

## ABSTRACT

This study is aimed to provide an understanding of the spiny lobster fishery of the south coast of Sri Lanka. Most of the spiny lobster fisheries of the world are subjected to heavy exploitation due to the increasing demand. The use of hazardous fishing methods however is known to cause serious problems in the developing countries, including Sri Lanka where considerable percentage of berried females and under sized lobsters are caught each year.

The fishery for spiny lobster in the coastal waters of the south coast is carried out by non-mechanized out-rigger small canoes with trammel nets, bottom set gill nets and lobster rings. Around 200mt of lobsters is produced each year in the study area by a fishing fleet of 315 crafts. Around 80% of the lobster production consisted of *Panulirus homarus*.

Lobsters were found to occur all year round, but the fishery is restricted to the non-monsoon period (August-March) due to operational difficulties.

The analysis of catch and effort statistics indicated a maximum sustainable yield of 190-200 mt and an optimal daily effort of 300 crafts. The length-based analysis indicated that the resource is over exploited and a reduction in effort by about 20.5% is necessary to put the fishery back to an equilibrium level.

Experimental fishing tests revealed that the lobster rings cause the least damage to the population, while the trammel net was the most harmful by including 77% of sub-legal lobsters in catches. This study indicated the possibility of having two spawning and recruitment pulses separated by an interval of 4-5 months. Fecundity estimates ranged between 116,000 - 601,000. Nearly two-third of the total egg production was contributed by lobsters of 60-79mm carapace length range. The fishery is reproductively supported by 3-4 year lobsters. This resource in the study area appears to be overfished with respect to its reproductive potential.

The use of trammel nets and free access to the fishery are the two main points which should be carefully controlled. The fishery should be managed by using less harmful fishing gear (eg. lobster rings) and by introducing a proper licensing system to control fishermen entering into the fishery.