

D-80: Bio-socio-economic assessment of the ring net fishery in the south-west coast of Sri Lanka

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Ring net fishery is an active fishing gear used in the coastal waters of Sri Lanka to encircle the small pelagics particularly the small tunas. This fishery is developing rapidly in the south and the south-west coasts. An assessment of this fishery was carried out under the integrated bio-socio-economic study of the small pelagic fisheries in this area during the period Oct. 1991 to Feb. 1993.

Bio-economic data was collected from the major fish landing site at Dodanduwa, by making fortnightly visits. The socio-economic data was collected through the frame survey followed by a systematic survey of the randomly selected households representing all craft gear combinations. The analysis for bio-economic data was carried out by using the length based ELEFAN and LFSA computer packages.

The ring net fishery is carried out by the motorized wooden outrigger vallams of 8 m length. The lengths of the ring nets vary from 200-250 m with a mesh size range 38-60 mm. The average monthly fishing effort was 380 operations. The total annual production from this fishery in the study area was 145t. The average catch per fishing operation during this period was 30 kg.

Auxis thazard contributed to more than 75% of the catches. Growth parameters estimated for *A. thazard* was $K=1.4$ (year⁻¹), $L_{\infty} = 45$ cm (total length), $M = 1.98$ and $E = 0.567$. Bio-economic analysis showed that a maximum sustainable yield of 8930t and a maximum economic yield of Rs.293 million could be obtained from this fishery. A 30% increase in mesh size would allow an increase in fishing effort by 80% which would result in an increase in the economic yield to Rs. 326 million.

The average monthly income and expenditure for this fishery was Rs.19,955 and Rs.1,251 respectively. The average monthly income for a owner, skipper

and a crew member was Rs.9,352, Rs.2,330 and Rs.1,553 respectively. A total of 109 households were sampled. 83% of these were fishing and 17% non fishing households. 70% of the fishing households did not own any craft or gear and 90% of the owners got their credit facilities through the government subsidy and loan schemes.