



**CENTRAL MARINE FISHERIES
RESEARCH INSTITUTE**
ERNAKULAM, COCHIN-682 031, INDIA

R & D SERIES FOR MARINE FISHERY RESOURCES MANAGEMENT

7. THE SILVERBELLY RESOURCES

The silverbellies are a group of fishes, belonging to the family Leiognathidae, that form one of the most important demersal resources of India, contributing significantly to the marine fish production of the country.

Resource estimate

The silverbelly catches form about 5% of the total marine fish produced in the country. The maximum production of silverbellies comes from Tamil Nadu (particularly from the southern region) which contributes 65.2% of silverbellies landed in India, followed by Kerala (13.0%), Andhra Pradesh (9.7%), Karnataka (5.7%) and other maritime States. Though these fishes are caught by different crafts and gears, the maximum yield is contributed by small commercial trawlers from depths upto about 50 m.

The exploited resources of silverbellies have been investigated by the Central Marine Fisheries Research Institute from different centres along Tamil Nadu and Andhra Pradesh Coasts. An estimated annual average of 1,365 tonnes of silverbellies is landed at Kakinada by private trawlers, forming about 8% of the total trawl

catches. Though they occur in considerable quantities round the year, better catches are obtained during January-April. At Madras the private trawlers land an estimated annual average of 606 tonnes of silverbellies, i.e. about 11% of total trawl catches; better returns are generally obtained during the January-March period. In the Mandapam region (Mandapam, Pamban, Rameswaram) an estimated annual average 12,200 tonnes of silverbellies are landed by commercial trawlers, which form over 80% of total trawl catches.

Though 19 species are known to occur in the seas around India, only a few species contribute significantly to the fisheries. At Kakinada and Madras, two species viz. *Leiognathus bindus* and *Secutor insidiator* are the most abundant and they form 82% and 50% of silverbelly catches at these two places respectively. In the Mandapam region, though the above two species occur in considerable quantities, *L. jonesi* is the most dominant species (particularly in the Palk Bay) forming about 43% of silverbelly catch in the region. *L. dussumieri* is the most dominant species in the Gulf of Mannar, though it forms only about 5% of the total silverbelly catch of the entire Mandapam region.

Excepting one species *L. equulus*, which attains a maximum length of about 245 mm, all silverbelly species are small and most of them do not exceed 150 mm in length. For this reason, these are not utilised for consumption in fresh condition. A part of the landings in Mandapam region go to the fishmeal plants and the remaining catches are sun-dried after salt-curing overnight. In other areas also, these fishes are sun-dried and sent to interior markets for human consumption. A part of the sun-dried fish is also utilised for poultry feed.

Stock assessment

Since *L. bindus*, *L. jonesi* and *S. insidiator* are the dominant species at different places, detailed data are collected on these species and stock assessments made.

Leiognathus bindus

At Kakinada the rate of exploitation is estimated as 0.67 and the total annual stock at 928 tonnes against the average annual yield of 622 tonnes. The present fishing pressure has already exceeded the level which gives maximum sustainable yield of this species. Increased yield can, however, be obtained even with the present fishing effort by slightly increasing the cod-end mesh size of trawl nets, thereby catching the fish at a larger size.

At Madras, the rate of exploitation is very low and the fishing pressure has no adverse effect on the stock. There is scope to increase the yield by increasing the effort.

Letognathus jonesi

At Mandapam, the rate of exploitation is 0.68 and total annual stock is 7,634 tonnes with an annual average catch of 5,191 tonnes. The present fishing pressure has not reached a level that gives maximum sustainable yield and hence there is scope to increase yield by increasing effort. The present mesh size of trawl cod-end is the optimum and does not lead to overfishing of the resource.

Secutor insidiator

The rate of exploitation of this species at Kakinada is 0.57 and the total stock is 724 tonnes against the average annual yield on 413 tonnes. In this species, even if the fishing pressure is increased, there is no danger of over-exploitation, because the yield reaches an asymptote with increased effort. The yield, however, can be increased by decreasing the length at first capture, which means reduction of the already small cod-end mesh size. However, as the adult fish is itself small, such an increased production of still smaller fish will be of little consequence to the industry. Further, the yield curves do not show any significant fall with increase in age at first capture also. Hence it will be better (even though a little reduction in yield is possible) to increase the cod-end mesh size slightly to enable harvesting only the utilisable fish and also to avoid the possibility of overfishing in future.

Management of the resource

In the Mandapam region, the present cod-end mesh size is optimum to get the maximum yield of *L. jonesi* and hence there is no need to increase or decrease the size at capture. There is, however, scope to increase the effort to get the maximum yield of *L. jonesi*. Since this species is the mainstay of the local silverbelly fishery, increasing the effort (particularly in the Palk Bay) will result in larger catches. Similarly, in the case of *L. bindus* at Madras, there is scope to increase the effort to get increased yield. In Kakinada region, however, there is need to increase the cod end mesh size of trawl nets to get the sustained yield of silverbellies, particularly of *L. bindus* and *S. insidiator*.

Prepared by Dr. V. Sriramachandra Murty and Dr. N. Gopinatha Menon, edited by K. Rengarajan and published by Dr. P. S. B. R. James, Director, C.M.F.R.I., Cochin-682 031.

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

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