CRAB RESOURCE OF SRI LANKA

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Introduction

Sri Lanka being an island, has a coastal line of 1760 km dotted with estuaries and lagoons. The coastal areas of Sri Lanka are rich in fish, crustacean and molluscan fauna. Crabs, lobsters and prawns are popular and economically important crustaceans which contribute to the wealth of the sea. A great proportion of economically important crustaceans are marine or partially marine depending on the sea for the existence of their young.

Along with the rapid expansion of the prawn industry in the west coast over the last decade crabs have generated a remarkable position as a foreign exchange earner despite the ever existing high demand for crabs in the local market. Crabs in fact, has a great market acceptancy in the west as well as in the east. It is now exported to many countries, Japan, Singapore, Malaysia, South Korea, Maldives, United Kingdom and Australia although not in bulk.

The purpose of this article is to highlight some important aspects ot the crab resource in Sri Lanka, particularly in the Negombo lagoon which is the most popular place for crabs in the country. Unfortunately there had been very few studies in the past on crabs of Sri Lanka (almost none besides observations of some authors and few unpublished reports) and the only comprehensive study made so far on this resource was the study conducted by the present author on the biology and economics of the mud crab, *Scylla serrata* in the Negombo lagoon during 1985 - 1989 (this study was financed by NARESA). This study has revealed a vast amount of information on the crab resource covering biological aspects; such as taxonomy, growth, food, and reproduction etc. and economic aspects; such as population dynamics, fishery, and status of the resource etc.

Crabs are a diverse group of crustaceans inhabiting both marine and fresh water environments. Predominantly they are marine or brackish water and often both. There are 54 species of crabs found in brackish water and marine habitats of Sri Lanka. They belong to families Calappidae, Leucosidae, Portunidae and Grapsidae. Portunid crabs are the most important group of crabs as they comprise the edible ones which are promising candidates for aquaculture.

Crabs of Economic Importance

In Sri Lanka there are three species of edible crabs popular among all communities in the country. They are in the order of preference *Scylla serrata* (Forskal), *Portunus pelagicus* and *Portunus sanguinolentus*. The most important of all crabs is *Scylla serrata* and to some extent Portunus pelagicus. They are marine and brackish depending on the sea for part of their life cycle and lagoon for the rest.

Scylla serrata is commonly known as the "Kalapu kakuluwa" (mangrove crab) or 'Ala man kakuluwa' and is of great demand, in local and export markets. It is a large crab which can grow up to about 25 cm in carapace length and 1.5 kg in weight.

Portunus pelagicus is mostly found in the sea and comes to the market as sea catches, but is also caught in the lagoon. *Portunus pelagicus* also grows to a fairly large size of about 10 - 15 cm in carapace length, and attains a weight of about 500 - 750 g.

Crabs Habitat

The crabs are generally distributed in the sea and lagoons/estuaries of Sri Lanka. Females spawn in the offshore area and the larval stages live and grow in the sea. They enter the lagoon at a much larger larval stage known as megalopa which is a benthic form about 4.5 mm long. The megalopa usually inhabits the shallow area of the lagoon and feeds on zooplankton and detritus. They are also cannibalistic preying on newly molted megalopa larvae. The megalopa molts finally into a small crab.

The small crabs measure about 2 - 7 cm in carapace length and inhabit sea grass beds and mangrove roots. They usually hide in sheltered areas in intertidal and subtidal paths of the lagoon.

Sub adult of *Scylla serrata* (7-13 cm carapace width) move more freely and inhabit small creeks and open areas of the lagoon. They are predominantly benthic but they also move up and down in deeper areas and even in intertidal

areas. The bigger crabs (above 13 cm) occupy deeper subtidal areas and move into intertidal areas for feeding but not to the extent that sub adults moves. Large crabs occupy a prominent position in the macro fauna of the deeper benthic zone.

Portunus pelagicus is in the sea for most part of the year, and comes to the lagoon during some months of the year. They are generally found in areas of high salinity (near mouth of the lagoon). Not much research has been done on this species in Sri Lanka.

Distribution

Scylla serrata is found in almost all the lagoons/estuaries in Sri Lanka. They are abundant in lagoons and estuaries of the west, north, and east coasts. The presence of *Scylla serrata* in the lagoons and estuaries of the south coast has also been reported. Crabs are mostly fished in Jaffna, Kokkilai, Nayaru, Batticaloa, trincomalee, Puttalam, Chilaw, and Negombo lagoons.

Methods of Exploitation

Baited traps are the most popularly used gear for capturing crabs in most of the lagoons in the country. This is a low cost device, designed specially for fishing crabs and is the only gear that is specifically operated for crabbing.

The fishermen of Negombo, Chilaw, Puttalam, Batticaloa, Jaffna, Nayaru and Kokilai use baited traps as the main gear against crabs but those in Trincomalee lagoon use only gill nets. In the other lagoons mentioned too the crabs are caught by Drift gill nets but as by-catches of prawn landings. In Negombo, the fishermen also operate brush-piles which too land a certain proportion of crabs along with prawns.

Seasons of Fishing

Crabs are caught throughout the year in most of the lagoons. In the lagoons of the west coast of Sri Lanka November/December is the peak period. Catches are usually low during June, July and August. The above seasonality is not known for other lagoons in the country.

Production of Crabs

Average production of crabs in Sri Lanka per annum is around 1200 metric tons. This includes both *N. pelagicus* and *Scylla serrata*. Production of crabs in the Negombo lagoon during 1985 - 1989 varied between 35 - 45 metric tons per annum. The amount exported from Sri Lanka per annum varied from 939 metric tons in 1985 to 375 metric tons in 1989. The average foreign exchange earning during this period was approximately Rs. 34.2 million (range Rs. 26.9 - 37.7 million).

Present Status of the Fishery

The crab fishery is showing a fast decline in the Negombo lagoon as a result of heavy exploitation in the absence of any form of management. The high price offered for the commodity has attracted fishermen and they are all out to land as much crabs as possible irrespective of the size, age or sex. The mesh size of the nets used are small that they catch crabs of very small size threatening the balance of the resource. The current situation is that about 80% of the total landings comprise of immature crabs, which are yet to contribute to their own generation. Selling immature crabs for local consumers is now a common feature in the Negombo market. The catch per unit effort is showing a declining trend from 1985 onwards. This indeed is a result of over fishing which is threatening the existence of the resource.

Future Perspectives

Crab resource is an asset to the country which can be brought to the status of a major foreign exchange earner by efficient management. As in Australia it is essential to impose legal barriers prohibiting the use of nets with small mesh size that can capture immature crabs. More often legal barriers do not serve any purpose if the people concerned are not properly sensitised on the issue. If crab fishery fails it is the fishermen who will be immediately and directly affected. Therefore, education through extension services and mass media can do a great service to safeguard this invaluable resource. Crab culture is another area which warrant feasibility studies.