# KADALEKUM KANIVUKAL

## (Bounties of the Sea)

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# MARINE FISH PRODUCTION IN KERALA

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Among the maritime states of India, Kerala occupies foremost position in the production of marine fish. The state contributed about 25% of the annual marine fish landings during the period 1992-96 which was more or less invariant in the last four decades. In the early fifties, the production was of the order of 1.74 lakh tonnes. It increased to 3.72 lakh tonnes in eighties and in nineties it reached 5.44 lakh tonnes. The marine fish production of the country as a whole also showed an increasing trend from 0.6 million tonnes in 1951 to 2.24 million tonnes in 1996. The increase in the production was attributed to the introduction of mechanised boats and improved gears. The rate of growth of fish production in Kerala was higher than that of other maritime states.

The fishery development activities gained momentum quite early in Kerala and continues to maintain the lead. Different departments of central and state governments supported the development activities.

## Means of production

Kerala has a coastline of about 590 km which is less than one tenth of the total coastal length of the country. The continental shelf area of the state is 40,000 $km^2$ and only 13,000 $km^2$ falls within 50 m depth zone. The potential yield in this region is estimated at 7.0 lakh tonnes. Fishing is primarily confined to nearshore waters in the depth zone of 50-70 m.

The marine fisheries sector provides employment to 1.5 lakh fishermen directly and to about 6.8 lakh people in the allied activities.

Kerala has about 300 marine fishing villages and 200 major and minor landing centres located in the nine coastal districts. The major fisheries harbours in the state are located at Sakthikulangara (including Neendakara), Cochin, Munambam

and Beypore. Several mini harbours are also coming up in the State. Apart from the fishing harbours, the landings by mechanised boats take place at centres such as Ambalapuzha, Kadappuram, Ponnani and Azhikkal. Traditional and motorized craft land their catches in almost all the landing centres.

It is estimated that about 49,200 craft are operating in Kerala, of which nearly 4200 are mechanised boats. Of the 4200 mechanised boats, nearly 3800 are trawlers and the rest gillnetters, purse seiners and liners. There are 30 purse seiners based at Cochin.

**How do we estimate the marine fish landings?**

India has a coastline of 8041 km with about 1400 landing centres. Fish landing takes place day and night almost throughout the year. The collection of catch details from all the boats from all the centres throughout the year is a difficult task which requires a lot of time, man power and money. A complete enumeration or census is neither feasible nor practicable in this situation. Only a sampling scheme would provide definite basic statistics required for the industry, research and development. The Central Marine Fisheries Research Institute, since its inception in 1947, has been collecting authentic statistics on marine fish production. The sampling scheme used for this purpose is known as Multistage Stratified Random Sampling Design. The importance of this design was well recognized by the FAO and was recommended to the developing nations. According to this design the coastal regions are divided into different geographical zones and from each zone the details of landing are collected through well planned sampling programmes employing qualified personnel.

The data collected every month is transmitted to the headquarters of the Institute at Cochin. The data is processed and analysed using computer facilities available at the Institute. The estimates of marine fish landings and other statistical information are collated and disseminated.

**Major fish groups and their contributions to the total production**

The important groups of fish landed during 1992-1996 were oil sardine, anchovies, perches, sciaenids, mackerel, tuna,

prawns, cephalopods and crabs. A small quantity of lobster was also landed.

Average landing of oil sardine was 30,000 tonnes. In 1991 the catch was 1.06 lakh tonnes. There was a reduction in oil sardine catch in 1994 and increase in 1996 showing high fluctuations.

The most important resource which is exported includes different varieties of prawns such as *Parapenaeopsis stylifera* (Karikkadi), *Penaeus indicus* (Naran) and *Metapenaeopsis dobsoni* (Poovalan). The average annual penaeid prawn landing was 52,000 tonnes.

Average landings of anchovies (Kozhuva) and perches (Kalava) were 39,000 tonnes and 60,000 tonnes respectively.

The average annual landings of mackerel was 83,000 tonnes. In 1996 it was 1,27,000 tonnes.

Crabs and cephalopods (Kanava) were the other important varieties. Cephalopod landing was 34,000 tonnes and landing of crab was 4,000 tonnes.

**Different sectors and their contributions**

The total marine fish landings is contributed by mechanised, motorized and traditional sectors. Their contribution is 47.7%, 41.1% and 5.2% respectively.

**1. Mechanised sector:** The major fishing operation in the mechanised sector is done using bottom trawling. The contribution of bottom trawl to the total production is 46.2%.

The analysis of the trawl catches for the past ten years revealed that there was an increase both in the production, fishing effort and the catch per unit effort (CPUE). Next important gear is purse seine but its number has reduced in recent years. The contribution of gillnet boats declined over the years. The hook & lines is a seasonal gear with marginal contribution to the fish production.

**2. Outboard sector:** The major gear employed in the traditional craft fitted with outboard motors is ring seine.

In the motorized sector the ring seine was put into commercial operation in 1986. As the size of the boat increased, the strength of the crew also increased from 16-18 to 30-32.

The ring seine replaced the boat seine, (thangu vala). The contribution of ring seine to the total production was substantial amounting to 34%.

Mini trawl is an off shoot of motorization. It is a small hand operated net with 8 mm mesh size and operated very close to the shore. Mini trawl is popular in the Alleppey coast.

**3. Traditional sector:** In this sector, gillnet, hook & line, shoreseine etc. are the major gears employed for fishing. Due to motorization their contribution is gradually dwindling.

**Future prospects**

The rapid development of the motorization of country craft amply demonstrated the willingness of the fishermen to accept modern technologies. This also led to the replacement of some gears and increase in fish production.

At present, the areas of fishing operations are confined primarily to the traditional grounds though trawlers are reported to operate beyond 50 m depth. There is not much scope for increasing marine fish production from the conventional grounds. Introduction of vessels of medium range can help fishing in the continental slope. These vessels will have to be equipped for exploitation of identified potential fisheries resources on the outer shelf and upper continental slope. Effort should also be made to exploit the resources in the deeper waters.

Increase in the catch would increase the demand for infrastructure facilities such as ice plants, cold storages and berthing facilities.

CMFRI has developed low cost mariculture technologies for a few marine finfish and shellfish including different species of prawn, crab, mussel, clam and edible oyster.

Production from culture would supplement the production from capture fisheries both for internal market and export. Extension services and other infrastructure should be strengthened to promote mariculture.

Conservation and management of resources is a major concern in fisheries development. It is widely accepted that both trawl and ring seine operations bring juveniles and young

fishes in substantial quantities during certain period of the year. The mesh size used in trawl and ring seine in most cases is lower than the prescribed limit and this is to be discouraged to conserve the resources. Trawling adversely affects the flora and fauna of the bottom sea.

The coastal waters of Kerala is subjected to heavy fishing pressure especially by trawlers and ring seiners. Each sector has to rationally evolve strategies to optimize the number of fishing units in its sphere.

The cod end mesh size of 35 mm has been recommended and accepted for 'Karikkadi' fishery. The observance of this restriction will ensure prevention of landing of juveniles.

The mini trawl operating in the depth zone of 10 m along the shore destroys juveniles of finfishes and 'Karikkadi'. This gear requires restriction.

Considering the importance of marine fisheries as a source of protein, employment and foreign exchange there is urgent need to conserve the resources and sustain production.