

CHAPTER 6

SOCIO-ECONOMIC STATUS OF COASTAL COMMUNITIES IN THE STUDY AREA

6.1 INTRODUCTION

Gulf of Mannar is known to have a rich variety of marine lives. However, the illiterate fishermen have been doing extensive damage to the coral reef during the past and to a certain extent even now, without realizing the ecological implications (MBAI 1985). They have been removing corals to meet the demands for lime in various industries such as cement, sugar and construction (Mahadevan and Nayar 1972; Venkataramanujam *et al* 1981; Kumaraguru 1989 and 1991; Krishnamoorthy 1969; Pillai 1975; Ramanujam and Mukesh 1998). The chapter deals with the socio economic conditions of the coastal communities in the study region.

The residents of coastal villages in the study area are engaged in fishing as a primary occupation, as the agricultural activities are unproductive. Most of them are using traditional method of fishing. The literacy rate is about 31%, which is far below the State average of 64%. About 54% fishermen do not have a dwelling of their own and live in huts along the sandy beaches, 25% have semi permanent houses and only 21% have concrete or tiled roof houses. About 56% of the fishermen still depend on traditional catamarans for fishing activities. The economic condition of these fishermen is below the poverty line. Inadequate supply of water, lack of proper medical and

health care facilities, dissatisfactory power supply, etc, keep the fishermen in a permanently disadvantageous position both socially and economically. Their income is low, which is attributed to low productivity, improper marketing system and lack of additional vocations. Therefore, they have a low standard of living. A majority of fishermen is in debt for greater part of their lives.

6.2 ECONOMIC ACTIVITIES IN THE STUDY AREA

Exploitation of fishes and other marine living resources in the near-shore as well as offshore regions has been the sole occupation of several thousands of fishermen families living along the coast. They have been in close proximity with the sea, so that, their life-style, culture, community and social life are centered around the sea. During the time of extensive ground truth, it has been identified that some of the activities of the fishermen residing in the villages adjoining the study area are as follows:

1. Fishing
2. Sea-weed collection
3. Chanks collection
4. Coral Mining
5. Fire wood collection
6. Agriculture

Fishing

Fishing is the primary economic activity of the people of the study area. There are about 47 fishing villages along the coast, of which 38 are in Ramanathapuram district and 9 in Tuticorin district bordering the study area. The fishermen from these villages depend solely on fishing for their livelihood. There are about 50, 000 fishermen living in these villages of which more than

12, 000 are active fishermen. The village-wise population of fishermen has been shown in Table 5.5. The fishermen employ traditional crafts such as catamarans, masula boats, vatti, vallam fixed to motorized and non-motorized vessels. Nearly 500 mechanized boats are operated for fishing in Mandapam, Valinokkam and Pudumadam areas.

The various fishing gears used by the fishermen for fish capture are trawl nets, gill nets, shore seines, drift nets, olaivalai, karavalai, kalamakatti valai, long-lines, traps and others. Of these, drift nets, long-lines, bottom-set gill nets, olavalai, karavalai and kalamkatti valai are mainly operated in and around the islands in the study area. During recent years many mechanized launches with trawl net and gill net are engaged for fishing. This method is very destructive. Pair trawling in this region causes severe damage to coral reefs and increase the turbidity of seawater. These are very fine mesh size nets for prawn fishing. Due to this type of gears, brooders are caught and small sized fishes and other marine organisms are obtained in huge quantities resulting in depletion of many marine fishery resources. At times, they also destroy the breeding grounds, and eggs of marine organisms in the coral reef areas.

The marine fish catch from study area during 1992-1996 ranged from 0.55 to 1.02 lakh tons, with an average of 78,511 tons per year. The pelagic fishes formed 54.38%, demersal fishes 34.85%, crustations 5.69% and mollusk 5.08%. Nearly 20% of total fish production of Tamilnadu is being caught from the study area. The estimated maximum sustainable yield for Gulf of Mannar is 44, 600 tons of pelagic fishes and 35, 200 tons of demersal fishes (Dorairaj1998). Fishing for holothurians has gained importance during the last ten years. The two commercially important species that are collected by fishermen are *Holothuria scabra* and *Holothuria spinifera*, which are processed and exported to Singapore and Hong Kong. The fishermen collect the holothurians by diving in shallow waters of 2 to 10 m depth. Fishermen from

Chinnapalam, Vadalai, Mandapam, Perispattinam, Keelakkarai and Tuticorin are engaged in this fishing. Annually 60 tons of holothurians (valued at Rs.90 lakhs) are collected from Ramanathapuram district, of which 50% are from the study area.

Seaweed collection

Seaweeds form one of the most important marine living resources. They are primitive plants without any true root, stem and leaves. They contain carbohydrates, vitamins, iodine, bromine, minerals, trace elements etc (Silas *et al* 1986; Kaliaperumal 1993; Kaliaperumal *et al* 1995). These are the only source for phytochemicals such as agar, carrageenan and algin. The agar is extracted from red algae. Several protein rich seaweeds are used for human consumption in forms of soup, salad and vegetable food products such as jell, jam, chocolate, pickle etc. It is also utilized in different parts of the world as feed for poultry and cattle, and as fertilizer for many land crops.

In the study area, there is a good growth of seaweeds particularly around the 21 islands. The Central Salt and Marine Chemicals Research Institute and Department of Fisheries, Government of Tamilnadu have estimated the standing crop of sea-weeds from the 21 islands to be 11,653 tons (wet weight). More than 25 actively functioning agar and algin industries are situated at different places in the maritime States of Tamilnadu, Kerala, Karnataka and Gujarat. In the study area nearly 5000-7000 tons (dry weight) of seaweeds are harvested annually, of which sargassam spp forms the bulk. More than 1000 fishermen and 450 fisherwomen are engaged in seaweed collection, which bring in a daily income of Rs.20 to 30 per fishermen. The fishermen and women stay in the island and collect seaweeds around the islands. Vembar group of islands, Keelakkarai group of islands and Mandapam group of islands are some of the islands where large quantities of seaweeds are harvested. Vedali

and Keelakkarai are important seaweed collection centers in India (Kumaraguru 2000). Over exploitation of seaweeds indirectly affect the coral reef ecosystem, as a result of increasing siltation in seawater.

Chank collection

Chank collection is one of the important occupations of the fishermen living in the coast of Gulf of Mannar. Nearly 770 divers are engaged in this occupation. They use vallam for chank collection; five to ten chank divers are engaged in each vallam and they collect chanks at a depth of 10 to 20 m. They collect different types of chanks such as Kali chank, Oothu chank, Yaanai mulli, Ayarm mulli etc., during the months between November and May. The chanks obtained from Tuticorin coast are in demand in West Bengal for making ornaments and manufacturing artifacts. The average collection of chanks during the period from 1993 to 1998 was about 4,80,000 chanks per year, worth of about Rs.48 lakhs (Neelakantan 1998).

Coral mining

Corals play a complex and a significant role on the marine ecosystem. These areas are said to be one of the most productive areas in the sea. The islands in Gulf of Mannar are surrounded by stony corals and soft corals. Various authors studied coral exploitation in the study area of Gulf of Mannar (Pillai 1973 and 1975; Mahadevan and Nayar 1972; Salam 1975; UNEP / IUCN 1988; Venketaramanujam *et al* 1981; Silas *et al* 1985). Coral reefs are used on a large scale as the raw material by the lime industries. Extensive areas were leased by the government for coral mining and large scale quarrying was undertaken upto 1979 after which the leasing was stopped. However, illegal mining of the corals is still taking place. During recent time coral mining is very active in Tuticorin group of islands for building, industrial and chemical purposes. The

- rapid development of lime based industries in and around Tuticorin has accelerated the coral reef mining. About 250 skilled divers and about 50 boats are engaged in the collection of coral reefs. During recent days, the use of explosives for coral collection has caused very serious problems like coastal and island erosion, sedimentation, coral reef degradation and decrease in marine faunal population, in coastal and marine ecosystems. Pillai (1973) estimated the annual exploitation of coral reefs from about 90,000 m² area in Gulf of Mannar. Venketaramanujam *et al* (1981) showed that annually about 15,000 tons of corals are mined from Tuticorin group of islands. Mahadevan and Nayar (1972) estimated that 25,000 tons of corals are exploited annually in Gulf of Mannar. The net result is that the growth rate of corals due to mining and present day exploitation is above 1m and this has been confirmed with the bathymetry map Tuticorin Group of islands.

Fire wood collection

Fire wood collection is not a major occupation. During seaweed collection the fisherwomen collect driftwood and dry twinges from Vembar, Keelakkarai and Mandapam groups of island for firewoods. During recent days fishermen are cutting down the trees for firewood, leading to island erosion.

Agriculture

Agriculture is another type of occupation adopted by the people living behind the shore in the study area. Coconut plantation and food crops are the important agricultural crops and plantation in the study area. The areas west of Tuticorin and Taruvaikulam, on the banks of Vaippar River, north of Saialkudi, east bank of Gundar River, banks of Palar River, north of Keelakkarai, Periyapattinam and north of Rameswaram Island are extensively utilized for cultivation, which is mostly a single crop. Paddy, Ulundu, Cotton

and Malli are the important crops in this area. In some areas, particularly north of Mandapam and Rameswaram Island, floriculture is practiced. The areas like Vembar, Keelakkarai, Periyapattinam, Mandapam and south of Rameswaram Island are utilized for coconut plantation and Palmyra plantation.

6.3 CONCLUSION

Socio economic studies revealed that various occupations of coastal people in the study area are mainly depending on the ocean resources. These occupations include fisheries, seaweed collection, fuel wood collection, coral mining and agriculture. All these activities along the coast of the study area are affecting the coastal ecosystems particularly coral reef ecosystem. Hence, socio economic conditions also play a major role in the degradation of the coastal ecosystems.