CHAPTER III

ECONOMIC PROFILE OF THE STUDY AREA

The growth of forests has forward linkages with agriculture, industries and other tertiary sectors. It also influences directly and indirectly the wellbeing of the people. Therefore, an analysis of the growth of forests and its impact has to be made in the background of the entire environment of ANI. In other words, the impact analysis presupposes a knowledge of all related aspects of ANI. This chapter purports to provide such a knowledge through an analysis of the profile of the study area. More specifically, attention is paid to those aspects which are very germane to the objectives of the study and provides a bird's eye view of the location, area, climate, topography, geology, soil, water, population, ecology, economy and its various sectors including infrastructural facilities of the islands.

3.1 GENERAL PROFILE

3.1.1 Location and Area Description

ANI are a group of 572 islands (306 named and 266 unnamed), islets, reefs and isolated rocks in the Bay of Bengal extending from 6°N to 14°N latitude and 92°E to 94°E longitude with a total geographical area of 8,293 sq.kms. Out of the 306 named islands, 38 are inhabited and 268 are not inhabited. The islands are not only separated by a vast stretch of sea from the mainland but also
from each other. The distance between the northern and southern tips is about 700 kms. For the purpose of administration, the islands are divided into two districts, namely, Andaman District and Nicobar District. There are 493 villages and one town with a total number of 15,775 households. The location of ANI and the administrative divisions are shown in map 1.

The Andaman group is divided into North Andaman, Middle Andaman, South Andaman and Little Andaman. The first three form a closely linked chain from which Little Andaman is separated by the Duncan Passage. The Nicobar group consists of Car nicobar, the Nancowrie group, Little Nicobar and Great Nicobar, each of which is far away from the other.

The northern-most island of ANI is 901 kms. away from the mouth of the Hooghly river but only 190 kms. from Burma. Likewise, the southern-most point of Great Nicobar islands is only 150 kms. from Indonesia. But these islands are located at a distance of 1,255 kms. from Calcutta and 1,190 kms. from Madras (Dikshit 1983).

3.1.2 Climate

The climate of these islands is typically equatorial. The islands are exposed to both the South-West and North-East monsoons from May to December. The average rainfall during 1949-1986 was 3,086.8 mm. and the average number of rainy days during 1961-1986 was 143. The rainfall data show uneven distribution and variation of rains
MAP: 3.1
THE LOCATION AND ADMINISTRATIVE DIVISIONS OF ANDHAN AND NICOBAR ISLANDS
in different months. Variation in temperature is slight, ranging between $30^\circ C$ and $22^\circ C$ and the average relative humidity is 79 percent. The temperature between May-December of every year is moderated by rains and there is no moisture stress during this period (Singh et al. 1988:9).

3.1.3 Topography

Most of the islands except some smaller ones in the Nicobar group have an undulating terrain with ridges running north-south and spur hills running east-west. In between the ridges, deep inlets and creeks are formed by the submerged valleys. The average width of the islands is only about 20 kms. The mineral resources are meagre.

3.1.4 Geology and Soil

Geologically, the ANI forms one of the most interesting regions in India. They constitute an island arc that can be separated into two concentric arcs, an outer western sedimentary arc comprising major islands of the Andaman and Nicobar extending to the south-east forming the Indonesian Orogenic belt, and the inner (eastern) Volcanic arc showing up above the sea level as the conical volcanoes of Narcondum and Barren islands. These two are the only true volcanoes known in India. The only mud volcano associated with oil and gas known in India is from the Baratang island. According to Eremenko
and Sastri (1977:35), a third island arc to the west of the ANI is in the process of emerging.

The soil shows considerable variability from heavy clay to clay loam, gravelly loam, sandy loam and sand. The uplands under the forest cover are intensely leached, but run-off is very high where the forest cover has been removed. Such soils have been severely eroded and hence support scant grassy vegetation and/or shrubs. The soil everywhere lacks humus due to continuous leaching by heavy rainfall. Due to poor water retention in the soil and slope characteristics, the availability of fresh water is limited in all these islands (Singh et al. 1988:15). But the daily water requirement is estimated to be 3,50,000 kilo litres in 2000 AD due to increased demand.

3.1.5 Population

The people of these islands can be divided into natives and settlers. The natives are aboriginal tribes. The settlers comprise both the old and the new settlers. The old settlers also called locals came to Andaman prior to independence (Dass and Rabindranath Rath 1989:126) while the new settlers came to these islands after 1947.

There has been a steady increase in the total population of the Union Territory since 1901 (1951, however, witnessed a decline) from 24,649 (1901) to 1,88,254 (1981), an increase of 7.6 times. According to 1991 census, the population of ANI is about 2,77,989 denoting an increase of 11.3 times. During these eighty years, the
population had increased by 763.7 per cent, giving an annual growth rate of 8.2 per cent. The growth of population was marginal till 1951, after which there has been enormous growth in this Territory. In 1961, the percentage increase in population at the national level was 21.5 per cent, however, the Territory's increase was 105.19 per cent. Even the annual growth rate of 8.2 per cent is much higher than the national growth rate of 2.5 per cent per annum. Nevertheless, the population of the original inhabitants belonging to the four tribes—Jarawa, Andamanese, Onge and Sentinelese has shown a declining trend. According to the 1981 census, their total population was just a little over 600.

The enormous growth of population in the islands has been caused by the heavy influx of people from the mainland for employment purpose. Another feature revealed by the data is that more than 80 per cent of the total population of the Territory live in Andaman, while the remaining 20 per cent live in Nicobar. The density of population in the Union Territory is one of the lowest in India. It ranged from three persons per sq.km. in 1901 to 23 persons per sq.km. in 1981. The density of population in 1991 was 34 persons per sq.km. (Anon 1991). This low density is due to the large forest cover in the Territory. The total population of the islands is only 0.028 per cent of the population of India and it ranks 29th in population at the all India level.
3.1.6 Education

The ANI has made considerable progress in the sphere of education. Thanks to the concerted efforts of the Government, the number of schools in the Territory has increased from 165 in 1971 to 310 in 1981, denoting almost two-fold increase. The Government also provides various facilities and concessions like free text-books, uniforms, mid-day meals, travel concessions, and hostel stipends with a view to encourage students to enrol themselves. There is also a college, a polytechnic and a teacher training institute in the islands. The Government is also implementing a number of programmes to achieve 100 per cent literacy. Thanks to these efforts, the literacy rate of the islands has improved from 34 per cent in 1961 to 52 per cent in 1981 and 74 per cent in 1991, which is higher than the national literacy rate (36% in 1981; 52% in 1991).

3.1.7 Health

The Administration has created the infrastructure for providing health care services to the people of the Territory. For instance, the number of medical institutions (PHC, Sub-Centres and Hospitals) has increased two-fold from 51 in 1967 to 91 in 1987. Supplementary nutrition facilities have been provided to the children in the age group of 0-6 years and lactating and pregnant mothers belonging to the weaker sections of the society including the tribals. The regional medical research centre of the Indian Council of Medical
Research (ICMR) at the capital has proposed to set up peripheral centres in other islands also (Khandekar et al. 1987:24).

3.1.8 Ecology

The ANI is a unique tropical ecosystem, with wide range of genetic diversity and wild germ plasm. The rich mangrove ecosystem, the extremely productive coral reefs and the hitherto inaccessible nature of the region, have allowed the development and preservation of this unique eco-system (Anon 1986:5). The tropical rain forests of ANI are very rich in different species of flora and fauna, but there is total interdependence among plants and animals. Thus, any disturbance in these links in the biological system would disturb the environmental system as a whole. It is essential to keep the natural ecosystem in these islands intact to the extent possible and to take up developmental activities and cultivation in areas which have been barren lands.

3.2 SECTORAL PROFILE

3.2.1 Agriculture

Agriculture in these islands is practised after complete or partial deforestation. The area under cultivation in 1981 was 16,544 ha., which accounts for 2 per cent of the total geographical area. This excludes 18,000-20,000 ha. under plantations in the tribal areas (Saldanha 1989:20). The present land use (1988-89) in the ANI shows
that the net sown area is only 17,100 ha. and another 12,000 ha. are barren or cultivable waste. The fallow land and permanent pastures occupy 8,300 ha. There are 8,094 agricultural holdings in the Andamans. On an average, each household has two hectares of paddy land and two hectares of hilly land.

The cropping pattern of the islands is dominated by rice. Nearly 12,000 ha. of flat land is used to raise one or two crops a year. The revenue area under coconut is shown as 21,000 ha. (including tribal islands). Though the yield of coconut is not satisfactory, it can be comparable to the all-India average. The other major crops like banana, arecanut, pulses and vegetables occupy about 1,800 ha. (Singh and Gajja 1987:24). Tomatoes are available in particular seasons. Potato has not been a success. Mango, citrus, papaya and sapota have been tried with limited success. Cinnamon, clove, nutmeg and pepper are also grown. Oil seed crops and pulses planted in rotation with rice have been remunerative. Areca is popular. The agricultural sector contributed about 25 per cent to the State Domestic Product (SDP) at 1987-88 current prices and generated 20 per cent of employment (1980-81).

3.2.2 Animal Husbandry

Livestock was a rare phenomenon in the islands prior to settlement (Nair 1986:50). Though the Government's policy of increasing livestock has not yielded the expected success, the
buffaloes introduced along with settlers from Punjab in Great Nicobar have done well. Even though there is a central dairy unit, its output is totally inadequate to meet the demand at Port Blair.

Since 1961, there has been a four-fold increase in cattle and goat population. Forests provide grazing land for the livestock although no grazing fee is levied. There has been no systematic attempt to introduce fodder crops partly because cattle owners traditionally do not stall feed cattle. The goat population is increasing in an unchecked manner, though the continued browsing of goat will totally destroy the regeneration potential of forests. Animal Husbandry contributed about eight per cent to SDP at 1987-88 current prices.

3.2.3 Wildlife

Evolutionary and bio-geographic factors have brought about a unique but highly vulnerable fauna in the oceanic islands. So far about 55 species of mammals and 255 species of birds have been recorded in these islands, out of about 350 species of mammals and 1,200 species of birds found in India. Some of the endemic, endangered species of mammals include the Nicobar crab-eating macaque, Malaya tree shrew (local species), the Palm civet, the Andaman wild pig, a few species of rodents, and bats. The avifauna is spectacular, with a number of endemic endangered species such as the Andaman teal, Narcondum hornbill, Nicobar megapode and Nicobar pigeon. There is a large influx of migrant coastal and shallow-water
sea birds and the list of endemic sub-species and races is quite long. Dugong, though not endemic, occurs in viable numbers only in ANI within the Indian territory. There are many newly introduced and wild mammals namely, Spotted deer, Barking deer, Feral goats, and Feral elephants. Estuarine crocodile, Monitor lizards and four species of marine turtles namely, Leatherback turtle, Green turtle and Hawksbill turtle find ideal nesting and breeding habitats in these islands.

3.2.4 Fishery

The six lakh square kilometre exclusive economic zone of these islands is available for fishery and the coastal areas for aquaculture (Singh and Gajja 1987:14). The annual catch ranges from 50,000 tonnes to 4,74,000 tonnes. The Government during colonisation and rehabilitation programme settled 126 families for the development of fishing industry in these islands. In 1980-81, 1,463 fishermen were reported to be engaged in fishing and fishery equipment worth Rs.1,24,000 was reportedly distributed. Beyond partly meeting the local demand by fishing in inland creeks and coastal waters, fishery has not developed as a viable industry. The need for harbours and processing plants has been recognised. Besides, shell fish forms an important marine product in the islands. Some of them have high commercial value and many others form excellent show pieces. Turbo and Troches have high commercial value. The shells are used as raw material in the shell handicraft industrial units, which is a growing
sector in ANI. The fishing sector contributed 4.5 per cent to SDP at 1987-88 current prices.

3.2.5 Industry

The ANI are industrially very backward. The entire Territory has been declared as a 'No Industry' area. The potential of these islands for industrial development lies basically in the small scale sector, based on fishery, forests, coconuts, plantation crops, and port harvest technologies. To encourage industrial development, the Government gives 75 per cent transport subsidy on the raw materials imported and on the finished products exported to the mainland.

Most of the existing units are in the small scale sector (709) and only six units are in the large/medium scale sector, all these six units being engaged in wood-based industry. Even in the small scale sector, the majority of units are based on timber. All the wood-based industries use about 1,05,000 cu.m. of timber and employ around 5,000 people per year.

3.2.6 Energy

Diesel, kerosene and wood are the major primary fuels consumed in the islands. Electricity is considered to be a major secondary fuel. Since the islands are scattered, decentralised power (electricity) generation system is followed. About six million kilo watts of electricity is being used annually in the domestic sector. The
consumption of kerosene exclusively for cooking is about 3.87 million litres per year. This would meet about 34 per cent of the total cooking energy demand and the rest of this demand is met by wood, which is estimated about 1,05,000 cu.m. per year. The electricity demand for wood-based industries is estimated to be about five million mega watts per year, whereas the electricity supplied to the entire industry is only 2.5 m.kwh. per year. Various renewable energy sources (RES) available are bio-mass, small hydro, wind and solar in the order of usefulness.

3.2.7 Transport and Communication

There are two types of transport - one between the mainland of India and the islands, and the other between various islands of the Territory. Shipping and air services link the mainland and the islands. The Shipping Corporation of India operates a passenger-cum-cargo vessel, and cargo vessels for bringing supplies from the mainland as well as for taking timber, timber products and other materials from the islands. The Indian Airlines provides three air services weekly, and only Boeing 737s land at Port Blair.

3.2.8 Tourism

The pristine nature and recreational aspects of these isolated islands remained unknown because of the long distance from the mainland and the false notion that their environment was inhospitable.
Now that they are easily accessible, a large number of domestic and foreign tourists have started arriving on these islands. The lush green tropical rain forests, the endemic flora and fauna, the historical linkages with freedom struggle and the recreational possibilities like surfing, game fishing, boat racing and beaches can offer more than what a common tourist would expect. The marine park, botanical gardens, marine aquaria, corals and coral reefs with their coloured fish have become added tourist attractions as these facilities are developed here (Singh and Gajja 1987:15). In fact, the Andaman Administration has identified "Tourism" as a potential area to develop during the eighth five-year plan period and allocated more funds for it.