

## Research Communications

# Fishery trends of large pelagics along the Kerala coast

U. Ganga<sup>1</sup>, K. P. Said Koya<sup>2</sup>, S. Surya<sup>3</sup>, S. Jasmine<sup>3</sup>, Prathibha Rohit<sup>4</sup>, T. B. Retheesh<sup>1</sup>, A. M. Abbas<sup>1</sup>, A. R. Akhil<sup>1</sup>, H. Jose Kingsly<sup>3</sup> and E. M. Abdussamad<sup>1\*</sup>

<sup>1</sup>ICAR-Central Marine Fisheries Research Institute, Kochi-682 018, Kerala

<sup>2</sup>Calicut Research Centre of ICAR-Central Marine Fisheries Research Institute, Kozhikode-673 005, Kerala

<sup>3</sup>Vizhinjam Research Centre of ICAR-Central Marine Fisheries Research Institute, Vizhinjam P.O., Thiruvananthapuram - 695 521, Kerala

<sup>4</sup>Mangalore Research Centre of ICAR-Central Marine Fisheries Research Institute, Mangaluru - 575 001, Karnataka

\*E-mail: [abdussamadg@gmail.com](mailto:abdussamadg@gmail.com)

## Abstract

The estimated average annual landings of large pelagics in Kerala during 2013 -2019 was 35678 t, which formed about 16% of the national average landings of large pelagics of India. The average group wise contribution during 2013-2019 was mainly by tunas (54%), billfishes (15%), seer fishes (14%) and barracudas (8%). The peak fishery occurred during October to March with trawl nets, gill nets and hooks & lines employed. The mechanized, motorized and traditional sectors tap the resources which have demand in the domestic as well as export markets and a supply chain is well established. Appropriate management measures for sustainable utilization are flagged.

*Keywords:* Large pelagics, Kerala, supply chain, fisheries management

## Introduction

Among the maritime states of India, Kerala is holding the topmost position in the landings of large pelagics which comprises tunas (both neritic and oceanic), seerfishes, billfishes, large-sized carangids (rainbow runner and queenfish), dolphinfish, needlefish and cobia. The estimated average annual landings of large pelagics in Kerala during 2013 -2019 were 35678 tonnes (t) which contributed an average of 6% to the total annual landings of Kerala. The major large pelagic landing centres in the state are Neeleswaram (Kasargod district), Azhikkal, Ayikkara (Kannur district), Chembola, Puthiyappa&Beypore Fisheries Harbours (Kozhikode district), Ponnani (Malappuram district), Chettuva (Thrissur district), Munambam and Cochin Fisheries Harbours (Ernakulam district), Omanapuzha (Alappuzha district), Neendakara Fisheries Harbour, Vadi (Kollam district) and Vizhinjam Fisheries Harbour (Thiruvananthapuram district).

The average group-wise contribution of large pelagics landed during 2013-2019 were tunas (54%), billfishes(15%), seer fishes (14%), barracudas (8.34%), dolphinfishes (5%), Cobia (1.4%), Queen fishes (0.68%) and Needlefishes (1.38%) and major species are indicated in Table 1. Annual landing trends of the various groups indicated an increase (Fig.1).

Large pelagics are fished by large mechanized vessels such as trawlers (9.1- 16m OAL and 89-122 hp) and gillnetters cum liners (7.1-14m OAL and 60-99 hp). The motorized and traditional crafts operate boat seines, gill nets and hook and line. Trolling by towing baited hooks or lures through the water and longlining is used for catching tunas and billfishes. Hook and line fishing is done with monofilament twines categorized into numbers (40, 60, 80) inversely based on their thickness. For day fishing, No. 80 main lines with No. 60 branch line is used and for night fishing No. 30 is used for both main and branch lines. Similarly,

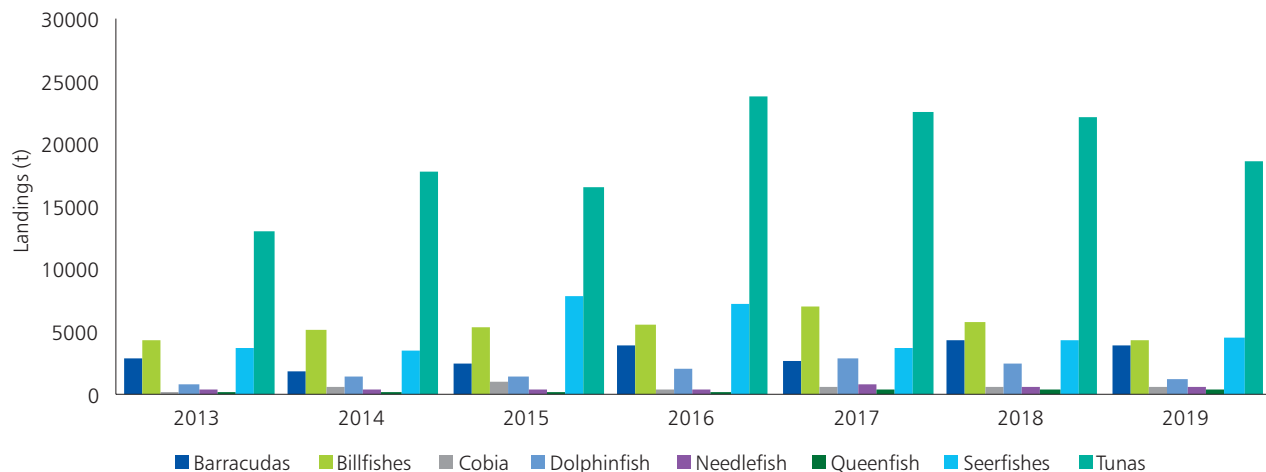


Fig.1. Trends in annual landings (t) of large pelagics in Kerala

Table 1. Major species of large pelagics landed along the Kerala coast

Group	Species	Vernacular name
Tunas	<i>Euthynnus affinis</i>	Choorā
	<i>Auxis thazard</i>	Choorā
	<i>Auxis rochei</i>	Kudukka
	<i>Thunnus tonggol</i>	Vaalan Kera
	<i>Thunnus albacares</i>	Kera
	<i>Katsuwonus pelamis</i>	Varayan choora
	<i>Sarda orientalis</i>	Neymeen choora
	<i>Gymnosarda unicolor</i>	Pallan choora
Billfishes	<i>Xiphias gladius</i>	Pannikkatta
	<i>Istiophorus platypterus</i>	Olameen
	<i>Istiompax indica</i>	Parappankkatta
	<i>Makaira mazara</i>	Olakkatta
	<i>Kajikia audax</i>	Mullamkkatta
Barracudas	<i>Sphyraena barracuda</i>	Seelav
	<i>Sphyraena arabiansis</i>	Neelanseelav
	<i>Sphyraena jello</i>	Seelav
	<i>Sphyraena putnamae</i>	Seelav
Belonids	<i>Ablennes hians</i>	Parappan Kolan
	<i>Tylosurus crocodilus</i>	Urulankolan
	<i>Tylosurus acus melanotus</i>	Urulankolan
Seerfishes	<i>Acanthocybium solandri</i>	Chundan Neymeen
	<i>Scomberomorus commerson</i>	Neymeen/ Ayikoora
Queenfish	<i>Scomberoides commersonianus</i>	Neyvatta
	<i>Scomberoides lysan</i>	Neyvatta
	<i>Scomberoides tol</i>	Polavatta
Rainbow runner	<i>Elegatis bipinnulata</i>	Poomeen
Cobia	<i>Rachycentron canadum</i>	Motha
Dolphinfish	<i>Coryphaena hippurus</i>	Chainvatta

different types of hooks are also categorized into numbers. Hooks used during day fishing ranged from No. 8 to No. 13 and hook No. 15 is used for

night fishing. The baits commonly used are scads, sardines and anchovies. Until recently, live baits were used along the Vizhinjam coast. Presently the crafts

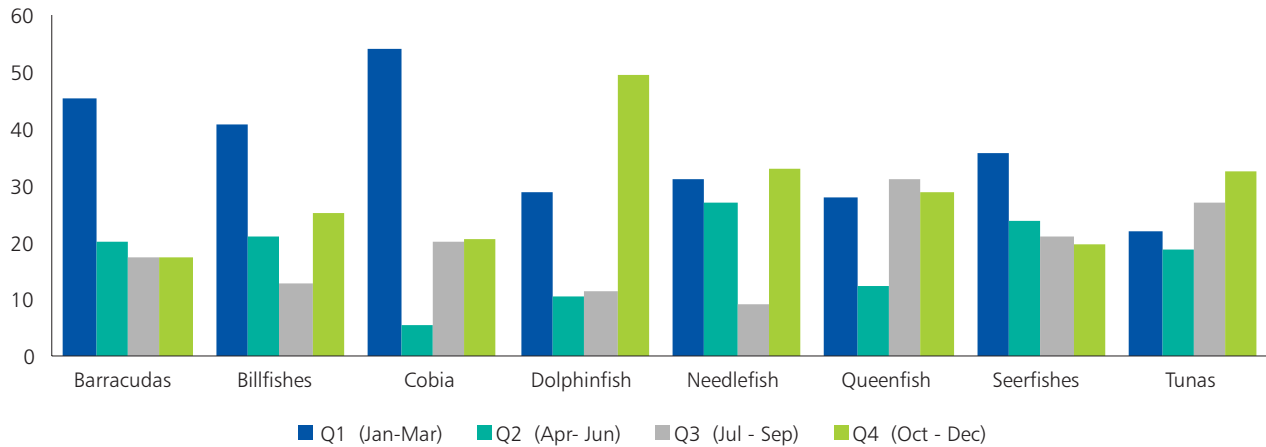


Fig. 2. Seasonal landing trends of large pelagics along Kerala coast

are equipped with artificial baits to attract fishes and aids the fishers to reduce searching time for live bait collection. The imported double hooks with artificial bait are used to catch seerfishes.

During the monsoon fishing ban period, large mechanized vessels are not allowed to fish along the Kerala coast and traditional fishers operate outboard motor fitted canoes for operating gill nets and hooks and lines. At Trivandrum, the entire coast is exclusively for the small scale fishing practices mainly using gillnets or lines and the catch is dominated by tunas. The gillnet operations are mainly carried out during the night, while hook and line fishing done during the daytime takes about 5-7 hours for operating the gear. Most of the fishers engaged in this fishery are from Poziyoor and Poovar villages of southern Kerala and Thothoor and Colachel villages of Tamil Nadu.

The peak period for large pelagic fishery along the Kerala coast was from October to March (Fig.2). The major volume of the annual landings of barracudas, billfishes, cobia and seer fishes were during the January- March period while dolphinfish and needlefish landed mostly during October – December. Landings of Queen fishes were higher in volumes landed during July – September.

The adult population supports the fishery of large pelagics along the Kerala coast except for King seer, Sword fish, Cobia and certain species of barracudas. Juvenile landings of these species were reported during post-monsoon months from trawls and gillnets (Tables 2 & 3).

Table 2. Size range of major large pelagics landed along the south Kerala coast

Species	Size range(mm)
<i>Acanthocybium solandri</i>	232-512
<i>Scomberomorus guttatus</i>	191-830
<i>S. commerson</i>	136-856
<i>Coryphaena hippurus</i>	375 -890
<i>Rachycentron canadum</i>	287-786
<i>Sphyrna putnamae</i>	310-435
<i>S. jello</i>	578-830
<i>S. barracuda</i>	845-1026
<i>S. obtusata</i>	105-332
<i>S. forsteri</i>	309-480
<i>Elegatis bipinnulata</i>	204-835
<i>Scomberoides tol</i>	298-344
<i>S.commersonianus</i>	136-856
<i>S. lysan</i>	268-550
<i>Euthynnus affinis</i>	215-678
<i>Thunnus albacares</i>	343-1022
<i>Sarda orientalis</i>	456-510
<i>Katsuwonus pelamis</i>	326-715
<i>Ablennes hians</i>	680-1252
<i>Strongylura strongylura</i>	598-655
<i>Tylosurus crocodilus</i>	600-1080
<i>T. acus melanotus</i>	1074-1167
<i>Istiophorus platypterus</i>	435-2120
<i>Xiphias gladius</i>	670-1950
<i>Auxis rochei</i>	260-310
<i>A. thazard</i>	280-450

Table 5. Size range and price of major large pelagics landed along the central Kerala coast

Species	Size (cm)	Price/kg (₹)
<i>Euthynnus affinis</i>	28–70	80–140
<i>Auxis</i> sp.	26–48	60–100
<i>Thunnus tonggol</i>	42–80	100–160
<i>Thunnus albacares</i>	38–182	120–200
<i>Katsuwonus pelamis</i>	36–75	80–140
<i>Acanthocybium solandri</i>	65–141	200–500
<i>Scomberomorus commerson</i>	28–135	200–850
<i>Xiphias gladius</i>	75–233	90–220
<i>Istiophorus platypterus</i>	90–228	160–220
<i>Istiompax indica</i>	139–332	180–240
<i>Makaira mazara</i>	122–240	180–240
<i>Sphyraena barracuda</i>	65–136	180–350
<i>Sphyraena arabiansis</i>	60–152	180–350
<i>Sphyraena jello</i>	40–132	180–350
<i>Sphyraena putnamae</i>	32–78	160–220
<i>Ablennes hians</i>	60–130	140–200
<i>Tylosurus crocodilus</i>	65–142	160–220
<i>Tylosurus acus melanotus</i>	60–122	140–200
<i>Scomberoides commersonianus</i>	36–122	120–350
<i>Scomberoides lyssan</i>	28–64	120–250
<i>Scomberoides tol</i>	22–48	80–120
<i>Elegatis bipinnulata</i>	40–138	120–300
<i>Rachycentron canadum</i>	28–142	200–550
<i>Coryphaena hippurus</i>	28–152	120–200

## Market chains

At Cochin Fisheries Harbour, a well-developed market chain for tunas and billfishes due to better handling and preservation on-board adopted as the fishes are taken by fish processing units for export is observed. Those of lower quality are transported to local hotels and interior markets through cold chains with carangids, needlefishes and cobia mostly reaching the domestic markets. Also, large pelagics are transported from other states and including Lakshadweep islands to the processing units and interior markets. Most of the catch is beach landed in very fresh condition along Trivandrum coast since it is single day fishery system here. The quality of the fish determines its price at landing centre. Because of the demand in the domestic as well as export markets, the supply chain is well established and local processing units are also involved.

Large pelagic fisheries mainly constitute a targeted fishery along the Kerala coast. The occurrence of juveniles of some species in trawls during the monsoon and post-monsoon months in significant numbers highlight need for so measures to control growth overfishing. Minimum Legal Sizes (MLS) have not been determined for several species and need attention. Another major issue is the poor quality of the fishes landed by multi-day fishing fleets. Modernization to accommodate high standard handling and preservation facilities on-board to maintain the freshness of the catches at *Sashimi* grade is needed. The fishery of large pelagics is mostly seasonal, with most species being migratory nature. Currently, there is scope for value addition and enhanced utilization of fish landed through the creation of fish cold storages and value chains in the market.