

## BIOLOGY OF HARVESTING FISHERY RESOURCES IN SRI LANKA AT THE MAXIMUM SUSTAINABLE LEVEL

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### ABSTRACT

*The main objective of fisheries management in developing countries is to obtain the maximum social yield (MScY). To estimate MScY, the maximum sustainable yield (MSY) has to be determined. Many mathematical models have been developed to estimate the MSY of fisheries. However in Sri Lanka, due to stochastic changes in physical, chemical and biological factors of the environment, population parameters required for these yield models vary in an unpredictable manner affecting the estimated levels of MSY. The diversity of fishing gear and multi-species nature also complicate the estimation of MSY in Sri Lankan fisheries. The problem of use of a variety of gear can be overcome by estimating the MSY for each type of gear separately. Due to high species diversity, harvesting one species at the maximum sustainable level, however, may result in under-exploitation and/or over-exploitation of many other species. Steps must be taken to prevent over-exploitation of not only commercially important species but also of ecologically significant species.*

### INTRODUCTION

Much attention is paid today in developing countries to the management of fisheries to obtain maximum benefits from them. Total yield from these resources could be increased by increasing fishing effort but such an increase may lead to over-exploitation resulting in decreased future yields. Therefore, the main objectives of management of fisheries are to obtain the maximum benefits and to maintain them at the highest possible level.

When yield is considered, the objective of management is to obtain the maximum sustainable yield (MSY), which is the catch that can be obtained on a sustained basis. When economic benefits are considered, the objective of management is to obtain the maximum economic yield (MEY), which is the maximum sustained surplus of revenue over cost. This is a modification of MSY taking into account the economic value of the catch. When socio-economics are considered, the objective of management is to obtain the maximum social yield (MScY), which is the level of catch that provides the best possible solutions to social problems such as unemployment, poverty and uneven distribution of income (Panayotou 1982). The concept of MScY is specially applicable to developing countries where socio-economic considerations often override biological and economic concerns (Panayotou 1982). However, MScY cannot be estimated independently