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Marine Fish Landings in India 2023



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Disclaimer: The marine fish landings data used in this study/ publication are research data of ICAR-CMFRI collected through diachronic primary surveys following a stratified multi-stage random sampling design across the coastline of India.

Marine Fish Landings in India 2023



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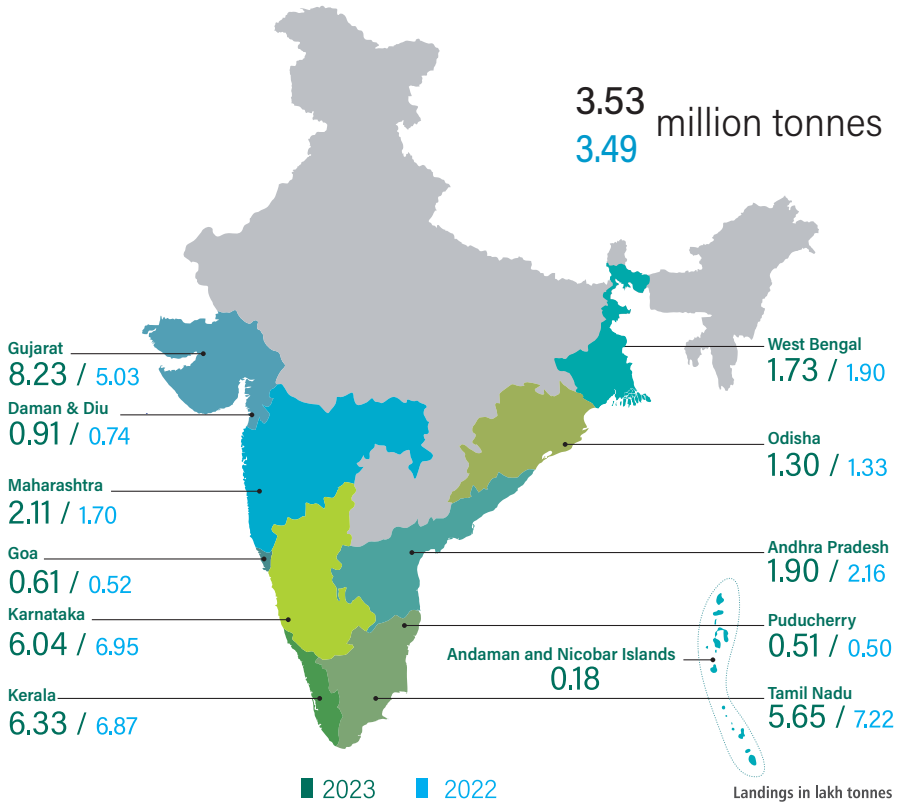


Marine Fish Landings in India 2023 At a Glance

- The estimated marine fish landings along the mainland of India in 2023 was 3.53 million tonnes, indicating a 1.2% increase compared to the landings in 2022. The marine fish landings increased noticeably by 15.75% in comparison to 2021.
- This year ICAR-CMFRI could expand its survey footprint to Andaman and Nicobar Islands (ANI) with the active support of the UT's Fisheries Department as per an understanding of joint effort to estimate landings and efforts akin to other maritime states which together brought the total estimated marine fish landings of the country as 3.55 million tonnes including the 18381 tonnes from the ANI.
- Gujarat, after a series of lull around the pandemic instance, secured the top position in fish landings with 8.23 lakh tonnes, constituting 23.31% of the total landings in the country, followed by Kerala with 6.33 lakh tonnes and Karnataka with 6.04 lakh tonnes.
- Indian mackerel retained its status as the top landed resource in the country, with a total of 3.43 lakh tonnes, consistent with 2022.
- Major marine fish resources in 2023 landings were, Indian mackerel 3.43 lakh tonnes accounted for 9.72% of the national total, Ribbon fishes 2.70 lakh tonnes (7.64%), Oil sardine 2.45 lakh tonnes (6.95%), Cephalopods 2.13 lakh tonnes (6.02%), and Non-penaeid prawns 2.11 lakh tonnes (5.98%).
- In 2023, the major gainers in terms of landings were Non-penaeid prawns, Ribbon fishes, and Indian mackerel compared to 2022. Conversely, Scads, Lesser sardines and Anchovies reported distinct fall in their contribution as compared to previous year.
- The cyclonic storm *Michaung* followed by spates of deluge in the north and south regions during November and December negatively impacted fishing days in Tamil Nadu.
- The resurgence of the species Red-toothed trigger fish (*Odonus niger*) was observed in the year 2023, with 0.48 lakh tonnes of landings.

India

Estimated Landings (mainland): **3.53** million tonnes



India is the third-largest producer of fish in the world. The marine fisheries sector is one of the largest employment generators in India, it improves the foreign exchange rate, apart from being a unique primary source of livelihood for a section of population steeped in tradition and skill. The Central Marine Fisheries Research Institute (ICAR-CMFRI) has a major mandate to monitor and evaluate India's exploited marine fish resources for deriving management measures to keep the harvest of the resources at sustainable levels. As in vogue, continuing the process of monitoring of resource exploitation, national-level sample survey was conducted using a two-stage stratified random sampling design, facilitated by the online data collection application Fish Catch Survey and Analysis (FCSA).

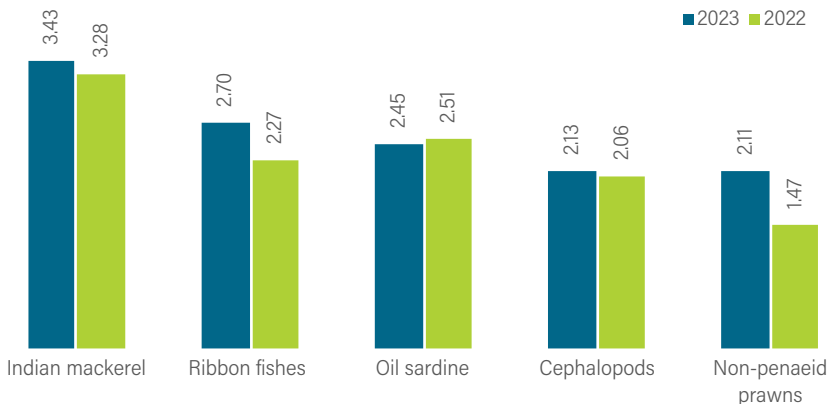
In the data collection system, dedicated technicians (harbour-based observers) with species identification

skills visit the landing centres according to work schedules generated under the sampling scheme and record different aspects of the fishery from sampled boats. These observers are being provided with regular training on taxonomy to enhance their species identification skills in the field. The data collected from 1250 landing centres all along the coast were processed to derive species-wise, fishing zone-wise, and gear-wise monthly marine fish landings distributed along the Indian coast, covering the nine maritime states and three coastal union territories.

The year 2023 witnessed a major success to ICAR-CMFRI in its incessant pursuit of implementation of a common sampling design for estimating marine fish landings throughout the country. The institute could successfully implement the marine fish landings data collection system in Andaman & Nicobar Islands (ANI) and arrived at the first estimate of the total

Estimated marine fish landings (tonnes) in India-2023

PELAGIC FINFISH		DEMERSAL FINFISH	
CLUPEOIDS		ELASMOBRANCHS	
Wolf herring	11724	Sharks	16734
Oil sardine	245420	Skates/Guitarfish	1658
Lesser sardines	136878	Rays	13643
Hilsa shad	11093	Eels	15184
Other shads	24745	Catfishes	62354
Anchovies		Lizard fishes	61555
<i>Coilia</i>	33555	PERCHES	
<i>Setipinna</i>	11252	Rock cods	69099
<i>Stolephorus</i>	67464	Snappers	11166
<i>Thryssa</i>	40544	Pig-face breams	8771
Other clupeids	65531	Threadfin breams	207232
Bombayduck	72806	Bullseyes	46165
Half beaks & Full beaks	6828	Other perches	58012
Flying fishes	1108	Goatfishes	15604
Ribbon fishes	269616	Threadfins	8588
CARANGIDS		Croakers	103560
Horse mackerel	39031	Silverbellies	44202
Scads	123758	Whitefish	5288
Leather-jackets	12358	POMFRETS	
Other carangids	109518	Black pomfret	14885
MACKERELS		Silver pomfret	21585
Indian mackerel	343042	Chinese pomfret	6602
Other mackerels	53	FLAT FISHES	
SEER FISHES		Halibut	994
<i>Scomberomorus commerson</i>	22428	Flounders	271
<i>Scomberomorus guttatus</i>	13592	Soles	37743
<i>Scomberomorus lineolatus</i>	2	CRUSTACEA	
<i>Acanthocybium solandri</i>	508	Penaeid prawns	159201
TUNNIES		Non-penaeid prawns	211260
<i>Euthynnus affinis</i>	49727	Lobsters	2244
<i>Auxis</i>	19657	Crabs	62696
<i>Katsuwonus pelamis</i>	21928	Stomatopods	9868
<i>Thunnus tonggol</i>	4348	MOLLUSCA	
<i>Thunnus albacares</i>	17727	Bivalves	9473
Other tunnies	577	Gastropods	4892
Bill fishes	12678	CEPHALOPODS	
Barracudas	35129	Squids	105818
Mulletts	14172	Cuttlefish	86842
Unicorn cod	84	Octopus	19857
OTHERS			
<i>Odonus niger</i>	48038		
MISCELLANEOUS	140526		
TOTAL		TOTAL	3530491
Total estimated landings from Andaman and Nicobar Islands			18381
TOTAL		TOTAL	3548872
Production of resources that are harvested by localized effort			
Seaweed	72385	Mussels, Oysters & Clams	123047
TOTAL		TOTAL	3744304



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

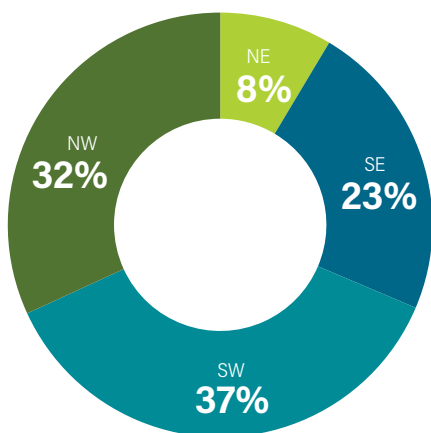
marine fish landings of ANI through the CMFRI methodology which together brought the total estimated marine fish landings from the country as 3.55 million tonnes including the 18381 tonnes from the ANI. The ANI estimates are first of their kind for that archipelago with distinct kinds of fisheries, mostly small scale, which has been under the lens for modernization and diversification by the administration. Towards ensuring parity of sequential comparison, as a one time exemption, the figures without including ANI estimates are being discussed.

The marine fish landings from the coast of the mainland of India in 2023 were estimated as 3.53 million tonnes against 3.49 million tonnes in 2022, experienced a rise of about 1.2%. Compared to the year 2021, an increase of 15.75% was reported in the marine fish landings. Gujarat and Tamil Nadu swapped their positions *vis-à-vis* 2022 and Gujarat climbed

back to the first position in fish landings (8.23 lakh tonnes) followed by Kerala (6.33 lakh tonnes) and Karnataka (6.04 lakh tonnes). Tamil Nadu, which occupied the top two places in preceding years, has moved to the fourth slot. The percentage contribution of these states towards India's total marine fish landings were 23.3%, 17.9%, 17.1% and 16.0% respectively. The decline in landings of Tamil Nadu was majorly due to severe cyclonic storm *Michaung* which was formed in the Bay of Bengal during the latter part of November and especially in December 2023 and subsequent spells of deluge that cut off key maritime districts from action, had an adverse impact to the number of fishing days. Compared to the landings in 2022, there was a 63.7% increase in Gujarat landings, 24.3% increase in Maharashtra, 23.2% increase in Daman & Diu, 16.8% increase in Goa and 2.3% increase in Puducherry. The maritime states with a reduction in landings in 2023 compared to 2022 were Tamil Nadu (21.8%), Karnataka (13.1%), Andhra Pradesh (12.2%), West Bengal (8.8%), Kerala (7.8%) and Odisha (2.4%).

In 2023, the maximum landings were in the southwest (SW) region with 1.3 million tonnes (37%), followed by 1.12 million tonnes (32%) in the northwest (NW) region, 0.81 million tonnes (23%) in the southeast (SE) region and 0.3 million tonnes (8%) in the northeast (NE) region. The northwest region accounted for an increase in the total landings of nearly 3.78 lakh tonnes, whereas the southeast regions recorded a considerable decrease in the fish landings compared to 2022.

Major marine fish resources in 2023 landings were, Indian mackerel 3.43 lakh tonnes, accounted for 9.72% of the national total, Ribbon fishes 2.70 lakh tonnes (76.4%), Oil sardine 2.45 lakh tonnes (6.95%), Cephalopods



Region-wise Landings (%)



Mechanized 79



Motorized 20



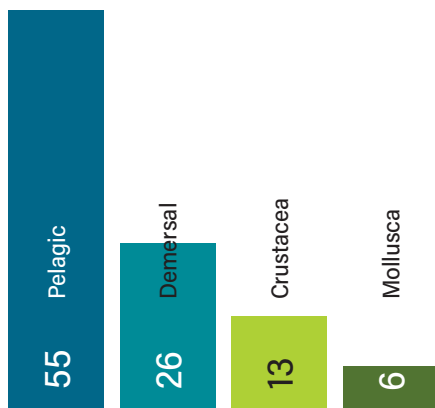
Non Motorized 1

Sector-wise landings (%)

2.13 lakh tonnes (6.02%), Non-penaeid prawns 2.11 lakh tonnes (5.98%), Threadfin breams 2.07 lakh tonnes (5.87%), Penaeid prawns 1.59 lakh tonnes (4.51%), Anchovies 1.53 lakh tonnes (4.33%), Lesser sardines 1.37 lakh tonnes (3.88%) and Scads 1.24 lakh tonnes (3.51%). Compared to the landings in 2022, Indian Mackerel retained its first position with an increment of 4.7%. There was a significant increase of 43.68% in the landings of Non-penaeid prawns, while a decrease of 24.25% was observed in the landings of scads.

The three categories of fishing crafts - mechanized, motorized and non-motorized - that collectively make up the total effort expended in fishing. Their contribution to the total landings were 2.8 million tonnes (79%), 0.71 million tonnes (20%) and 0.03 million tonnes (1%) respectively. Compared to the previous year, mechanized fishing crafts (2.85 million tonnes) and non-motorized fishing crafts (0.04 million tonnes) exhibited a slight decline in the total landings, whereas motorized fishing crafts (0.61 million tonnes) showed a marginal increase.

The overall catch rate estimates in 2023 envisaged that mechanized fishing crafts accounted for 2863 kg/trip, motorized fishing crafts reported 149 kg/trip and non-motorized fishing vessels recorded 46 kg/trip. With respect to the trips conducted and actual fishing hours



Assemblage (%)

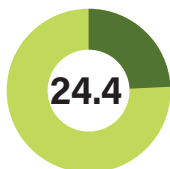
observed, mechanized fishing crafts contributed a paramount share to the maximum landings.

Pelagic finfishes constituted the major portion of the landings in 2023 with 1.93 million tonnes with 55% of the national total followed by demersal finfishes with 0.93 million tonnes (26%), crustacea with 0.45 million tonnes (13%) and mollusca with 0.23 million tonnes (6%).

The quarter-wise analysis of marine fish landings in 2023 showed that the maximum landings occurred in the fourth quarter (October-December) with 1.29 million tonnes (36.5%) similar to the previous year 2022. The first and third quarters bagged the succeeding positions with 0.86 million tonnes (24.4%) and 0.85 million tonnes (24.1%) and the second quarter remained its fourth position (0.53 million tonnes, 15%).

A total of 1155 species were observed in the sampled fish landings along the coastline of India. The maximum number of species were found in Tamil Nadu (744) followed by Kerala (717), Andhra Pradesh (382) and Maharashtra (337).

Jan-Mar



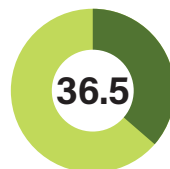
Apr-Jun



Jul-Sep



Oct-Dec

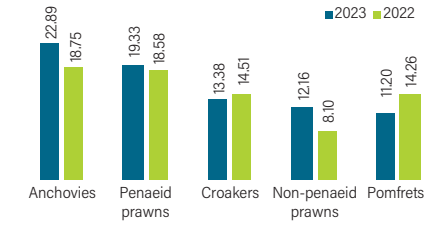


Quarter-wise landings (%)

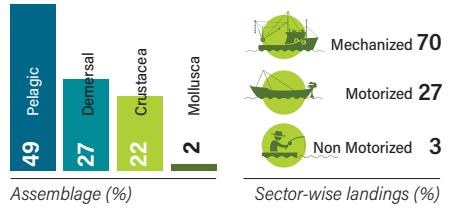
West Bengal

Estimated Landings: **1.73** lakh tonnes

- » The West Bengal's marine fish landings comprised of 1.32 lakh tonnes of finfishes and 0.41 lakh tonnes of shellfishes totalling 1.73 lakh tonnes, a 0.17 lakh tonnes decline from 2022.
- » Anchovies, Penaeid prawns, and Croakers accounted for nearly one-third of the state's landings. They have been the top three resources for the past four years.
- » Bombayduck and Hilsa shad, two of the state's key resources, experienced a decrease in landings, with a catch of 9924 tonnes and 6728 tonnes respectively.
- » Even though the unit operations of trawlers were less by around 6500 trips, which resulted in 36% drop in trawl landings, still they accounted for the largest share (47%). Gillnet units could increase their catch by 13% this year, making them the second highest contributor.
- » The South 24 Parganas district accounted for 62% of the state's marine fish landings.



Major landings (in '000 tonnes)

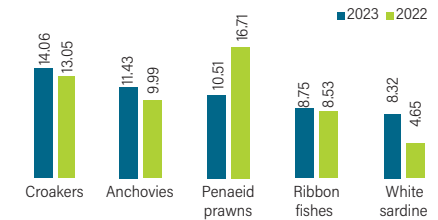


Quarter-wise landings (%)

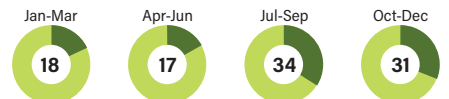
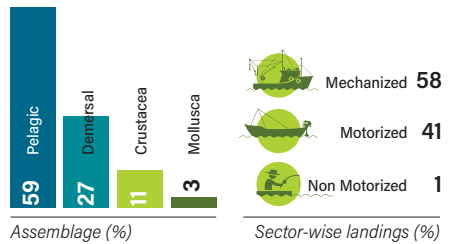
Odisha

Estimated Landings: **1.30** lakh tonnes

- » Odisha's marine fish landings totalled 1.30 lakh tonnes in 2023 with a reduction of 2.4% compared to the previous year.
- » In 2023, Croakers and Anchovies were the two predominant species and their landings marginally increased over 2022, while Penaeid prawns, which occupied the top spot since 2020, declined by 37% and shifted to third position.
- » The motorized sector recorded a rise in landings from 29% in 2022 to 41% in 2023, while the mechanized sector had a decline in landings from 67% to 58%.
- » The state's 85% landings were harvested by multiday trawl units (53.4%) and motorized gillnet units (31.6%).
- » The highest landings was recorded from the Balasore district (0.52 lakh tonnes), followed by the Jagatsinghpur district (0.24 lakh tonnes).



Major landings (in '000 tonnes)

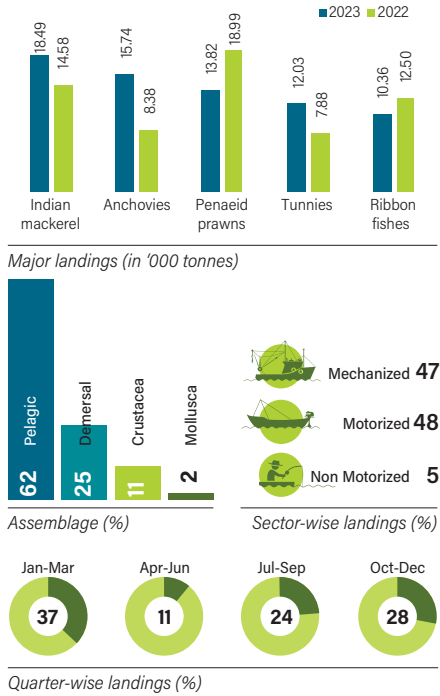


Quarter-wise landings (%)

Andhra Pradesh

Estimated Landings: **1.90** lakh tonnes

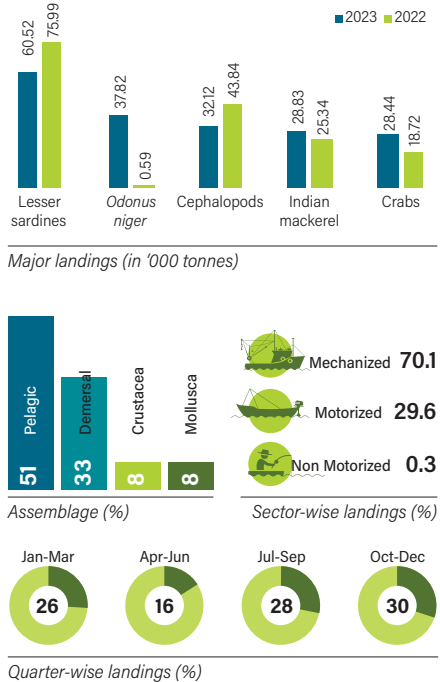
- » The total marine fish landings from Andhra Pradesh in 2023 was estimated at 1.90 lakh tonnes, reflecting a 12% decrease compared to the previous year.
- » Indian mackerel stood out as the top landed resource in 2023, reaching 0.18 lakh tonnes, indicating a significant increase of 27% compared to the preceding year.
- » The landings of Lesser sardines in the state experienced a substantial 72% decline in 2023.
- » The multi-day trawl net yielded the highest landings, totalling 0.87 lakh tonnes, from the mechanized sector.
- » With the landing estimate trend settling in the two lakh tonnes marking, the state is in for a longer haul to catch up its 35 year peak of 3.42 lakh tonnes in 2014.
- » The proportion of landings from the non-motorized sector in Andhra Pradesh is comparatively higher than the other maritime states.



Tamil Nadu

Estimated Landings: **5.65** lakh tonnes

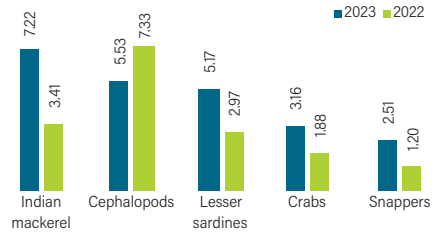
- » The state of Tamil Nadu witnessed a decrease of 22%, this decline was primarily due to the fall in the catch and effort of single-day trawl landings to the tune of 42%.
- » *Michaung*, a severe cyclonic storm occurred in the latter part of November and especially in December, had a negative impact on the fishing calendar days of state.
- » Lesser sardines maintained its position as the highest landed resource group, consistent with 2022. Despite being the topmost landed resource, Lesser sardines experienced a decline of 20%.
- » After a gap of four years, the species *Odonus niger* emerged as the second highest-landed resource.
- » Out of the 14 marine districts of Tamil Nadu, Kanyakumari, Tuticorin, and Chennai contributed the most to the landings, accounting for 21%, 16% and 14% respectively.



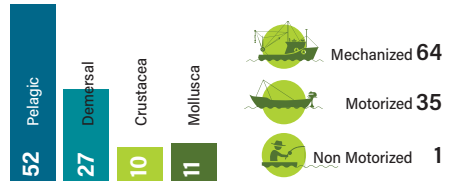
Puducherry

Estimated Landings: **0.51** lakh tonnes

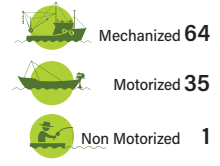
- » Puducherry experienced a marginal increase (2%) in landings, mainly due to the three-fold increase in landings of Mechanized Ring seine and almost doubling in the number of unit operations.
- » There was a notable decrease (25%) in the landings of Cephalopods compared to 2022.
- » The year witnessed a two-fold increase in the landings of Indian mackerel, Snappers, Threadfin breams, Lesser sardines and Crabs.
- » Motorized gillnets contributed the major share with 27%, followed closely by multi-day trawl nets at 26%.
- » Pondicherry fisheries harbour had contributed 28% towards the total catch.



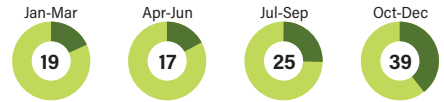
Major landings (in '000 tonnes)



Assemblage (%)



Sector-wise landings (%)

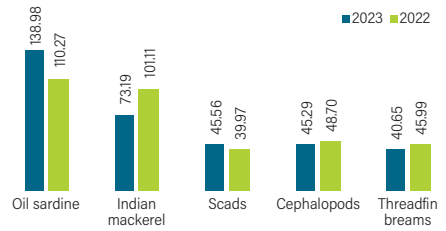


Quarter-wise landings (%)

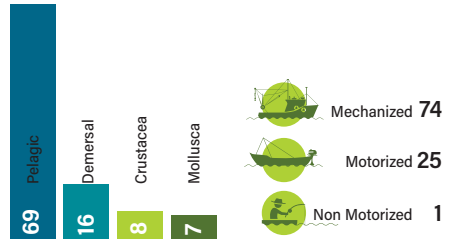
Kerala

Estimated Landings: **6.33** lakh tonnes

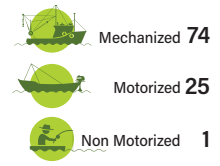
- » There was a decline of 8% in the total landings of the state when compared to previous year's estimate, but it is the third highest catch in the last decade.
- » Oil sardine registered an increase of 26% and remained in the top most position. On the other hand, Indian mackerel, the other major resource recorded a 28% decrease but continued in the second position.
- » Re-emergence of *Odonus niger* was also noted (7132 tons) especially during the 4th quarter (Oct-Dec).
- » Mechanised sector where trawlers and ringseiners are the key contributors showed a decrease of nearly 10%. But no significant difference was noticed in the fishing effort where the unit operations remained the same (1.9 lakh trips).
- » Ernakulam and Kollam were the two major districts where more than half of the total catch have been landed.



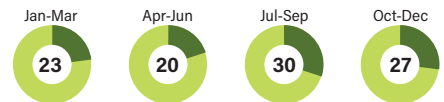
Major landings (in '000 tonnes)



Assemblage (%)



Sector-wise landings (%)

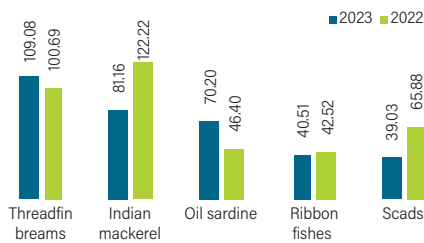


Quarter-wise landings (%)

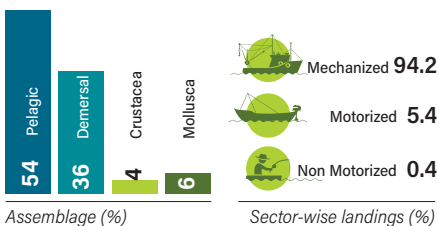
Karnataka

Estimated Landings: **6.04** lakh tonnes

- » An estimated 6.04 lakh tones of marine fish were landed in Karnataka in 2023, a 13% decrease from the record high landings in 2022.
- » The share of mechanized sector landings from trawlers and purseseiners were 71% and 26% respectively. Compared to other states, the landings from motorized sector was less in Karnataka.
- » Around 47% of the Pelagic finfish landings composed of Oil sardine and Indian mackerel whereas nearly half of the Demersal finfish landings were Threadfin breams.
- » While an increase of 51% was noted in the landings of Oil sardine, the landings of mackerel declined by 34% compared to the previous year.
- » The major contribution of landings was from the high-profile harbours viz, Mangalore (44%) and Malpe (41%).

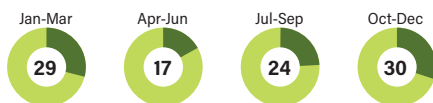


Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)

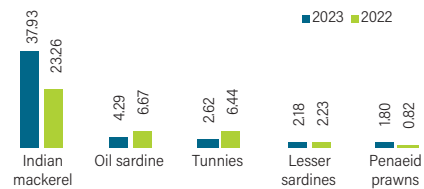


Quarter-wise landings (%)

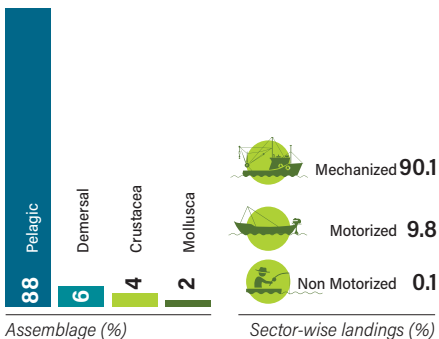
Goa

Estimated Landings: **0.61** lakh tonnes

- » The total marine fish landings from Goa showed an increase of 17% during 2023 (0.61 lakh tonnes) when compared to 2022.
- » Purseseine units dominated among the contribution from mechanized sector.
- » Indian mackerel, which was the prime resource, constituted 62% of the total landings.
- » While the landings of Indian mackerel showed a growth of 63%, Oil sardine landings dropped by 36% when compared to 2022.
- » South Goa district, where the majority of 36 landing centres are located, accounted for nearly 63% of the landings while the remaining 37% of the landings were from North Goa.
- » Despite a drop of 13% in the number of units operated and 66% in the fishing hours in the purseseine units, landings showed an increase of 14%, which resulted in an increase of 31% in the catch per unit effort, when compared to 2022.

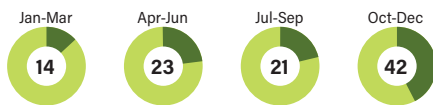


Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)

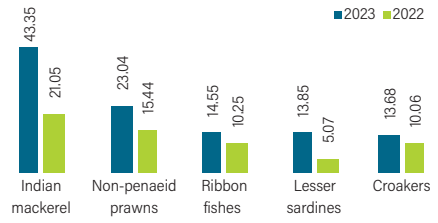


Quarter-wise landings (%)

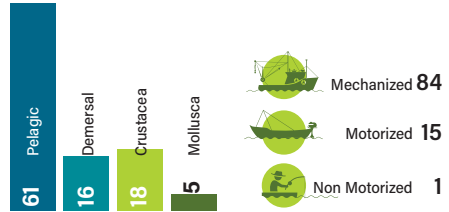
Maharashtra

Estimated Landings: **2.11** lakh tonnes

- » Maharashtra reported a 24.3% increase in landings compared to 2022, representing 5.98% of all India's marine fish landings, ranked fifth position in the list of total marine fish contributors in 2023.
- » The landings of Lesser sardines witnessed a three-fold increase, while Indian mackerel showed a two-fold increase.
- » A significant decrease of 62% was observed in the landings of Oil sardine.
- » Mumbai city district contributed the maximum of 33.91% of state's total landings followed by Raigad (21.16%) and Ratnagiri (20.98%).
- » In 2023, considering the gear-wise contribution, mechanized purse seine was observed as the major contributor of landings with 0.83 lakh tonnes followed by multiday trawl net (0.54 lakh tonnes) and mechanized dolnet (0.26 lakh tonnes).

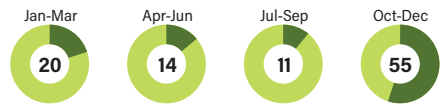


Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)

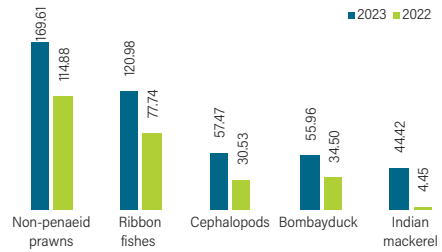


Quarter-wise landings (%)

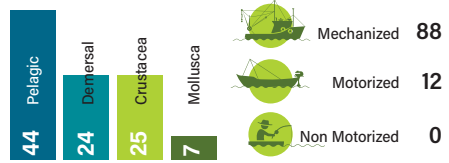
Gujarat

Estimated Landings: **8.23** lakh tonnes

- » Gujarat came in top place with a noticeable 64% rise in marine fish landings over the previous year.
- » In 2023, Non-penaeid prawns, mainly the small shrimps, recorded the largest landings over the last three decades in the state, totalling 1.70 lakh tonnes.
- » All major resources exhibited a hike in total landings in the state of Gujarat compared to 2022.
- » The multi-day trawlers, which had always been the backbone of the marine fishery production of the state, recorded the largest landings in the mechanized sector, with a total of 4.29 lakh tonnes.
- » There was a 58% rise in landings in the mechanized sector from the previous year.
- » Gir Somnath district, with Veraval fisheries harbour, constituted 51% (4.18 lakh tonnes) of the state's total landings followed by Junagadh (16%) and Porbandar (14%).

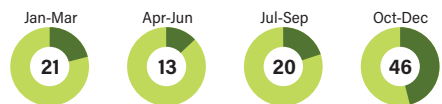


Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)

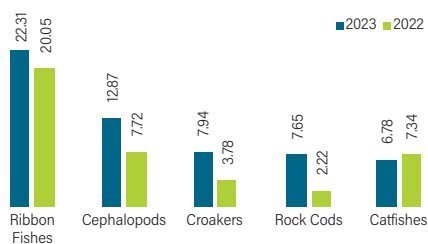


Quarter-wise landings (%)

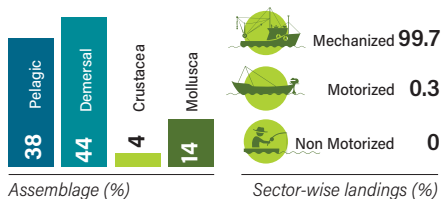
Daman & Diu

Estimated Landings: **0.91** lakh tonnes

- » Marine fish landings of Daman & Diu in 2023 (0.91 lakh tonnes) exhibited an increase of 23% compared to previous year (0.74 lakh tonnes).
- » There was an 11% increase in Ribbonfish landings in 2023 compared to 2022.
- » All major resources showed an increase in production except Bullseyes, Lesser sardines and Catfishes.
- » The landings of Cephalopods and Croakers witnessed a two-fold increase in 2023.
- » Multi-day trawl net scored the maximum share in the landings (0.86 lakh tonnes) followed by mechanized gill net (0.03 lakh tonnes) and mechanized dolnet (0.01 lakh tonnes).
- » These figures may have to be juxtaposed with the steep fall witnessed during SARS-Cov-2 pandemic and must be viewed as a subsequent uptick in landings.



Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)

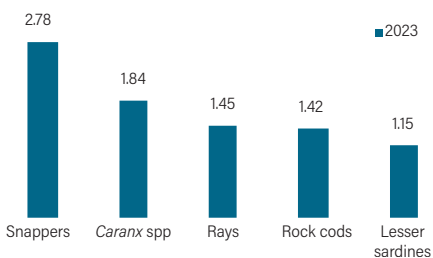


Quarter-wise landings (%)

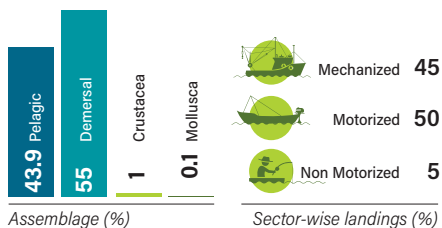
Andaman & Nicobar Islands

Estimated Landings: **0.18** lakh tonnes

- » ICAR-CMFRI expanded survey coverage to Andaman and Nicobar Islands this year, using a Stratified Multistage Random Sampling Design for marine fish landing estimation with the support of the Fisheries Department.
- » The total marine landings of Andaman and Nicobar Islands was estimated at 18381 tonnes.
- » The South Andaman district, with 85% of landings, outperformed the two districts, North & Middle Andaman and Nicobar, with substantial contribution from Junglighat landing centre.
- » Mechanized longliners and hooks & lines with inboard engines contributed to the tune of 42% of the landings, Snappers being the major resource caught in these gears.
- » The fisheries were adversely affected by loss of fishing days due to cyclonic warnings and inclement weather during the year.

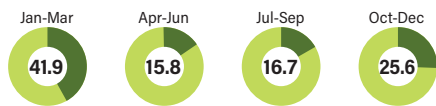


Major landings (in '000 tonnes)



Assemblage (%)

Sector-wise landings (%)



Quarter-wise landings (%)

Data Collection Centres of ICAR-CMFRI





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