Strategies and indicators of fisheries management – A case study of demersal fisheries in the west coast of Sri Lanka

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Sustainable fisheries development cannot be separated from policies of resource management and equitable allocation and thereby socio-economic upliftment of fishing community. It should strike a balance between development and management when allocating access to resources among competing users. The present study was focused on the multispecies and multigear demersal fishery in the west coast of Sri Lanka with the objective of understanding an appropriate management strategy to optimize the bio-socio-economic benefits of this coastal fishery.

The rapid development of the demersal fishery basically through efficient fisheries overcoming the traditional handline fishery in recent times has already indicated the warning signs of overfishing. The mean catch rates of the traditional fishery have remarkably declined over the past decade. The contributions of squid and cuttlefish to the total demersal catch have increased while that of sharks and skates have been on a declining trend. The number of major fish families contributing to the total demersal catch has fluctuated substantially with the replacement of Carangids with Lethrinids as the dominant finfish group alarming the possible signs of ecological-overfishing.

The harvest of multispecies demersal fishery resources has already exceeded the Maximum Sustainable Yield (MSY) in 1996 and 1997 and also the recommended optimum effort level (f_{MSY}) in 1997. Though the existing fishing effort is slightly lower than the optimum, the estimated MSY is yet greater than the present yield. The estimated exploitation levels of many vital fish species on economic grounds with respect to the major gear types have already exceeded the optimum exploitation level of 0.5 indicating that these resources are suffering either from recruitment or growth over fishing.

In the context of Maximum Economic Yield (MEY) in the multispecies/multigear scenario, the demersal fishery resources in the study area have been overexploited well before the fishing effort reaches the f_{MSY}. The economics of the exploitation of key fish species have also exceeded the MEY by all gear types. The relatively low fixed cost and mainly the high demand enable generation of positive net profit form all fisheries but the economic performance among technologies was found to be highly variable.

The majority of the fisher-folk on demersal fishery in the study area depends to a great extend upon the economic returns from the fishing activities for their livelihood. Though most of them were poorly educated they were found to be performing effectively in fisheries related activities. The participation of housewives in the income generating activities was low. The majority of their children were also found to engage in fisheries related activities. Owing to their poor language skills most of them found it very difficult to find out an employment other than fishing. In addition, it was also noted that for socio-cultural affairs of the society they spend a substantial sum of money. The limited access to take up fishing would ensure the long-term sustainability of the fishery through rehabilitation of the resource base, making the fishing economically rewarding in many forms including viable occupation.