



CENTRAL MARINE FISHERIES RESEARCH INSTITUTE

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R & D SERIES FOR MARINE FISHERY RESOURCES MANAGEMENT

3. THE SHRIMP RESOURCES

India is one of the leading countries harvesting and exporting shrimps. Annually about 1.8 lakh tonnes of shrimps are landed from the marine sector. About 55,000 tonnes of shrimps valued at about Rs. 320 crores are exported from this country. The impact of this resource on our national economy needs no emphasis. Hence it should be an earnest endeavour from one and all from the harvester to the end user to see that this valuable resource, a dynamic and renewable one, is not unduly disturbed by the over avaricious exploitation which if not checked, certainly will make it a reality - the story of killing the goose laying golden eggs.

Penaeids and non-penaeids

Among shrimps, penaeid group commands more attention than the non-penaeid group for their local and international demands. In India there are about 60 species in the penaeid group, among which about 15 species are commercially important at present. *Penaeus indicus*, *P. monodon*, *P. semisulcatus*, *Metapenaeus dobsoni*, *M. monoceros* and *Parapenaeopsis stylifera* are the important species heavily exploited in Indian coastal waters.

Resource estimate

It is Kerala which brought India in the map of shrimp exporting countries of the world. Sakthikulangara-Neendakara in Quilon District of Kerala is one of the most important fishing harbours in

India accounting for 19.3% of penaeid shrimp landings (1.15 lakh tonnes) of India. At this centre, the Indo-Norwegian project took up the work of introducing shrimp trawling for increasing shrimp landings from this region. *P. stylifera*, locally known as 'Karikadi' contributes 77% of the shrimp landings of this centre. In the west coast when other centres are relaxing from the fishing activities during monsoon, Sakthikulangara reverberates with hectic fishing activities thronged daily by not less than 800 trawling boats and 100 gill-netters bringing their catches, unloading to the awaiting merchants, later to be loaded in the long convoy of lorries for taking to processing units and markets. Waves of boats arriving from the sea with their catches is a sight to see. Karikadi is landed by trawlers in huge quantities during this season. The other species occurring in the shrimp catches are *P. indicus*, *P. semisulcatus*, *M. monoceros* and *M. affinis*.

Area-wise landings

However, from the average landings during 1975-'84, it is noticed that among the maritime States Maharashtra lands (85,000 t) maximum quantity of shrimps including non-penaeid group. The other States, excluding Kerala (40,000 t), in the order of magnitude are Gujarat (15,700 t), Tamil Nadu (12,300 t), Andhra Pradesh (11,400 t), Karnataka (5,000 t), Goa (3,100 t), West Bengal (2,800 t) and Orissa (1,800 t). Apart from Sakthikulangara in Kerala the other major shrimp landing centres in the west coast are Porbandar, Mangrol, Veraval (all in Gujarat), Sassoon Docks, New Ferry Wharf, Versova, Ratnagiri, Malwan (all in Maharashtra), Panaji (in Goa), Karwar, Tadri, Malpe, Mangalore (in Karnataka) Cannanore, Calicut and Cochin (in Kerala). In the east coast the major shrimp landing centres are Digha (West Bengal), Paradeep (Orissa), Visakhapatnam, Kakinada, Nizampatnam, Krishnapatnam (Andhra Pradesh) Royapuram, Cuddalore, Nagapatnam, Kottapatnam, Mandapam, Rameswaram and Tuticorin (Tamil Nadu). The major contribution to the non-penaeid shrimps comes from Maharashtra (51,000 t) followed by Gujarat (5,000 t), Andhra Pradesh (3,000 t) particularly from Kakinada and West Bengal (2,000 t). The contribution from other maritime States is very much less so far as non-penaeid shrimps are concerned.

Central Marine Fisheries Research Institute, the nodal Institute in the country responsible for providing the required research and developmental support for the judicious exploitation and proper management of the marine living resources of the country, particularly the fishery resources, has been monitoring the exploitation of the marine fishery resources of the country as a prelude for assessing the condition of important fish stocks under existing fishing pressure. Apart from fishery independent factors like salinity, current and temperature that affect fish stocks, fishery dependent

factors such as amount of effort exerted on the stocks and size of the mesh used in the nets, play a vital role on the condition of the stocks exploited. CMFRI has collected extensive data on these aspects and stock assessment studies have been made to understand the impact of trawling on the shrimp fishery of major shrimp landing centres.

Using the data on catch per unit effort (CPUE) and other parameters in the shrimp fishery of important centres along the coasts for the past several years, from the calculation of Maximum Sustainable Yield (MSY) the indications are that increasing the effort beyond the optimum value is not likely to increase the yield.

The stock assessment studies made in the important Karikadi fishery at Neendakara particularly showed that mesh size should be increased to 30 mm and the present effort level should be kept as cut off level so as to reap MSY. This will allow the young ones free to grow to a larger size for later harvests. At the same time growth potential of the natural water system is properly exploited by this approach. There are years when Karikadi are caught in very small sizes detrimental to the fishery. This is equally true in the case of other species like Naran and Poovalan which are exploited in their smaller juvenile sizes from the estuaries. Both harvesters and processors should see that this type of indiscriminate exploitation is avoided in order to maintain the stocks of shrimps at healthy and sustainable level.

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The conclusions/recommendations made in this series are subject to revision with addition of further information on the resource.

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