



Marine Fish Landings in India-2022

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Indian Marine Fisheries in 2022

At a Glance

1 The estimated marine fish landings along the coast of the mainland of India during 2022 was 3.49 million tonnes, showing an increase of 14.53% compared to the landings in 2021. An increase of 28.02% was reported in the marine fish landings of 2022 compared to the COVID-19 pandemic year 2020.

2 Tamil Nadu regained first place in fish landings with 7.22 lakh tonnes accounting for 20.69% of the total landings in the country, followed by Karnataka (6.95 lakh tonnes) and Kerala (6.87 lakh tonnes).

3 The Gujarat state, occupying the top two slots in previous years, appropriated the fourth position (5.03 lakh tonnes) in fish landings, recording a nearly 13% decrease compared to the 2021 landings due to lower fishing efforts and trade-related issues.

4 Marine fish resources with topmost landings in 2022 were Indian mackerel, with a contribution of 3.28 lakh tonnes (9.39% of the national total); Oil sardine with 2.51 lakh tonnes (7.20%); Ribbon fishes, 2.27 lakh tonnes (6.49%); Cephalopods, 2.06 lakh tonnes (5.89%) and Threadfin breams, 1.99 lakh tonnes (5.69%).

5 The year 2022 had been a comeback year of sorts for the Oil sardine (*Sardinella longiceps*), one of the most preferred marine fishes in India. The landings of the same witnessed an increase of 188.15% in 2022 compared to 2021 and secured second position among the marine resources in quantity landed.

6 Lesser sardines, the topmost contributor for the past two consecutive years, dropped down to sixth position with a reduction of 24.89% in landings compared to 2021.

7 In the southern districts of Maharashtra, phenomenal landings of Oil sardine by the gears that capture the shoals *en masse*, catapulted its contribution.

8 In contrast to the previous years, calm weather conditions favoured continuous fishing activities in 2022. Even though a super cyclone emerged in Bay of Bengal in May, the fishery was unaffected as it was during the period of the fishing ban.

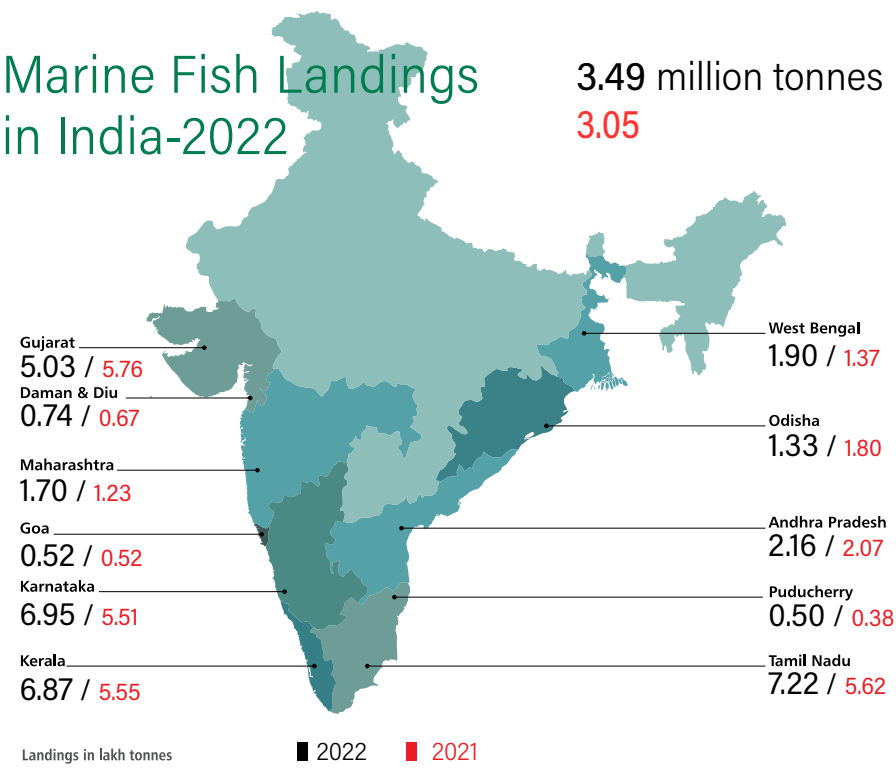
9 A widespread increase in the contribution by midlevel landing centres was witnessed in Odisha and Maharashtra in comparison to routinely contributing major fishing harbours.

India

The marine fisheries sector in India accounts for more than 40% of its total fish production, is essential in supplying protein-rich food to the country's population at less cost, and generates lucrative foreign exchange earnings through seafood export. Scientific stewardship of our marine resources entails constant vigil in maintaining the biodiversity and ecosystem balance. Strategies for the sustainable management of marine fishery resources are developed through the timely collection and analysis of scientific data on marine fisheries, especially the production aspect. Since its inception in 1947, the Central Marine Fisheries Research Institute of the Indian Council of Agricultural Research (ICAR-CMFRI) has been tasked with scientific data collection and estimation of marine fish landings in order to monitor the stock health of the country's diverse marine fishery resources and aid the planners to take an informed look at the harvest pattern.

Executing the acclaimed FAO-approved sampling design, the first-hand database of marine fish landings estimates for 2022 was completed in real-time using the Fish Catch Survey and Analysis (FCSA) online data collection application. The national-level sample survey through a multi-stage (two-stage) stratified random sampling revealed that more than 2 lakh boat trips landed the marine resources in 2022. The landings data thus estimated was used to derive species-wise, fishing gear-wise and fishing zone-wise monthly marine fish landings estimates along with the consolidated state and national-level estimates of marine fish landings for 2022.

The estimated marine fish landings along the coast of the mainland of India during 2022 was 3.49 million tonnes, showing an increase of 14.53% compared to the landings in 2021. Compared to the COVID-19 pandemic year of 2020, an increase of 28.02% was reported in the marine fish landings



Estimated marine fish landings (tonnes) in India-2022

PELAGIC FINFISH		DEMERSAL FINFISH	
CLUPEIDS		ELASMOBRANCHS	
Wolf herring	20207	Sharks	12296
Oil sardine	251257	Skates/Guitarfish	2532
Lesser sardines	169404	Rays	13646
Hilsa shad	10669	Eels	17009
Other shads	24957	Catfishes	62873
Anchovies		Lizard fishes	76377
<i>Coilia</i>	26348	PERCHES	
<i>Setipinna</i>	7574	Rock cods	49010
<i>Stolephorus</i>	88565	Snappers	11512
<i>Thryssa</i>	34662	Pig-face breams	12746
Other clupeids	58341	Threadfin breams	198733
Bombayduck	55342	Bullseyes	68534
Half beaks & Full beaks	6912	Other perches	63880
Flying fishes	745	Goatfishes	20881
Ribbon fishes	226554	Threadfins	7952
CARANGIDS		Croakers	90045
Horse mackerel	35413	Silverbellies	59189
Scads	163375	Whitefish	8202
Leather-jackets	12041	POMFRETS	
Other carangids	141149	Black pomfret	20391
MACKERELS		Silver pomfret	22816
Indian mackerel	327637	Chinese pomfret	6110
Other mackerels	1216	FLAT FISHES	
SEER FISHES		Halibut	810
<i>Scomberomorus commerson</i>	27334	Flounders	326
<i>Scomberomorus guttatus</i>	15316	Soles	40065
<i>Scomberomorus lineolatus</i>	17	CRUSTACEA	
<i>Acanthocybium solandri</i>	456	Penaeid prawns	163343
TUNNIES		Non-penaeid prawns	147038
<i>Euthynnus affinis</i>	45260	Lobsters	1607
<i>Auxis</i>	20111	Crabs	50202
<i>Katsuwonus pelamis</i>	22286	Stomatopods	10535
<i>Thunnus tonggol</i>	2756	MOLLUSCA	
<i>Thunnus albacares</i>	17958	Bivalves	12979
Other tunnies	530	Gastropods	4521
Bill fishes	11627	CEPHALOPODS	
Barracudas	43309	Squids	109253
Mullets	10507	Cuttlefish	73832
Unicorn cod	7	Octopus	22532
OTHERS			
<i>Odonus niger</i>	5542		
MISCELLANEOUS	143138		
TOTAL		3490299	

Production of resources that are harvested by localized effort

Seaweed	52107	Mussels, Oysters & Clams	106619
TOTAL		3649025	

of 2022. But at the same time, it was 2.0% less when juxtaposed with the landings estimate of the pre-COVID year 2019. Tamil Nadu returned to the first position in fish landings (7.22 lakh tonnes), followed surprisingly by Karnataka (6.95 lakh tonnes) and Kerala (6.87 lakh tonnes). The Gujarat state, which had been occupying the top two slots during the previous years, appropriated the fourth position (5.03 lakh tonnes) in fish landings. These four states viz Tamil Nadu, Karnataka, Kerala and Gujarat, accounted for 20.69%, 19.90%, 19.68%, and 14.40% of the national total, respectively. Except for Odisha and Gujarat, all states witnessed an increase in landings compared to 2021. The observed increase was 38.42% in West Bengal landings, 4.55% in Andhra Pradesh, 28.38% in Tamil Nadu, 30.44% in Puducherry, 23.76% in Kerala, 26.13% in Karnataka, 1.22% in Goa, 38.19% in Maharashtra and 10.38% in Daman & Diu. Landings in Odisha and Gujarat witnessed a reduction to the tune of 26.07% and 12.79%, respectively in 2022 compared to 2021. Compared to 2019 the estimates of Goa (58.94%), Karnataka (38.57%), Puducherry (35.34%), Odisha (30.34%), and Kerala (26.29%) observed significant jumps in the landings.

Region-wise estimates revealed that the southwest region comprising Kerala, Karnataka and Goa had the highest landings in 2022, with 1.43 million tonnes (41% of the national total), followed by 0.99 million tonnes (28%) in the southeast region, 0.75 million tonnes (22%) in the northwest region, and 0.32 million tonnes (9%) in the northeast region. Compared to 2021, the northwest region

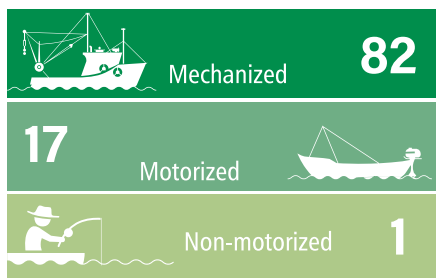


Major species/groups with their contribution (lakh tonnes) towards total marine fish landings in India (2021 & 2022)

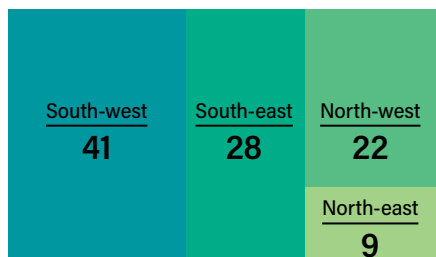
witnessed a decline in the total landings by nearly 20000 tonnes, whereas the southwest and southeast regions recorded a substantial increase in the fish landings.

Marine fishery resources with the highest landing contributions in 2022 were Indian mackerel 3.28 lakh tonnes (9.39% of the national total), Oil sardine 2.51 lakh tonnes (7.20%), Ribbon fishes 2.27 lakh tonnes (6.49%), Cephalopods 2.06 lakh tonnes (5.89%), Threadfin breams 1.99 lakh tonnes (5.69%), Lesser sardines 1.69 lakh tonnes (4.85%), Scads 1.63 lakh tonnes (4.68%), Penaeid prawns 1.63 lakh tonnes (4.68%), Anchovies 1.57 lakh tonnes (4.50%) and Non-penaeid prawns 1.47 lakh tonnes (4.21%). The year 2022 had been a comeback year of sorts for the Oil sardine (*Sardinella longiceps*), one of the most preferred marine fishes in India. The landings of the same witnessed an increase of 188.15% in 2022 compared to 2021 and secured second position among the marine resources in quantity landed.

Among the three different categories of crafts used for fishing, mechanized fishing vessels accounted for 2.85 million tonnes (82.0%), motorized fishing crafts accounted for 0.61 million tonnes (17.0%), and non-motorized fishing crafts accounted for only 0.04 million tonnes (1.0%) of the total landings.



Sector-wise landings (%) India



Region-wise contribution (%)

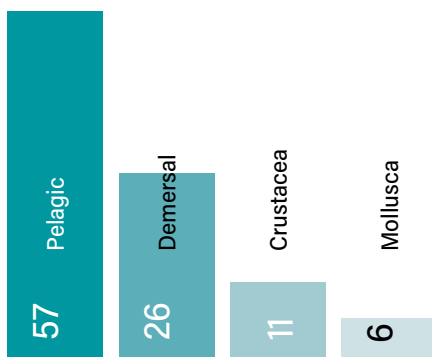
The estimate according to fish assemblages in 2022 displayed that Pelagic resources contributed the maximum with 1.98 million tonnes (57%) of landings with the major contribution from Indian mackerel, Oil sardine and Ribbon fishes. It was followed by Demersal 0.91 million tonnes (26%), Crustacea 0.37 million tonnes (11%), and Mollusca 0.22 million tonnes (6%).

The seasonal analysis of the estimates indicated that the most productive season was October-December (fourth quarter), with a 35% share (1.24 million tonnes) in 2022 followed by the third quarter which accounted for 0.87 million tonnes (25%) and the first quarter with 0.83 million tonnes (24%). At 0.56 million tonnes (16%), the lowest landings were reported in

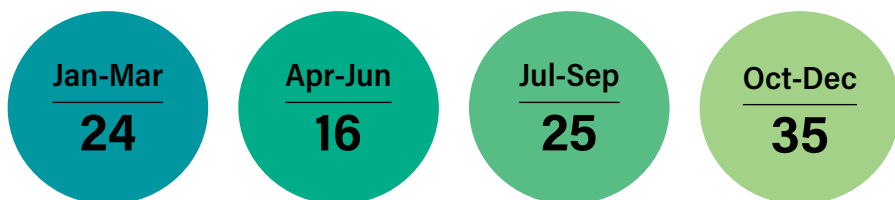
April-June (second quarter), which usually witnesses the bulk of uniform coastwise fishing bans.

The catch rate estimates of fish landings based on the sector revealed that the mechanized fishing vessels were reported with maximum landings with respect to trips conducted and actual fishing hours observed. It was computed as 2761 kg/unit trip and 78 kg/ hour. The overall catch rate of the motorized fishing vessels is 151 kg/unit trip and for the non-motorized fishing vessels, it is 52 kg/ unit trip. The catch per hour of fishing for the motorized and non-motorized sectors were 23kg/hour and 29kg/hour, respectively. The mechanized fishing sector witnessed a 9% increase in the per unit trip catch and an 11% increase in the per hour catch in 2022 compared with 2021.

During 2022, a total of 1062 taxa were recorded upto genus-species level in the landings by sampling from the landing centres located along India's coastline. The number of unique species was found to be the highest in Tamil Nadu (716) and Kerala (707) followed by Maharashtra (329) and Gujarat (291).



Assemblage (%) India

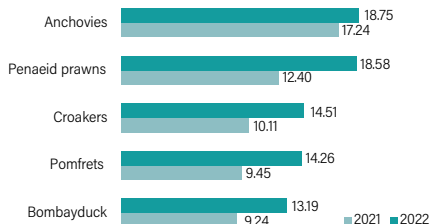


Quarter-wise landings (%) India

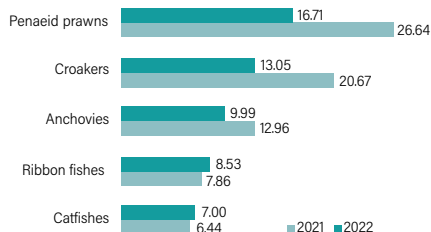
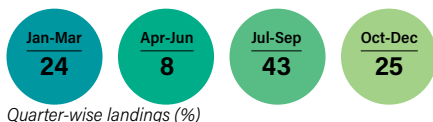
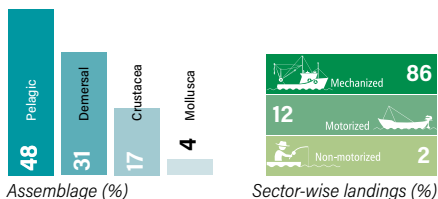
West Bengal

Estimated Landings: **1.90** lakh tonnes

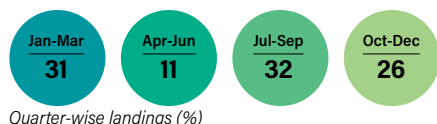
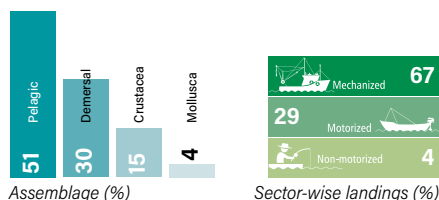
- ▶ The state of West Bengal witnessed a revival of its marine fisheries during the year 2022. Total landings of the state were estimated at 1.90 lakh tonnes which recorded a 38% increase compared to the previous year's landings of 1.37 lakh tonnes.
- ▶ Unlike the previous year, 2022 was found to be rather calm in terms of weather conditions which favoured continuous fishing activities. Although one super cyclone was formed in May, its coincidence with the fishing ban period did not affect the fishery.
- ▶ The major landing centres of South 24 Parganas returned to its normal fishing activities this year, which resulted in yielding the major share (52%) of the total landings of the state. East Midnapore district contributed the other 48%.



Major landings (in '000 tonnes)



Major landings (in '000 tonnes)



Odisha

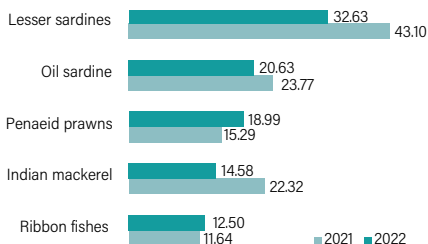
Estimated Landings: **1.33** lakh tonnes

- ▶ Odisha's total marine fish landings was estimated at 1.33 lakh tonnes in 2022, a 26% decrease from the previous year.
- ▶ A decrease of 16%, 20% and 48% was observed in landings of Indian mackerel, Cephalopods and Pomfrets respectively compared to 2021.
- ▶ A decrease in Lesser sardines landings is noticed in 2022 (4155 tonnes), which shows a decline of 53% compared to 2021.
- ▶ A major share of marine fish landings in Odisha was from the multiday trawl/net (0.81 lakh tonnes) followed by motorized gillnet (0.24 lakh tonnes) and motorized ringseine (0.13 lakh tonnes).
- ▶ Among the coastal districts, Balasore (0.45 lakh tonnes) and Jagatsinghpur (0.42 lakh tonnes), shared most of the state's marine fish landings in 2022.

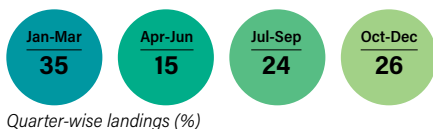
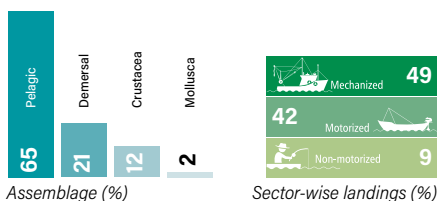
Andhra Pradesh

Estimated Landings: **2.16** lakh tonnes

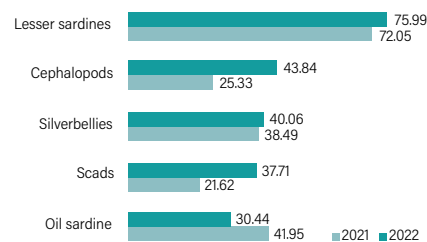
- ▶ The total marine fish landings from Andhra Pradesh during the year 2022 was estimated to be 2.16 lakh tonnes which was 5% higher than the previous year.
- ▶ The proportion of landings from the non-motorized sector in Andhra Pradesh is higher when compared to other maritime states.
- ▶ Lesser sardines, Oil sardine, Penaeid prawns, Indian mackerel and Ribbon fishes were the major resources landed in Andhra Pradesh during 2022.
- ▶ The landings of Indian mackerel and Lesser sardines declined by 35% and 24% respectively when compared to 2021. There was an increase of 24% in Penaeid prawns landings in 2022.
- ▶ The landings from East Godavari district comprised 48% of the total landings, and 34% of the total landings in Andhra Pradesh landed at Kakinada fisheries harbour.



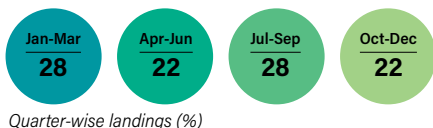
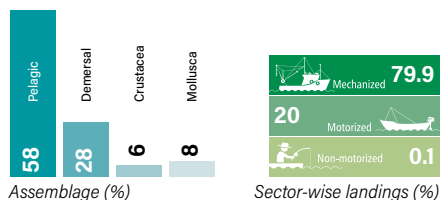
Major landings (in '000 tonnes)



Quarter-wise landings (%)



Major landings (in '000 tonnes)



Quarter-wise landings (%)

Tamil Nadu

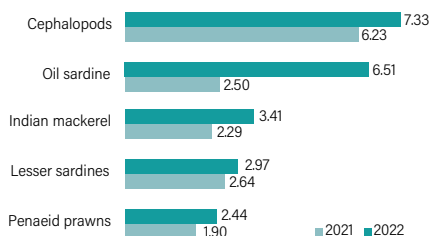
Estimated Landings: **7.22** lakh tonnes

- ▶ The state's total production was 7.22 lakh tonnes during the year, an increase of 1.60 lakh tonnes against the previous year, 2021.
- ▶ Lesser sardines was the highest landed resource in 2022 at 0.76 lakh tonnes; the previous year also witnessed the highest landings of this resource.
- ▶ As per usual trend the marine fishing powerhouse, Ramanathapuram district alone contributed 26% of the state's total landings.
- ▶ Cephalopods, Silverbellies, Scads, Penaeid prawns, Indian mackerel, Anchovies and Threadfin breams landings considerably increased, whereas Oil sardine landings decreased by 0.12 lakh tonnes.
- ▶ Mechanized single day trawlnets accounted for the majority of the catch (56%) followed by multiday trawlnets (17%) and motorized gillnets (15%).

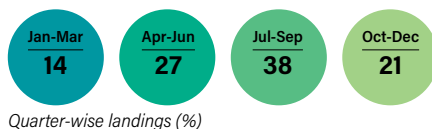
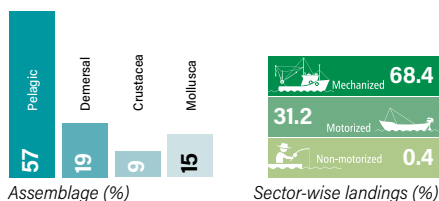
Puducherry

Estimated Landings: **0.50** lakh tonnes

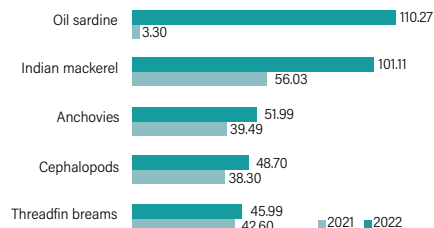
- ▶ The estimated yield was 0.50 lakh tonnes during the year, an increase of 30% compared to 2021, and accounted for 1.43 % of the national total.
- ▶ The contributions from major gears were multiday trawlnet (34%) and outboard gillnet (24.5%) for the year 2022.
- ▶ With a catch rate of 6095 kg/trip, the multi-day trawlnet recorded the highest and in terms of catch per hour, the motorized shoreseine recorded the highest (448 kg/hour).
- ▶ A substantial increase was observed in the landings of Tunnies (~14.6-times) compared to 2021. Oil sardine (~2.6-times) and Anchovies (~4.5-times) were also considerably increased in the year 2022.



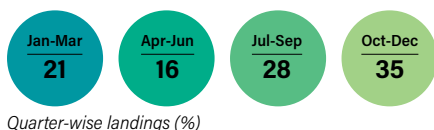
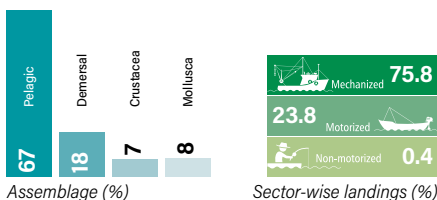
Major landings (in '000 tonnes)



Quarter-wise landings (%)



Major landings (in '000 tonnes)



Quarter-wise landings (%)

Kerala

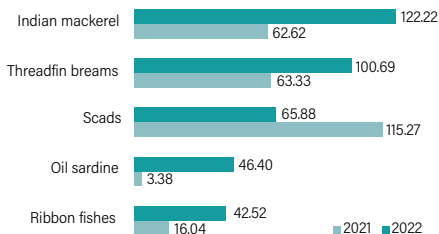
Estimated Landings: **6.87** lakh tonnes

- ▶ The marine fisheries sector in Kerala recorded the highest catch of the last decade with 6.87 lakh tonnes in 2022. A significant increase of 24% was noted against the previous year's landings of 5.55 lakh tonnes.
- ▶ The recovery of the Oil sardine fishery is the major highlight of the year. From a meagre 3297 tonnes of 2021, the species has returned to top most position with 1.10 lakh tonnes. This reappearance of Oil sardine started to unravel only during the second half of the year.
- ▶ Indian mackerel, the other prominent resource, also recorded a catch of 1.01 lakh tonnes which is almost double its estimated landings of the previous year.
- ▶ Among districts, Ernakulam positioned at top with more than 2 lakh tonnes with a share of 30% of the total landings.

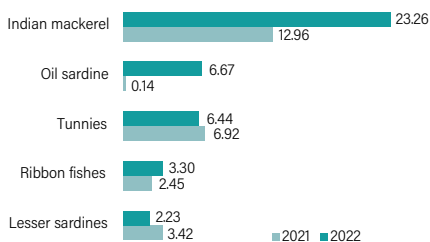
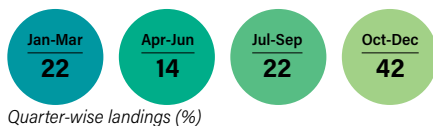
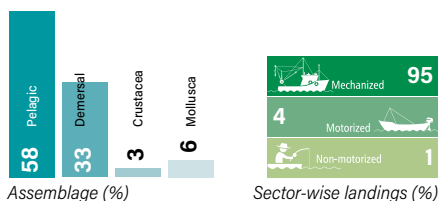
Karnataka

Estimated Landings: **6.95** lakh tonnes

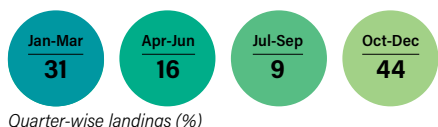
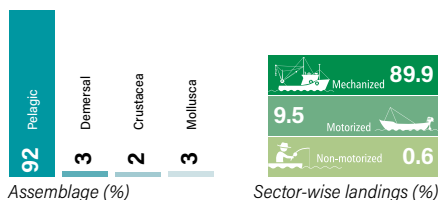
- ▶ Karnataka, with an estimated marine fish landings of 6.95 lakh tonnes is second in terms of national marine fish landings. The state witnessed a noticeable hike in landings of about 1.44 lakh tonnes during 2022 when compared to 2021, reaching an all-time high.
- ▶ The Indian mackerel, which was primarily caught in purseseine and multiday trawl net, attained a nearly 2-fold hike from last year's catch to reach 1.22 lakh tonnes
- ▶ The landings of Threadfin breams showed a marked escalation from 0.63 lakh tonnes to 1.01 lakh tonnes. Scads, despite a 43% decline, ranked third with 0.66 lakh tonnes. Revival of Oil sardine landings from meagre 3378 tonnes to 0.46 lakh tonnes was also noticed.
- ▶ A marked increase in landings was observed in Mangalore (43%) and Malpe (22%) fisheries harbours during 2022.



Major landings (in '000 tonnes)



Major landings (in '000 tonnes)



Goa

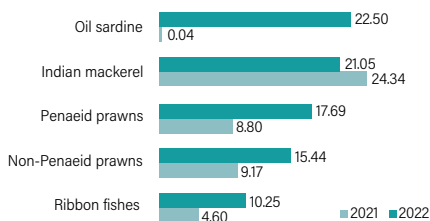
Estimated Landings: **0.52** lakh tonnes

- ▶ The state of Goa, with a landings of 0.52 lakh tonnes, showed meagre increase (1%) compared to 2021.
- ▶ Indian mackerel was the key component of the landings during 2022 with 0.23 lakh tonnes, owing a two-fold surge compared to the previous year.
- ▶ Oil sardine showed a semblance of revival in its landings, from just 145 tonnes in 2021 to 6,674 tonnes during the current year.
- ▶ The fishery of Ribbon fishes with 3304 tonnes showed a 35% increase and the Lesser sardines with 2230 tonnes showed a 35% decrease. Similarly, Scads, Penaeid prawns and Horse mackerel showed 77%, 79% and 65% decrease, respectively.
- ▶ Mechanized purseseines recorded the highest catch (0.43 lakh tonnes) during 2022.

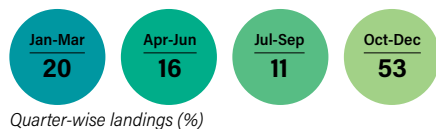
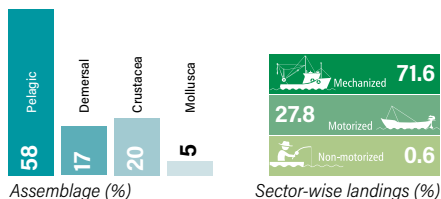
Maharashtra

Estimated Landings: **1.70** lakh tonnes

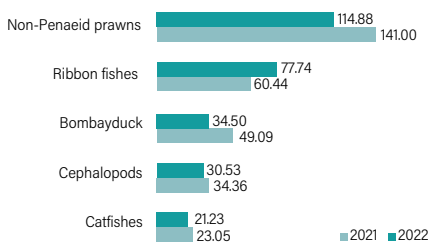
- ▶ The state of Maharashtra, with an estimated marine fish landings of 1.70 lakh tonnes, recorded an increase of 38% over 2021, representing 5% of the national total.
- ▶ Among the districts, Raigad accounted for 28% of the state's landings followed by Mumbai City (26%), and Ratnagiri (23%).
- ▶ Oil sardine was the highest landed resource in the state which witnessed a huge increase in the landings with 0.23 lakh tonnes compared to 2021 (44 tonnes).
- ▶ An increase in the landings of all major species was observed except for Indian mackerel.
- ▶ Mechanized purse seine contributed a major portion of landings with 0.62 lakh tonnes followed by multiday trawlnet and motorized dolnet.



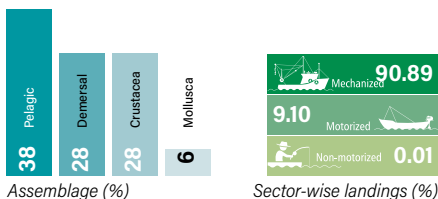
Major landings (in '000 tonnes)



Quarter-wise landings (%)

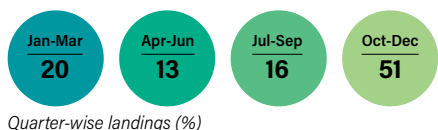


Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)



Quarter-wise landings (%)

Gujarat

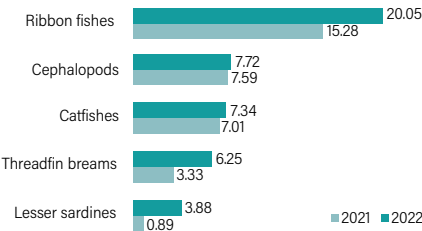
Estimated Landings: **5.03** lakh tonnes

- ▶ The estimated marine fish landings from Gujarat for 2022 was 5.03 lakh tonnes, recording a nearly 13% decrease compared to the 2021 landings. The decline was majorly due to the lower fishing efforts (reduction of ~16000 unit trips compared to 2021) and trade-related issues.
- ▶ The major share of harvest was by the mechanized fleet resulting in 4.57 lakh tonnes (91%), followed by motorized fleet (0.46 lakh tonnes) and non-motorized crafts (34 tonnes).
- ▶ In 2022, landings of all the major resources was decreased compared to 2021, except Ribbon fishes.
- ▶ Fourth-quarter registered the highest landings of 2.56 lakh tonnes, followed by the first quarter (1.00 lakh tonnes), third quarter (0.83 lakh tonnes), and second quarter (0.64 lakh tonnes).

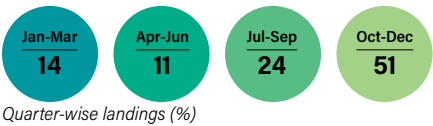
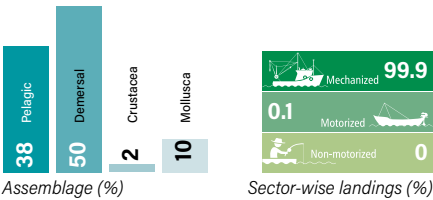
Daman & Diu

Estimated Landings: **0.74** lakh tonnes

- Marine fish landings of Daman & Diu was recorded as 0.74 lakh tonnes for 2022, showing an increase of 10.38% compared with the previous year 2021 (0.67 lakh tonnes).
- The maximum catch was recorded during the fourth quarter (0.38 lakh tonnes), followed by the 3rd quarter (0.18 lakh tonnes), 1st quarter (0.10 lakh tonnes), and 2nd quarter (8098 tonnes).
- Multiday trawlnet contributed maximum landings of 0.70 lakh tonnes, followed by mechanized gillnet (2977 tonnes), and mechanized dolnet (509 tonnes).
- Landings of all the major resources was increased compared to 2021.
- A four-fold increase in the landings of Lesser sardines was observed compared to 2021.



Major landings (in '000 tonnes)



Valuation of fish landings across states

The estimated value of marine fish landings during 2022 at the landing centre level was ₹58247 crores, (8.57 % increase over 2021) and at the retail centre level was ₹79865 crores (4.21 % increase over 2021). The average unit price per kg of fish at the landing centre was ₹166.90 (5.69 % decrease over 2021) and at the retail centre was ₹228.84 (5.55 % decrease over 2021). The marketing efficiency was 72.93 % (4.18 % increase over 2021).

State	Valuation (₹ crores)					
	Landing Centre			Retail Centre		
	2021	2022	Share (%)	2021	2022	Share (%)
West Bengal	2336	3153	5.41	2934	4240	5.31
Odisha	3084	2521	4.33	4274	3388	4.24
Andhra Pradesh	2808	3221	5.53	4048	4638	5.81
Tamil Nadu	7908	10319	17.72	15179	14352	17.97
Puducherry	594	771	1.32	815	1105	1.38
Kerala	11639	11053	18.98	14304	15146	18.97
Karnataka	10253	10885	18.68	12685	14635	18.32
Goa	1139	1146	1.97	1301	1463	1.83
Maharashtra	2625	3674	6.31	3317	4966	6.22
Gujarat	10138	9937	17.06	16138	13849	17.34
Daman & Diu	1124	1567	2.69	1645	2083	2.61
Total	53648	58247	100.00	76640	79865	100.00

Data Collection Centres of ICAR-CMFRI





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