **38**
- Deep sea fishing vessels **53**
- Motorized mechanical vessels **66198**
- Motorized non-mechanical vessels **136920**
- Non-motorized vessels **65876**

Profile of fisher folk population and changes over time, India

Particulars	1980	2005	2010	2016
Number of fishermen villages	2,132	3,202	3,288	3,477
Number of fish landing centres	1,438	1,332	1,511	1,265
Number of fishermen households	3,33,038	7,56,212	8,64,550	8,93,258
Households below poverty line	NA	NA	523691 (60.5%)	6,00,890 (67.2%)
Traditional fisher households	NA	NA	7,89,679	8,18,491
Share of occupied fishers in non-fishing sector (%)		4.8	3.8	5.2
Total fisher folk population	18,92,916	35,19,116	39,99,214	37,74,577

Source: Marine Fisheries Census, 2016

Occupational profile of fisher folk population, India, 2016



Sl. No.	Activity	Number	Share (%)
1	Fishing & fish seed collection	927081	60.7
2	Marketing of fish	210237	13.8
3	Making/repairing net	54663	3.6
4	Curing/ processing	48292	3.2
5	Peeling	46158	3.0
6	Laborer	116481	7.6
7	Others	45914	3.0
8	Other than fishing	79583	5.2
9	Total occupied	1528409	100.0

Source: Marine Fisheries Census, 2016

Composition of Fishing Crafts possessed by Marine fishermen, India

Type of crafts	1980	2005	2010	2016
Mechanized		35806	72559	42656
	9289			
Motorized		52971	71313	95957
Non-motorized	134741	96661	50618	25689
Total	144030	185438	194490	164302

Source: Marine Fisheries Census, 2016






Revised Potential estimate (MSY) from the Indian EEZ (2018)



Sl. No.	Particulars	Revised MSY (in Metric Tonnes – MT)
	Mainland	
1.	0-200m deep	4,924,016 MT
2.	200-500m deep	97,461 MT
3.	Sub Total [(1)+(2)]	5,021,477 MT
4.	Oceanic (excluding Lak. & AN Isl. Oceanic 59,100 MT + 3,669 MT = 62,769 MT) (Oceanic total EEZ = 230,832 MT)	168,063 MT
	Island Ecosystem	
5.	Andaman & Nicobar (Incl. Oceanic 43,794 MT)	47,463 MT
6.	Lakshadweep (Incl. Oceanic 14,490 MT)	73,590 MT
7.	Sub Total [(5)+(6)]	121,053 MT
8.	Conventional Resources Total [(3)+(4)+(7)]	5,310,593 MT
9.	Non-Conventional Resources Total	1,847,775 MT
	Conventional & Non-Conventional Resources Grand Total [(8)+(9)]	7,158,368 MT

Tuna fishing in India: An Overview



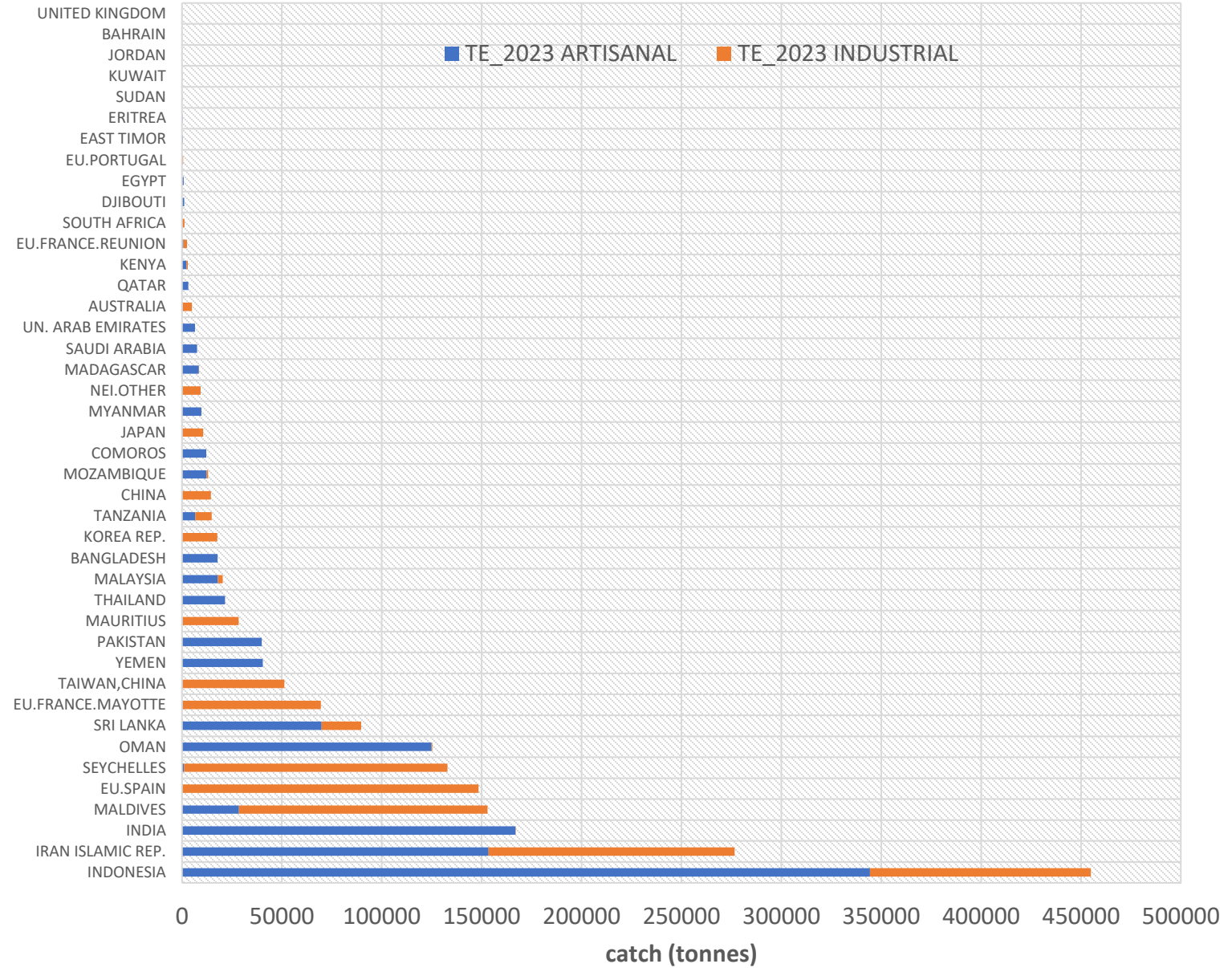
-  India's National Policy on Marine Fisheries, 2017 stresses the need to harness the resources in the deep sea and oceanic waters to sustain marine fish production.
-  Potential yield of deep-ocean resources in Indian EEZ - **2.3 million metric tonnes** – tunas, tuna-like fishes, deep-sea sharks, crustaceans & non-conventional resources.
-  India's tuna fishing fleet is mostly artisanal with vessels < **24 m OAL** and equipped with traditional fishing technology.
-  Tuna fishery – **close to 2/3rd constituted coastal fishery** – **gillnet fishing** around mainland India; Rest constituted by **oceanic fishery mainly of long-line fleet**.
-  Major challenges: **High capital investment**; maintaining the economic viability of operations; **skill development** in modern deep sea fishing techniques; development of **competitive value chains**.

Resource potential of oceanic resources in the Indian EEZ (2018)

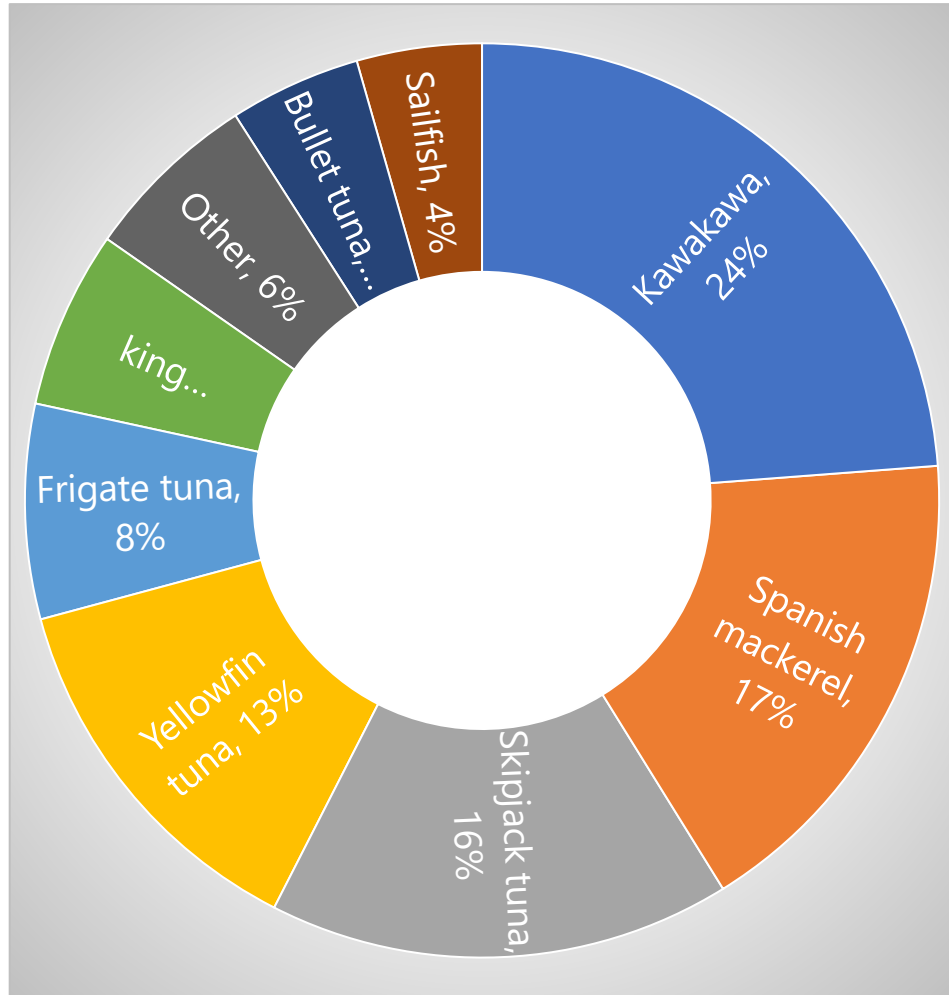


Sl. No.	Particulars	Revised MSY (in Metric Tonnes – MT)
1	Skipjack tuna	99500
2	Yellowfin tuna	83500
3	Bigeye tuna	420
4	Albacore tuna	112
5	Swordfish	6500
6	Sailfish	5200
7	Marlins	6600
8	Pelagic sharks	25000
9	Other species (barracuda, dolphin fish, wahoo, pelagic rays, etc.)	4000
	Total	230832

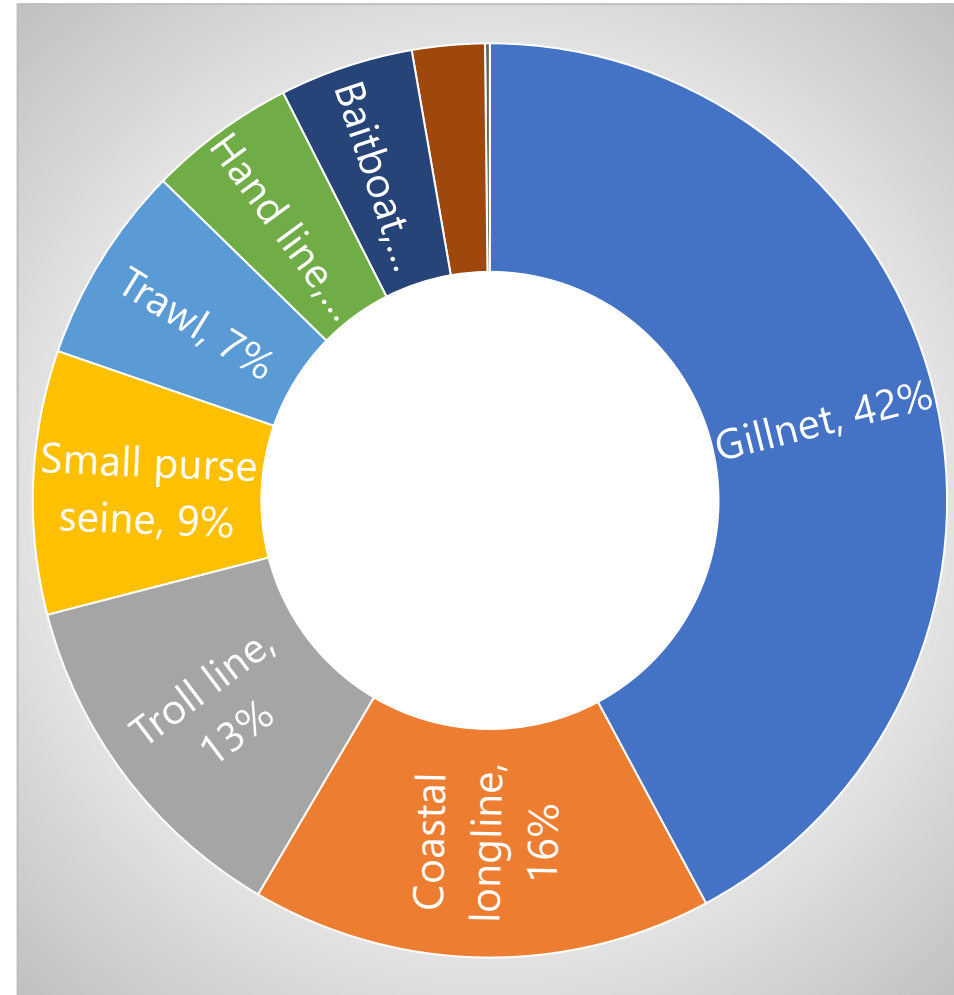
Contribution of artisanal fishers to offshore fishing in IOTC region



Data Source: IOTC (2024)



India's tuna catches by species group, TE 2023



India's tuna catches by gear group, TE 2023

Data Source: IOTC (2024)

Major tuna-fishing communities in India

- **Thoothoor fishing community, based in the Thoothoor region of Kanyakumari District of Tamil Nadu state (South-west coast)**

- **The islanders of the Lakshadweep archipelago region in the Arabian Sea mostly engaged in oceanic tuna fishing;**
- **The small-scale fishers based in Andaman and Nicobar islands situated in the Bay of Bengal**

- **The fishers from Visakhapatnam and Pudimadaka regions of Andhra Pradesh state engaged in offshore tuna fishing.**

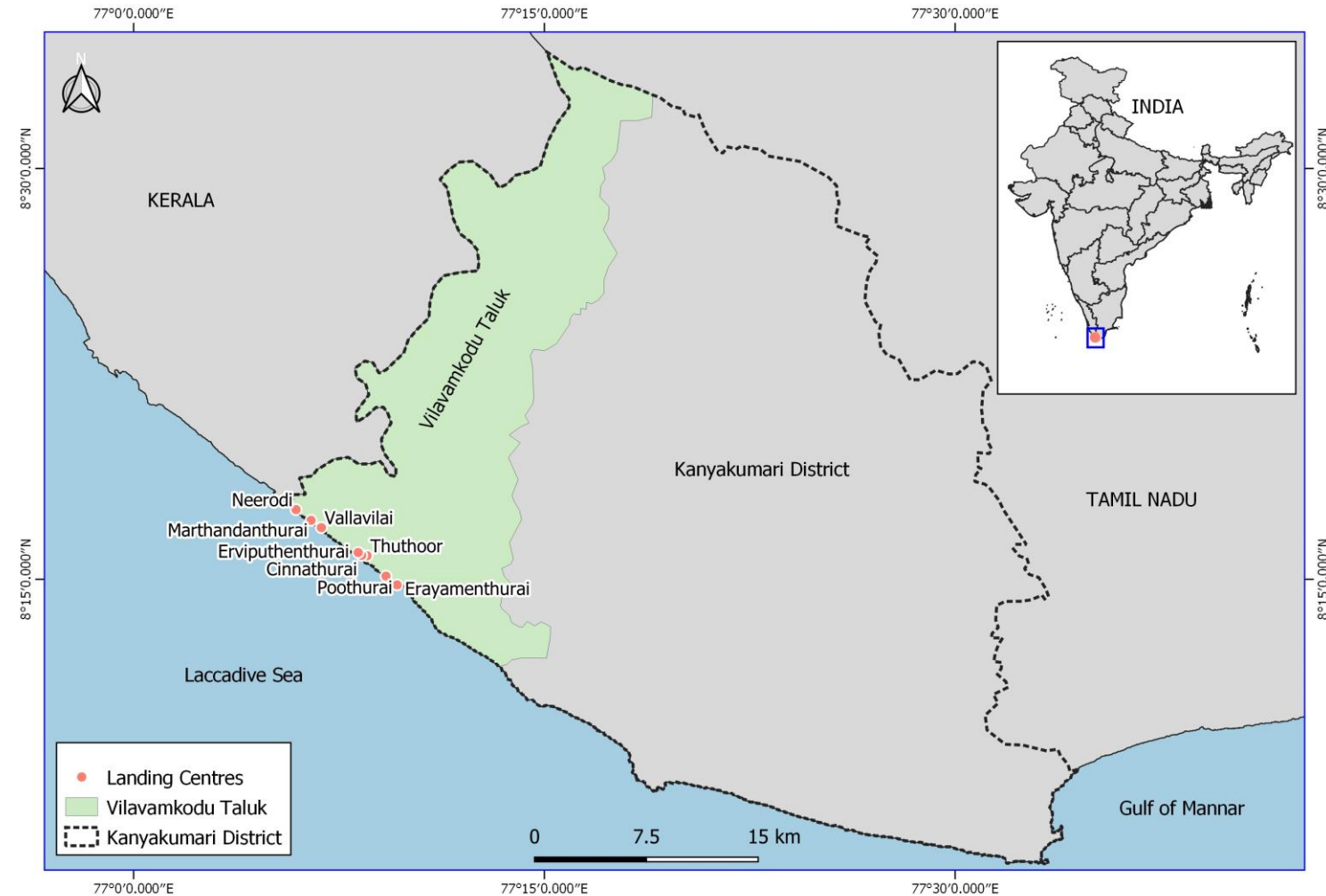
- **A relatively new fishery operated by the traditional fishers hailing from the Coromandel coast of Tamil Nadu, mainly based at Nagapattinam, Poompuhar, Thoottukudi, and Puducherry.**



Offshore Tuna fishing based in Thoothoor, Kanyakumari



- Thoothoor fishers contribute to about 70% of deep-sea fish landed in India
- Nearly 500-600 deep-sea fishing vessels (long liners and gillnetters)
- Fishing is mostly traditional and gears are manually operated.
- Main resources targeted: Tuna, seer fish, billfish, sharks & rays.
- Main gears: Hook & line, gillnets, long line, etc.
- Maximum catch capacity: 15-20 T
- Most trips land catches in Cochin Fisheries Harbour, Kochi



Basic features of fishing villages in the Thoothoor region of Kanyakumari District, Tamil Nadu, INDIA

Fishing village	Population	Fisher families	Number of active fishers	Crafts in the fishery			
				Mech.	Mot.	Non-Mot.	Total
Eraviputhenthurai	3999	1110	1019	85	35	0	120
Erayumanthurai	2196	675	614	3	49	0	52
Marthandanthurai	4740	1320	1177	9	262	0	271
Neerody	5972	1608	1688	51	348	4	403
Poothurai	4176	1185	1532	18	174	0	192
Thoottoor	5427	1524	1294	232	70	4	306
Vallavilai	5566	1440	1633	91	248	1	340

Source: Marine Fisheries Census 2016; Notes: The details of Chinnathurai village are not available; Mech: Mechanized crafts; Mot: Motorized crafts; Non-Mot: Non-motorized crafts.

Technical profile of the Thothoor offshore tuna fishing fleet (2018)

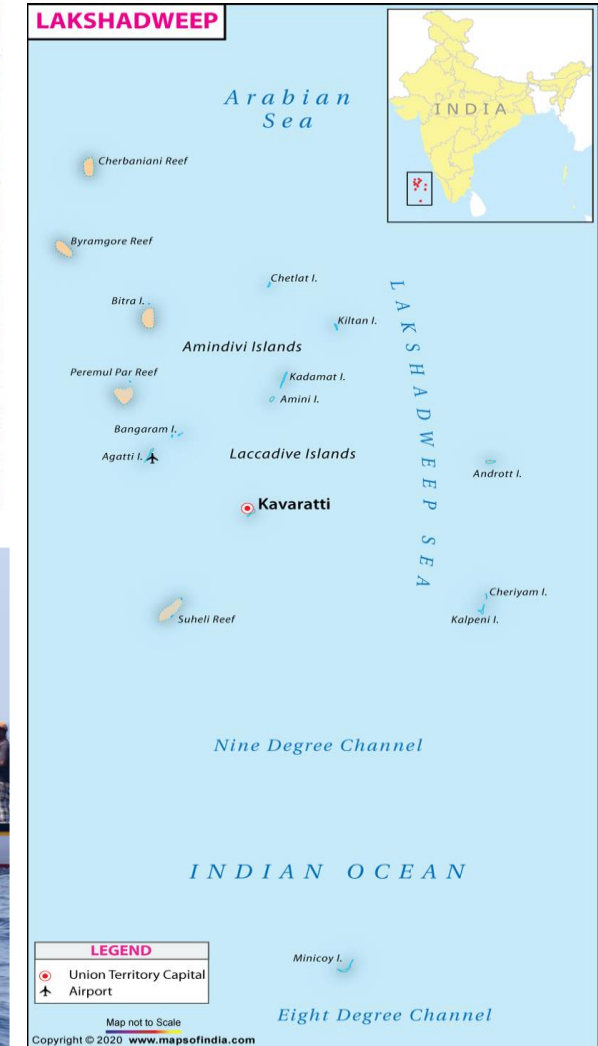


Technical characteristics of vessel	Estimates
Percent of vessels with individual ownership (%)	66
Length of the vessel (m)	10-21
Width of the vessel (m)	4.2-7.1
Horsepower range (HP)	110-190
Main gears used	Hook & line, gillnet, long line
Main resources targeted	Tuna, squids, Spanish mackerel, billfishes, sharks & rays
Fish hold capacity (tonnes)	7-20
Crew size (number)	9-18
Length of long line (m)	7,400-55,000
Length of Gillnet (m)	7,400-46,300
Number of trips/years	7-15
Number of days/trips	20-35
Consumption of fuel (diesel)/trip (litres)	2240, CV (%): 43.1
Average voyage time/trip (to and fro in hours)	216, CV (%): 42.4
Average actual fishing time/trip (hours)	336, CV (%): 33.9
Time taken to haul the gear (hours)	8-16
Depth of operation (range in m)	150-2000
Percent of vessels with individual ownership (%)	66

Oceanic Tuna fishing based in Lakshadweep islands



- Lakshadweep is a tropical archipelago of 36 atoll coral reefs in the Laccadive sea of Indian Ocean
- Tuna constitute over 90% of fish landings in Lakshadweep.
- Annual tuna landings ~ 23,000 tonnes
- Main resources targeted: Skipjack, Yellowfin, other tuna and tuna-like species.
- Main gears: Pole & line, hand line, troll lines
- Strong emphasis on sustainable modes of fishing
- *masmin* – A smoked and sundried product from Tuna, mostly exported to Sri Lanka.



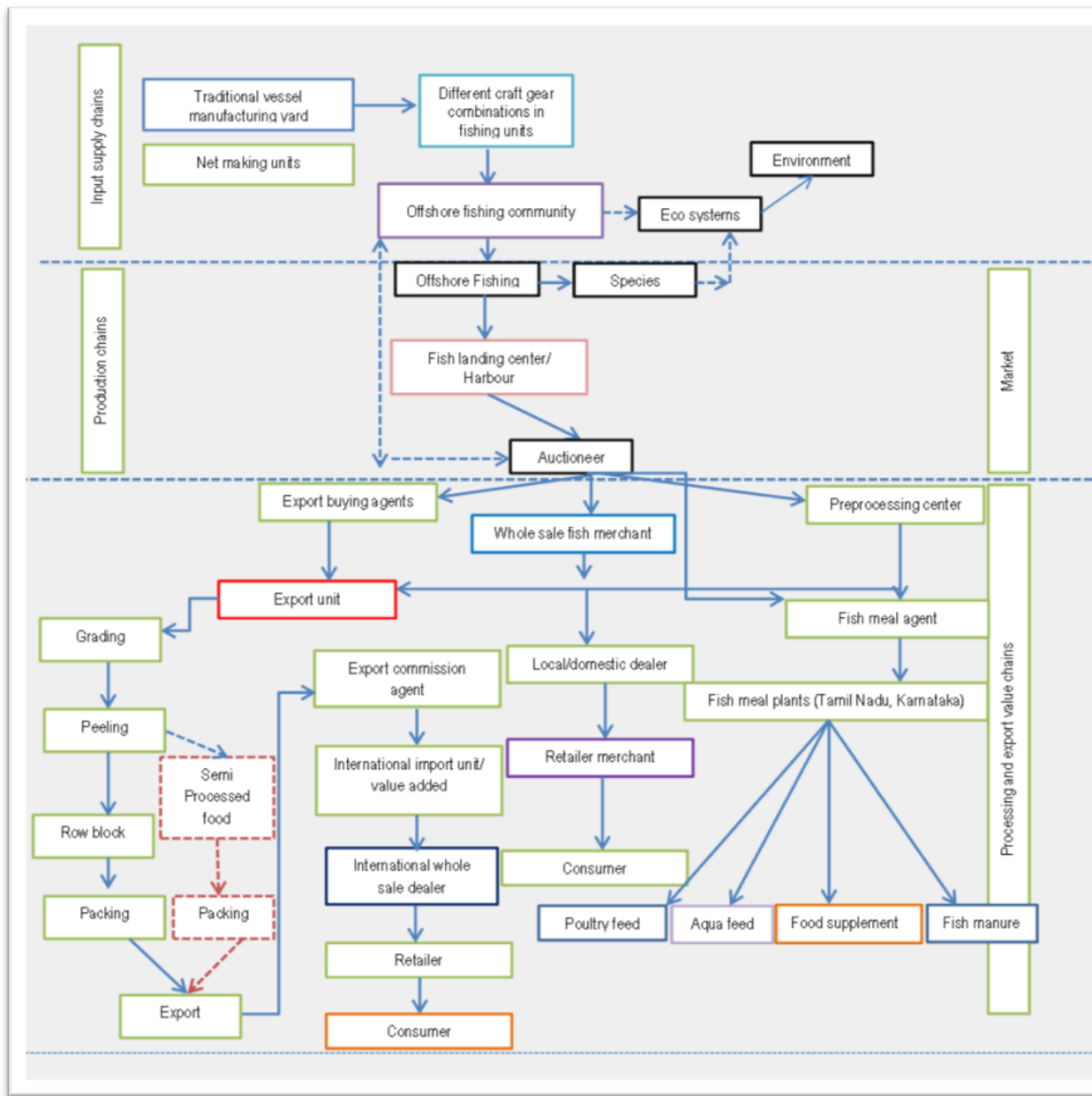
Basic features of fishing villages in Lakshadweep islands, INDIA



Name of the Island	Population	Fisher families	Number of active fishers	Crafts in the fishery			
				Mech.	Mot.	Non-Mot.	Total
Agatti	4899	928	1591	1	177	126	304
Amini	2912	507	764	0	53	1	54
Andrott	1446	185	274	0	75	38	113
Bitra	222	44	70	0	25	11	36
Chetlat	1482	247	291	0	57	31	88
Kadmat	4156	681	843	0	80	213	293
Kalpeni	1440	227	481	0	107	96	203
Kavaratti	2717	365	561	1	43	74	118
Kiltan	1124	179	208	0	30	46	76
Minicoy	7536	800	1405	0	64	43	107
Total	27934	4163	6488	2	711	679	1392

Source: Marine Fisheries Census 2016; Notes: Mech: Mechanized crafts; Mot: Motorized crafts; Non-Mot: Non-motorized crafts.

Tuna value chain dynamics



An indicative value chain map of marine sea fish in India

Value chain 1 (domestic): Fisher-Auctioneer-Whole Sale Agent-Whole sale Market-Commission Agent-Retailers

Value chain 2 (domestic): Fisher- Supplier (Auctioneer)-Whole sale agent- Interstate wholesale markets- Commission Agent-Retailers

Value chain 3 (domestic): Fisher-Auctioneer-Whole Sale Agent-Local value addition unit-Retailer-Consumer

Value chain 4 (Export): Fisher- Auctioneer-Commission Agent- Export Processing Unit (Weighing-Grading-Pre-processing – Processing-Tunnel Freezing)-Terminal market

India's present priorities for developing tuna fishing



Sl. No.	Dimension	Suggested interventions
1.	Policies for facilitating/legitimizing offshore fishing operations.	<ul style="list-style-type: none">Guidelines for high-sea fishing need to be notified and operationalized.Appropriate regulations to be legitimized by incorporating specific provisions in the proposed Marine Fisheries (Regulation and Management) Bill 2019.
2.	Technical readiness of fishing vessels for long-distance cruises	<ul style="list-style-type: none">Equipping vessels with efficient storage, galleys, bio-toilet & other amenities.Development of offshore vessel building yards on PPP mode and mandatory certification of private yards for following quality and safety protocols.Mandatory certification and inspection of offshore vessels to conform to the provisions of ILO Convention 188 and IMO Conventions (1993&1995) as part of registration.Installing advanced net hauling and auto liner winch systems in vessels to avoid manual hauling.
3.	Disaster preparedness and risk proofing of vessels	<ul style="list-style-type: none">Training of vessel crew on sea safety and strict enforcement of sea-safety guidelines for better adoption by fishers.Comprehensive interventions to improve adoption of vessel insurance and accident insurance by fishers.

Priorities for tuna fishing...



No.	Dimension	Suggested interventions
4.	Communication and navigation facilities on-board	<ul style="list-style-type: none">• Maritime Mobile Service Identity (MMSI) to be issued compulsorily to all DSF vessels.• Equipping with medium frequency / high frequency (MF/HF) or satellite phones for long-distance connectivity (beyond 30 NM).• Schemes for installation of VMS/DAT in all deep-sea vessels along with financial assistance programs.
6.	Sale of fish at landing centres	<ul style="list-style-type: none">• Improving access of deep-sea fishermen to fishery credit to minimize their dependence on credit-linked market-tying agreements (sold through commission agents with a commission for unloading and auctioning).• Development of offshore fish value chains by better integrating with processors/exporters to incentivize quality maintenance and on-board processing.



Thanks...

