An Account of Large Pelagic Fishery of Maharashtra

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Abstract

Large pelagic fishes are one of the preferred fishes in domestic and international trade. Information on their distribution, abundance and stock status are limited from the Maharashtra coast. Nine major groups are contributing to the fishery in Maharashtra and the major share is of seerfishes (38%). Gillnets contribute 48% of the landings of large pelagics. This group contributed 14% of the total pelagic fish landings during 2007-2019 period with August to December as the months of peak landing, contributing about 63% of the annual landings.

***Keywords**: Large pelagics, Maharashtra, fishery*

Introduction

Large pelagic (LP) fishes are apex predators in the marine ecosystem and most of them also have wide range of distribution and often undertake long distance migration. These resources are exploited by diverse gears off Maharashtra coast and landings showed the noteworthy growth since 1995, linked to the introduction of modern harvesting techniques like purse seines, mechanisation, and spatial extension of fishing areas.

Fishery trends

The LP landing was comprised of tunas, billfishes, barracudas, seerfishes, queen fishes, dolphinfishes, rainbow runner, cobia and needlefishes. Even though a seasonal targeted fishery for LP resources exists along the coast, mostly they occur as bycatch in various gears. The major landing centres for the resources are Naigaon, Sassondock, New Ferry Wharf, Revdanda, Mirkarwada and Malvan (Fig 1).

The average annual landings of different large pelagic resources from 2007-2019 indicated seerfish is the major contributor (38 %) with an average landing of 6,265 t followed by tuna (34%) with an average landing of 5,652t. The average landing of queenfish was 1564 t accounting 9% followed by barracuda (1030t, 6%) while other resources like billfishes (4%), Cobia (4%), Dolphinfish (3%), Needlefish (1.4%) and rainbow runner (0.4%) were recorded. Seer fishes locally called as "Surmai", constituted 38% of LP fishery in Maharashtra during 2007-19. Species such as Narrow-barred Spanish mackerel *Scomberomorus commerson* (57%), Indo Pacific king mackerel, *Scomberomorus guttatus* (32%), Streaked Spanish mackerel *Scomberomorus lineolatus* (10%) and Wahoo *Acanthocybium solandri* (1%) were recorded. Tunas or "Kuppa" was another major contributor to the fishery, accounting 34% of the landings. Species occurring in the landings were Kawakawa *Euthynnus affinis* (55%), Longtail tuna *Thunnus tonggol* (25%) Frigate Tuna *Auxis thazard* (3%), Bullet tuna *Auxis rochei* (2%), and bonito *Sarda*

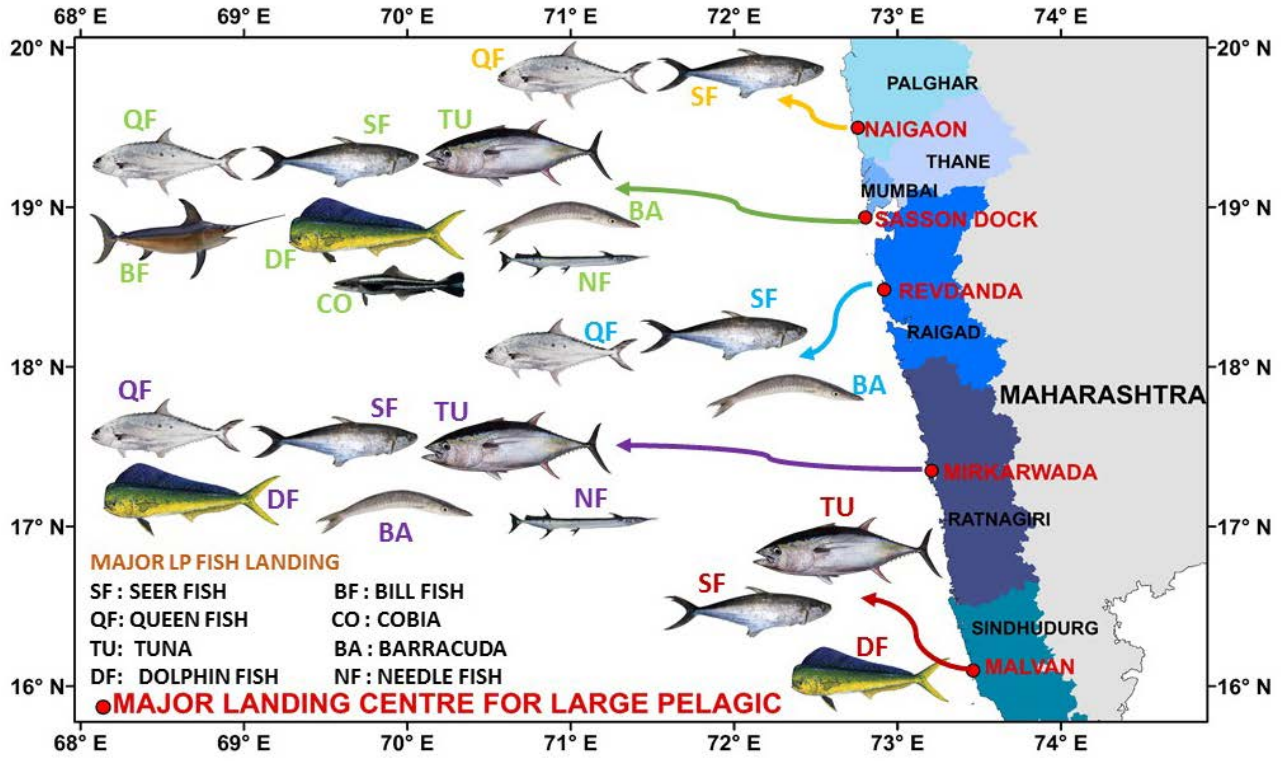

Fig. 1 Major landing centres for large pelagics in Maharashtra

orientalis (1%) among neritic tunas and yellowfin tuna *Thunnus albacares* (6%), skipjack tuna (*Katsuwonus pelamis*) and bigeye tuna *Thunnus obesus* (1%) among the oceanic tunas. Queenfishes locally called as " Dagol" contributed 9% with four species such as Double spotted queenfish, *Scomberoides lysan* (52%), Barred queenfish, *Scomberoides tala* (26%), Talang queenfish, *Scomberoides commersonianus* (14%) and Needle scaled queenfish, *Scomberoides tol* (14%) represented in the fishery. Barracudas known as "Badri/Ghalse" contributed 6% of the LP fishery with Pickhandle barracuda, *Sphyraena jello* (24%), Sawtooth barracuda *Sphyraena putnamae* (16%), Great barracuda, *Sphyraena barracuda* (8%), Obtuse barracuda *Sphyraena obtusata* (1%) and other *Sphyraena* spp. (51%). Billfishes were represented by five species such as Indo-Pacific sailfish, *Istiophorus platypterus* (53%), Swordfish, *Xiphias gladius* (32%), Black marlin, *Makaira indica* (11%), *Makaira* Sp. (Marlin, 3%) and *Terapturus* sp. (spearfish, 1%). Full beaks locally called as "Sumb/Tol", comprised by Flat needlefish, *Ablennes hians* (36%), Hound needlefish, *Tylosurus crocodilus* (10%), *Tylosurus* sp. (33%), Spottail needlefish, *Strongylura strongylura* (7%), Banded needlefish, *Strongylura leiura* (6%) and *Strongylura* sp. (8%) were recorded. Cobia *Rachycentron canadum* formed a minor fishery. Dolphinfishes were represented by two species *Coryphaena hippurus* and *C. equiselis* and fishery dominated by former. Rainbow runner was represented by a lone species *Elagatis bipinnulata*.

Gillnets, purse seines and trawlers were major contributors to the LP landings, while bag net and hook & line were nominal (Fig. 2). In trawls, LP were mostly caught as bycatch along with other targeted groups. Gillnets mainly target seer fish, tuna, billfishes, cobia and queen fishes. Both the motorised and mechanized crafts made up of wood and FRP are engaged in the fishery. The colour of the net changes according to the season and targeted fish. The introduction of purse seining has significantly improved the LP landing and contributes 33.9% of total groups landing. Trawl net contribute 14% of LP landing comprising seerfish, tunas, barracudas, queenfish and Rainbow runner. Bag nets contributed 3% of LP landing and the major species caught were seer fishes, tunas and barracudas mostly being incidental or non-targeted catch. Hook and Line operated from motorised boats target large seer fishes, cobia, billfishes and queen fishes. The multiday bag

netters operates about 40 to 50 nautical miles (nmi) away from the coast at 30 m depth zone. The purse seiners and gillnetters operate at 30 to 70 m water depth about 15 to 40 nmi away from the coast. The purse seiners operate up to 80 m water depth and 10 to 40 nmi away from the coast.

LP landings with an average contribution of 14% to the total pelagic fish landings ranged from 18054 t in 2007 to 13653 t in 2019 with an average of 16553 t (Fig.3). They show high seasonal fluctuation, and peak period is during August to December, contributing 63% of the annual landings while January to May is the lean season (Fig.4). Large pelagic fishery itself is considered as a bycatch except for tuna in some parts of Maharashtra. The gill nets, purse seines and trawl nets are mainly targeting rays, sharks and clupeid, and large pelagics often occur as bycatch. The LP landings mainly go to local markets for domestic consumption either in fresh or dried form. The

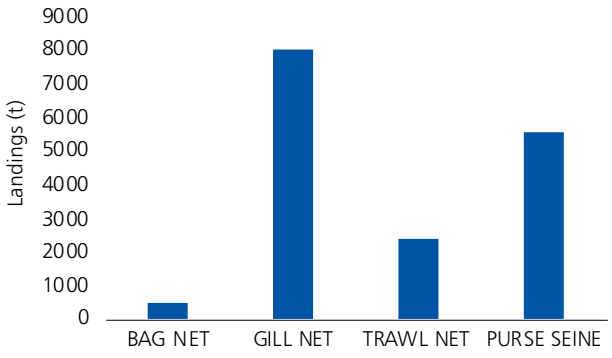

Fig. 2 Gearwise landings of large pelagics

billfishes, cobia, needle fishes, queen fishes, dolphin fishes and rainbow runner are mainly transported to the interior market in a frozen/ iced condition. Barracudas, seer fishes and tunas are mainly exported and rest traded in domestic markets. Only the major landing centres in Maharashtra have facilities like

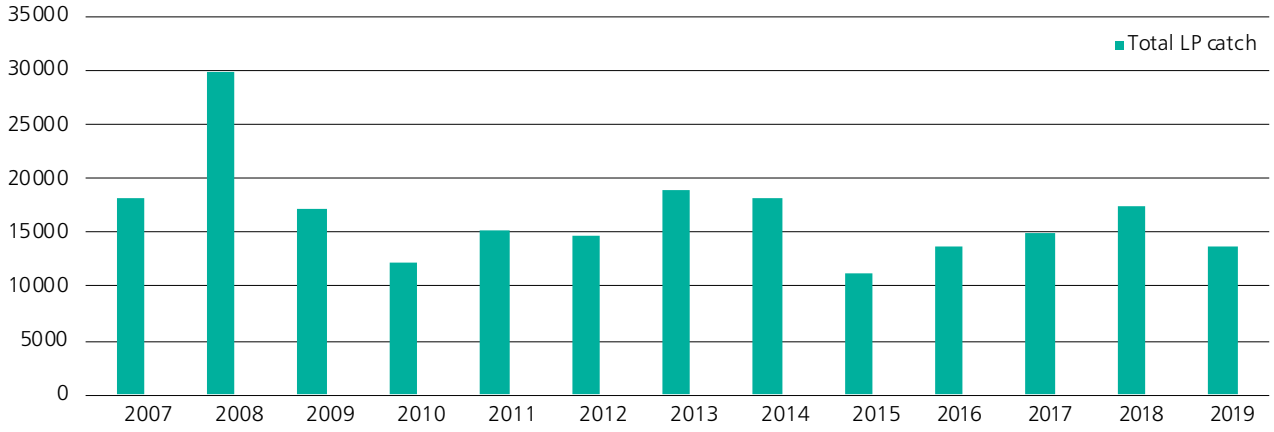

Fig. 3. Trend of annual landings (t) of large pelagics in Maharashtra

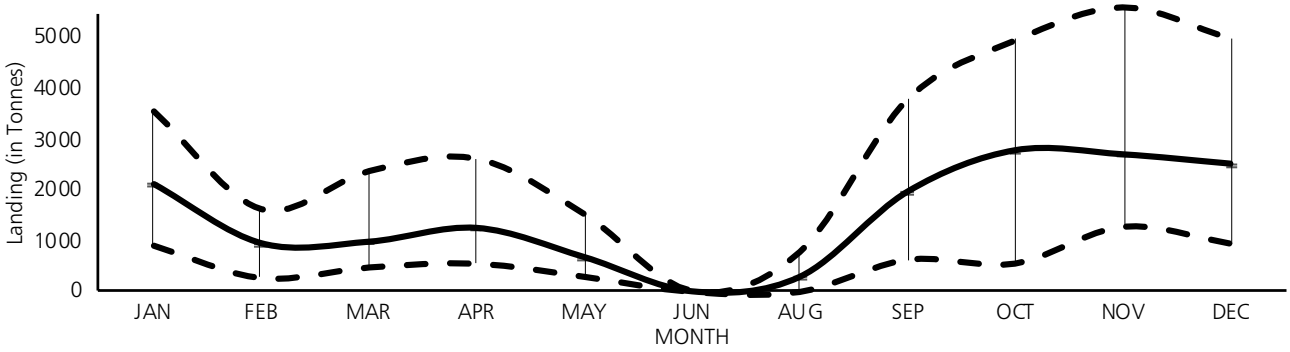

Fig.4. Seasonal landing trends (t) of large pelagics in Maharashtra (average 2007 -2019 with upper and lower limits)

continuous ice supply, and water etc. Refrigerated vehicles are mostly concentrating operations from major landing centres due to assured fish supply and better connectivity. In other minor landing centres, infrastructure is limited and the landings are mainly channelled for domestic consumption. Prices depend on the size and quality of fishes landed with lower quality grades sold in domestic markets in fresh or dried forms. Marketing channels indicate catch is sold to traders/ agents through competitive auction at the landing points. The sorted fishes according to the quality channelled for export industries or to local traders.

Future prospects

There are several minor and beach landing centres and log sheet maintenance for recording fish catch in fishing vessels are mostly absent. Stock assessments of the resources are also limited but required for science-based management advisories. The economic loss incurring at post-harvest stage due to quality concerns is huge but demand for marine fish is increasing and there is scope for value-added and properly stored and processed products from LP. Central Government programmes such as *Pradhan Mantri Matsya Sampada yojana* (PMMSY) to develop infrastructure facilities to handle a large number of fishing vessels and improving supply chains appear promising.