CHAPTER III
STUDY AREA - A PROFILE

III. 1. A PROFILE OF NAGAPATTINAM DISTRICT

III.1.1. Introduction

District of Nagapattinam has been carved out as a separate district due to bifurcation of Thanjavur district. According to this division, six taluks namely Sirkazhi, Tharangampadi, Mayiladuthurai, Valangaiman, Nagapattinam and Vedaranniym were detached from their parent district i.e. Thanjavur to form this new district. The earlier history of this district is more or less the same as of its parent district i.e. Thanjavur being its part till recently. Tamil and Telugu are the main languages spoken in the district. Important fairs and festivals celebrated/organised in the district are Navarathri, Adi Pooram, Avani Moolam, Karthigai, Skandha Sashti, Thula Uthsavam, Vaikashi Brahmothsavam, Valli Kalyanam, Thirukkarthigai, Ahyayana Uthsavam, Chithirai and the floating festival, Mahasivaratri, Panguni Uthiram, 18 days theerthavari festival, Wedding of the Lord and His consort on the Sukla Sapthami day, Karthigai Deepam, Dhanur pooja (Thiruvathirai), Poosam and Pongal.

III.1.2 GEOGRAPHICAL LOCATION

Geographical Location of the District

The Nagapattinam district lies on the east coast to the south of Cuddalore district and another part of the Nagapattinam district lies to the south of Karaikkal
and Tiruvarur districts. Its northern boundary is about 75 Km southwards from the Head Quarters of the Cuddalore district. Thanjavur district and Tiruvarur district flank it on the west and on the south and east it is bordered by the Bay of Bengal. The district lies between 10.25°N and 11.40°N North Longitude and 76°49′E and 80.01°E East longitude. The general geological formation of the district is plain and coastal. The Cauvery and its offshoots are the principal rivers. Rising in the Coorg Mountains, this river bifurcates about nine miles at the west of Trichy into two branches, of which the northern one takes the name of Coleroen and the southern one retains that of the Cauvery. All along the course of Cauvery and its dis-tributaries, on both the banks numerous narrow strips of river
Map III. 1.1. Tamil Nadu
Map III.1.2. Taluks of Nagapattinam District
Map III.1.3. Blocks of Nagapattinam Distinct
porombokes lands called Paduagais that are cut up by countless patta lands. These strips ranging in width from about 3 metres to 100 meters are made up of bits of lands. Even though the Padugais and Poromboke lands are very dry they are very fertile. Flood banks of Cauvery and its dis-tributaries are away from the watercourses in the upper reaches where the river is wide and closer in the lower reaches and the river become narrow gradually. The marine land or coastal land has plain lands except for few sand dunes. However there is a general tilt from coastal line to inland area. The Vederanyam salt swamp, which is the largest swamp in Tamilnadu, runs along the coast from Point Calimere westwards to Muthupet. Consequently extensive lagoons have been formed in these areas. The terrain is an open plain, sloping towards the east and devoid of any hills. In south and Southwest of Thanjavur the country rises and forms a small plateau known as Vallam table land, broken by small ridges of grits and sandstoneÂ’s. Most of the rivers flow to the east into the Bay of Bengal. The most important feature of the district is the Cauvery River spread over with its numerous branches.

There are no less than eleven ports on the coast Nagapattinam district, of which eight are open to foreign trades. The coastline has a number of harbours of which mention may be made of Nagore, Point Calimere, Nagapattinam. The significant small ports are Kilvellore, Thirumulaivasalam, Nagapattinam, Velankanni, Toppudurai, Muttupet and Adiramapatnam. The Nagapattinam district is made up the 6 Taluks of Nagapattinam, Kilvellore, Vedaranniyam,
Mayiladuthurai, Sirkali and Thirangampadi. The East Side faces the Bay of Bengal. The district is the most part of a flat plain, slopping very gently to the sea on the east. The total geographical area of the district is about 3536.38 Sq.km. The details of the name of the taluks with area in Sq.km. are given in the following table.

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of the Taluks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nagapattinam</td>
</tr>
<tr>
<td>2</td>
<td>Kilvellore</td>
</tr>
<tr>
<td>3</td>
<td>Vedaranniyam</td>
</tr>
<tr>
<td>4</td>
<td>Mayiladuthurai</td>
</tr>
<tr>
<td>5</td>
<td>Sirkazhi</td>
</tr>
<tr>
<td>6</td>
<td>Tharangampadi</td>
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<tr>
<td>7</td>
<td>Thirukuvalai</td>
</tr>
</tbody>
</table>

Source: District Collectorate, Nagapattinam

Vedaranniyam salt swamp forms another great natural division. It runs along the coast from Point Calimere for about 48 kms. and is about 7 to 8 km. wide. This is the longest swamp of its kind in the state. It is filled by two periodical high tides during the full moon of months, May and June and retains sea water to a depth of two feet over a considerable area enclosed by low earthen banks, which when closed prevent the water from flowing back into the sea after
the tide recedes. It is in this manner the well-known Vedaranniyam spontaneous salt is produced.

Administrative Arrangement in the District

Community Development Blocks in the district are: Sirkažhi, Kolliđam, Sembanarkoil, Kuttalam, Mayiladuthurai, Thirumarugal, Nagapattinam, Kilvelur, Talanayar, and Vedaranniyam.

Table III.2 District Administrations

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the block</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Sirkažhi,</td>
</tr>
<tr>
<td>2.</td>
<td>Kolliđam,</td>
</tr>
<tr>
<td>3.</td>
<td>Sembanarkoil,</td>
</tr>
<tr>
<td>4.</td>
<td>Kuttalam,</td>
</tr>
<tr>
<td>5.</td>
<td>Mayiladuthurai,</td>
</tr>
<tr>
<td>6.</td>
<td>Thirumarugal,</td>
</tr>
<tr>
<td>7.</td>
<td>Nagapattinam,</td>
</tr>
<tr>
<td>8.</td>
<td>Kilvelur,</td>
</tr>
<tr>
<td>9.</td>
<td>Talanayar,</td>
</tr>
<tr>
<td>10.</td>
<td>Thirukkuvalai</td>
</tr>
<tr>
<td>11.</td>
<td>Vedaranniyam</td>
</tr>
</tbody>
</table>

Source: District Collectorate, Nagapattinam
The Nagapattinam district comprises 6 Taluks, 11 Blocks and 497 Villages. As regards the hierarchy of administrative arrangement, there are 3 Municipalities, 10 Town Panchayats and 433 Village Panchayats in the district. The details regarding the number of blocks, villages, village panchayats, town panchayats and municipalities.

**Meteorological Information**

a) **Temperature**: The average maximum temperature for the district (from 1991 to 2001) as a whole is about 32.46°C and the average minimum temperature is 24.75°C.

b) **Wind**: Dust Storms, whirl winds and dusty winds blow from various quarters towards the end of May. The Southwest winds sets in during April, it is the strongest in June and continues till September. Northeast monsoon starts during the month of October and blow till January. Cyclonic storm with varying wind velocity affects once in 3 or 4 years during the month of November-December. Both these storms affect the plantation crop. During Southwest monsoon the air is calm and undisturbed.

c) **Rainfall**: The Northeast monsoon, which starts in October and ends in December, contributes about 60% of the total annual rainfall. The Southwest monsoon rains from June to September and from March to May accounts equally for the rest of the annual rainfall. The monthly average rainfall in the district was 108.87 mm in 1991-2001.
d) Cyclone: Cyclonic storm brings havoc normally once in 3 or 4 years and heavy downpour during Northeast monsoon leads to flooding of the district and damages field crops and wealth of soil.

The average number of rainy days, mean maximum temperature, mean minimum temperature and mean relative humidity for the period 1991-96.

III.1.3. Demographic Details

The Growth of population over the past four decades and the essential characteristics of the population in terms of birth rate, death rate, infant mortality rate and literacy levels are given below. The marginal farmers (cultivators) and agricultural labourers constitute a sizeable population of the labour force in the district.

Population

The population of the Nagapattinam district has grown from 4,25,127 in 1951 to 14,88,839 in 2001. The growth rate indicates that there has been a significant increase during the 1951-61 decade with the average growth rate being 3.48% per annum during this decade. The growth rate has however stabilised over the past three decades at about 1.65-% per annum. According to the 2001 census, Mayiladuthurai taluk is the highly populated and Kilvellore taluk is the least populated in the district. There was a reduction of population of Nagapattinam taluk between 1971 and 1981 comprising bifurcated Tiruvarur
taluk. There were also reductions of Sirkali taluks comprising bifurcated Tharangambadi taluk in 1991.

**Trend in Birth/Death Rate and Infant Mortality Rate**

There has been a steady decline in birth rate, death rate and infant mortality rate over the past four decades in the district. The birth rate has come down from 39.50 in 1951 to 22.25 in 2001 (figures - per thousand) and the death rate from 21.0 in 1951 to 7.95 in 2001 (figures - per thousand). The infant mortality rate has also gone down from 92.50 in 1951 to 47.430 in 2001 (figures - per thousand). The details of birth rate, death rate and Infant mortality rate over the past four decades are given in graph.
Literacy Level among the Population

The literacy level of the Nagapattinam district according to figures available for the year 1996 is 59.87% with male literacy level being more than the female literacy level. It is also observed that while the male literacy level has grown gradually from 62.70% in 1981 to 65.89% in 1996, there has been a steady increase of female literacy level from 37.92% in 1981 to 49.03% in 1996.

The information on literacy level among the population of the district is given in graph.

**Fig. III.2. Literate Population of Nagapattinam District**

![Graph showing literacy population in Nagapattinam District]

Education

The table given below provides information on types of education institutions available in the towns of this district. It also indicates the number of stadium and public libraries available therein:
### Table III. 3. Educational Arrangement of the District

<table>
<thead>
<tr>
<th>Name of the Towns</th>
<th>Education Institutions</th>
<th>Stadium</th>
<th>PL / RR +</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kuttlam</td>
<td>Higher Secondary/Intermediate School (1), Secondary/Matriculation School (1), Junior Secondary and Middle Schools (3), Primary Schools (3).</td>
<td>--</td>
<td>PL : 1</td>
</tr>
<tr>
<td></td>
<td>Arts and Science College (1) Higher Secondary/Intermediate Schools (5), Secondary/ Matriculation Schools (6), Junior Secondary and Middle Schools (10), Primary Schools (25)</td>
<td>--</td>
<td>RR : 2</td>
</tr>
<tr>
<td>Mayilathurai</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Nagapattinam U.A.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Akkaraipettai</td>
<td>Junior Secondary and Middle School (1),</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>Primary Schools (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Andanappettai</td>
<td>Primary School (1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts, Science and Commerce College (1), Polytechnics (1), Higher Secondary/Intermediate Schools (4), Secondary/ Matriculation Schools (7), Junior Secondary and Middle Schools (12), Primary Schools (26)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Nagapattinam</td>
<td>Higher Secondary Schools (3), Secondary/Matriculation Schools (3), Junior Secondary and Middle Schools (4), Primary Schools (14).</td>
<td>3</td>
<td>PL : 2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RR : 2</td>
</tr>
<tr>
<td>Sirkazhi</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Higher Secondary/Intermediate Schools (1),</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Junior Secondary and Middle Schools (2),</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Primary Schools (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tirumullaivaral</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Higher Secondary/Intermediate Schools (1),</td>
<td>--</td>
<td>PL : 1</td>
</tr>
<tr>
<td></td>
<td>Secondary/ Matriculation Schools (1), Junior Secondary and Middle Schools (1), Primary Schools (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaitheeswarankoil</td>
<td></td>
<td>--</td>
<td>PL : 1</td>
</tr>
<tr>
<td></td>
<td>Higher Secondary/Intermediate Schools (2),</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary/ Matriculation Schools (2), Junior Secondary and Middle Schools (5), Pri. Schools (12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vedaranniyam</td>
<td></td>
<td>--</td>
<td>PL : 1</td>
</tr>
</tbody>
</table>

PL / RR + - Public Library / Reading Rooms

Source: District Collectorate, Nagapattinam
III. 1.4. LAND RESOURCES

Resources of the district, their availability, use and environmental status are discussed in the following chapters. In Nagapattinam district, Narimanam village is the place where Petroleum products are available. In respect of other places, especially in riverbed region, petroleum products are available.

Agriculture and Horticulture

Land Utilisation

The total geographical area of the district was 3536.38 Sq.km. in 1995-96. Cropped area accounts for about 65.53% of the total area. Forest cover is very minimum accounting for only about 1.31% of the land. The non-available for cultivation land covering Barren and Uncultivable land, and land put into non-agricultural uses, accounts for 22.83%. The other uncultivated lands including (a) permanent pastures and other gazing lands, (b) miscellaneous tree crops and groves not in the net area shown and (c) cultivable waste land, cover 5.35%. However, figure on forest land seems to be at variance with the reported extent of forest area by the forest department. The land utilisation pattern in the Nagapattinam district (Block-wise) is given in graph.

Fig. III.3. Land Utilisation At Nagapattinam District
This coastal district abounds in green paddy fields, tall coconut groves, vast gardens of mango and plantain tree and other verdant vegetations. Paddy is the main crop of this district and it is grown three times in a year. The first crop is known as 'Kuruvai' (the short-term crop) with duration of three and a half to four months from June-July to October-November. The second crop called the 'Thaladi' has duration of five to six months from October - November to February-March. Third is the 'Samba' (the long-term) crop and has duration of almost six months from August to January. Other cereal crops of the district are cumbu, ragi, maize, korra and varagu. The pulses grown in the district are redgram, greengram and blackgram. Other food crops are condiments and species, sugar crops, fruits and vegetables. Among the non-food crops, cotton/fibre, edible oils crops (groundnuts, coconut and gingelly) non-edible oils crops (castor, miger seeds, though in very small area) are the important ones.

**Trend in Production and Productivity of Important Crops**

Cereals, pulses and oil seeds are the three important crops produced in the district. The production of cereals, pulses and oil seeds fluctuate for the past five years (1991-96). The areas under production for cereals, pulses and oil seeds, also fluctuate for the past five years. The reason for the fluctuation could be using rotation of crops seasonally. The details on the productivity performance of the district in relation to Cereals, Pulses and Oil Seeds for the past 5 years.
**Soil Types**

Sandy Coastal Alluvium and Black Soil types cover 88.71% and 6.58% respectively in this district. The other Soils in the district comprise 4.71%.

**Status of Soil and Water Conservation Programmes**

Information on construction of new wells and construction of check dams/stop dams are indicates to be Nil in the district.

**Forest Resources**

Forest types: The forests of this division can be divided into two regions from the topography, and flora point of view. They are 1) The Alluvial Regions or Riverine Land areas. These areas lie on the banks of river and canal in the form of narrow strips. Teak plantations mostly cover these areas, wherever the soil is unsuitable for teak, Sisso, Arjun and Eucalyptus have been planted in such areas. Although the soil is light and porous with high water table, the forest areas under these zones are subjected to tremendous biotic pressure and at present their poor floristic composition consist of limited number of herb and thorn species. The present situations do not bring them in any category of Forest type as per Classification of forests made by Champion and Seth.

The Coastal regions: This zone contains the Casurina plantations, the mangroves and the scrub jungle with the exception of a portion of Point Calimere sanctuary where about 23 sq.km. of tropical dry evergreen forests are existing.
Major portion of the land 65.55% is used for cultivation of paddy for three times in a year but the forest cover has lesser percentage (1.31%).

**Forest Area**

There are 41 forest areas in the Nagapattinam district constituting a total area of 5311.70 hectares. 35 forest areas fall under the Reserve Forest category with 5037.21 hectares and 6 under reserve land category with 274.49 hectares.

**Animal Husbandry**

Animal husbandry is an allied activity of agriculture in this district as well but it could not keep pace with the developmental work undertaken in the field of modern agricultural techniques. Therefore, the cultivators still depend on cattle imported from other neighbouring districts. The livestock found in this district are generally cattle and buffaloes, sheep, goats, pigs apart from poultry birds, which include fowls and ducks. The district have several artificial Insemination centres, and sub-centres, key village blocks, veterinary hospitals and dispensaries which render valuable services for the development of livestock in the district.

**Mineral Resources:**

Lignite: Lignite seams have been encountered between 320 to 370 metre depth during the course of drilling by the Oil & Natural Gas Commission (ONGC) in Tirumangalam area near Mayilathuthurai. The fixed carbon ranges from 26.12% to 37.50%, which is higher than the lignite of Neyveli. The similar
occurrences have also been reported from Vanadirajapuram, Chittakadu, Pandanallur and Kattumannarkoil areas.

 İllemenite Sands: İllemenite garnet sands were located between Mimisal and Adirampattinam, Tranquebar, Tirumullaivasal and at the mouth of Coleroon river. In Tranquebar probable reserves of illemenite and garnet are estimated at 90,400 tonnes and 4,900 tonnes respectively. An occurrence of Illmenite rich beach sands is reported in east of Kodiampalayam. It extends over a distance of 2 kilometres with an average width of 50 metres.

Kankar: Kankar and tuffaceous limestone occurs under red soil/laterite ranging in thickness from 0.3 to 1 metre, and Kankar layers are noticed in stream sections. The important occurrences are seen on the Grand Anicut canal cutting between Kuruvadipatti and Podur also in neighbourhood Thirumalasamudram. The thickness of Kankar in Thirumalasamudram area ranges from 2 to 2.5 metres and the total reserves are about 0.5 million tonnes. The Kankar is of good quality, with Cao ranging from 48.43 to 52.72% and low in magnesia and silica contents.

Salt: Salt pans are located at Adirampattinam and Vedaranyam.

ONGC: The ONGC of India is intensively exploring to augment the underground oil and natural gas resources of the Cauvery delta and not it is estimated to have vast potential. Many wells are being opened and started yielding oils and gas.
III.1.5. WATER RESOURCES

Rivers, Canals and Waterways

The district is situated in the deltaic region of the famous river Cauvery and criss-crossed by lengthy network of irrigation canals. Kollidam River forms the northern boundary of the district, whereas Arasalar, Tirumalairajanar, Vettar and Vennar rivers drained the other parts of it. These all rivers are tributaries and branches of the river Cauvery.

River basins and their Catchment Areas

Catchment Area of River Basin

Vettar, Odambogiar, Kaduvaiyar, Pandavaiyar and Vellaiyar are the five minor basins of river basins in the district. Place of origins, total and within the district length and area of the basin in areas.

Basin-wise Status of the Ground Water Availability

Basin-wise status of the ground water availability for the Cauvery basin is made available only for composite Nagapattinam district comprising bifurcated Tiruvarur district.

Details of Dams & Reservoirs

Information was not available for dams and reservoirs in the district.
Irrigation by Different Sources

Nearly canals serve 80 percent of the total net area irrigated and only the river Cauvery feeds these canals. The Cauvery Delta system is the most ancient of all irrigation schemes in the undivided Thanjavur. This comprises mainly of three important projects. They are the famous Grand Anicut, the Upper Anicut and the Cauvery Vennar Regulator Project.

Fisheries Production

The Nagapattinam district has a coastal line of 165 kms. The Inland Fresh Water area spreads for about 1,000 (10 Sq. Km.) hectares. Marine fishing is practised in 60 coastal villages of the district.

Fishery: Since the district is a coastal region, marine fishing assumes importance. The marine fish catch mainly comprises of leognathics, sharks, flying fish, chank, catfish, prawns, silver bellies, crabs, rays and other miscellaneous varieties.

Mechanised boats; catamarans and country canoes are all used for fishing. A fish-landing jetty has been constructed at Kodikarai, which caters to the needs of marine fishermen and is the only workshop in this coastal area. A comparison indicates that the Coastal Fish Production is higher than the Inland Fish Production.
III.1.6. TOURISM AND DEVELOPMENT

Protected and Conserved Monuments

Dutch Fort and Dutch Tombs are the protected monument maintained by the State Archaeology Department in the district.

Places of Tourist Attraction

Poompuhar (Sirkazhi block), Tharangampadi (Sembanarkoil block), Velankanni (Velankanni block), Nagore (Nagapattinam block) and Point Calimere (Vedaranniyam block) are the main tourist spots in the district. The first 4 tourist spots are visited throughout the year and the last tourist spot is visited from August to March. The foreign tourist arrivals have fluctuations and domestic tourist arrivals have been steadily increasing except in the years 1992-93 and the tourist arrivals both domestic and foreign are estimated at 2,99,150 during 1996. These five tourist spots are also included in the tourist circuits identified by the Tourism Department.

Fig. III.4  Tourist Arrivals In Nagapattinam District
III.1.7. INFRASTRUCTURE

Urbanisation

Urbanisation pattern

The proportion of urban population to total population has increased during the decade 1981-91 and is estimated at about 26.79% during the year 1996. The proportion of municipality population to the total population has decreased from 16.38% in 1981 to 16.23 in 1996. But the proportion of town panchayats population to the total population has increased steadily from 6.68% in 1981 to 10.56% in 1996. Among the urban areas, municipalities account for a greater share of urban population when compared to the other urban areas.

Density of Population

The overall density of the district has increased from 646 persons / sq.km. in 1981 to 770 persons / sq.km. in 1996. The density in urban and rural areas has increased from 2817 persons/sq.km. in 1981 to 3456 persons/sq.km. in 1996 and from 525 persons/sq.km. in 1981 to 600 persons/sq.km. in 1996 respectively.

Urban Services

The total quantum of water protected water supply system in the district account for 172.10 lakhs litres. The average Percapita water supply is around 53.33 LPCD for the district. The municipalities of Nagapattinam and Mayiladuthurai have the highest Percapita consumption of 55 LPCD and the Town Panchayats of Kuttalam, Vedaranniyam and Manalmedu also have the same
Percapita consumption. In terms of population covered, the Municipality of Mayiladuthurai registers 84% at the maximum and the Town Panchayats Kuttalam and Manalmedu register 100% while in the other areas it averages around 95%.

Population below poverty line

1,38,463 families are below poverty line in Nagapattinam district.

Transportation

Development of Roads and Bridges

The composite Nagapattinam district has State highways, major district roads and other district roads. There are no National Highways. The length of the roads in all the categories have increased in 1996 in the district. The same situation is observed in the case of major and minor bridges and culverts and hence the real progress made in the development of roads and bridges could be seen.

Growth of Vehicle population

There has been a significant increase of two, three and four wheeler vehicles in the district over the past 10 years. Increase of vehicles may increase air pollution emitted from them.
### III.1.8. Industrial Development and Environmental Status

#### Industries

The district is deprived of any major industry but it is a flourishing centre of cottage industries and handicrafts alike. The district is equally well known for its pith articles consisting of beautiful models of Hindu idols, temples, mosques, flower garlands, bouquets, parrots and peacocks. The flower garlands and bouquets are much in demand during Christmas days. Pith is grown on the beds of tanks in the Sirkazhi, and Mayuram taluks. The making of musical instruments of jack wood like the veena, the tambura, the violin, the mridangam, the tabla and the kanjara exhibit excellent taste, knowledge and workmanship. The jack wood has special quality for producing musical sounds. Government has established an industrial training institute at Nagapattinam. This is to promote industrial development in the area. With a view to improve the condition of the weavers, the State Government like housing schemes has also initiated various welfare measures, introduction of group insurance etc.

#### Number of Industries

There are 490 industrial units situated in the composite Thanjavur district, of which, 4 sugar units, 1 petroleum refinery, 1 distillery, 1 thermal power plant are coming under highly polluting industry. M/s. ONGC have explored crude oil and natural gas in Nagapattinam District. The crude oil is made available for Madras refineries limited whereas natural gas is utilised as fuel in ten nos. of sodium silicate units. Also this gas is utilised as a fuel for one thermal power generation
unit (2X5 MW) by TNEB in this area. One SIDCO Industrial Estate is located at Nagapattinam. The industrial units in these estates are non-polluting or less polluting in nature.

**Aqua Culture Activities**

An Extensive water sample analysis carried out in over half-a dozen villages of Sirkali taluk, in the aquaculture belt of Nagapattinam district by the Gandigram Rural University as reported in Indian Express dated October 9, 1994 has revealed a disturbing deterioration in the quality of the only source of potable water ground water

An independent study made by the Bhagawati Environment Development Institute recently has established that hardness, chloride and alkalinity levels of water collected at 17 different points in Sirkali taluk of Nagapattinam District spread over the seven villages of Niethalvasal, Mehendrapalli, Keelaiyur, Pudukuppam, Eranjimedu, Thirunagari and Radhanallur are in excess of the prescribed tolerance limits for drinking water.

**III. 1.9 HEALTH**

District Head Quarters Hospital is situated at Nagapattinam. It provides Medical Care to all the Patients who come to the Hospital. Quality of Service depends upon availability of Resources and patient load. Services are free for poor (Income ceiling less than Rs.1000/-PM) and all in casualty.
This Hospital has 445 Beds. Doctors wear white coat, nurses and Others in prescribed Uniform. Enquiry counter exist in the OP Department during OP Department hours. Signboards and guidelines are fixed at strategic points for guidance. Casualty and emergency services are available round the clock on all days. Duty Doctors are available round the clock. In serious cases, treatment get priority over usual requirements.

INDOOR TREATMENT

Free diet is provided to poor patients. Staff Nurses are on duty round the clock in the Ward. Admitted patients should contact the Nurse on duty for any Medical assistance.

CASUALTY AND EMERGENCY SERVICES

These services are available at:- main casualty located accessible from main gate. All Medico legal cases including traffic accident cases are attended to main casualty. All Casualty services are available round the clock. Duty Doctors are available round the clock. Specialist doctors are available round the clock. Heads of departments are available on call from Specialist, if required. Emergency services are available for all specialties as listed in the OPD services. Emergency operations are done in Emergency Operation Theatres (Three Nos.) Operation Theatres are located on Hospital Building.
PRIMARY HEALTH CENTRES LEVEL

Treatment at primary Health Centre is given from 8.00Am to 11.00AM and 3.00PM to 5.00PM. 2 Medical Officers are available at each Primary Health Centre. For emergency Treatment Ambulance services are available on payment. Each Primary Health Centre is provided with some beds for in-patient's treatment. Anti-natal clinic is conducted on every Tuesday. Immunization of infants is done every Wednesday.

Free blood examination is done to Anti-natal mothers, Ferrous sulphate Tablets(FST) are distributed to anti-natal mothers. I.U.D., insertion services are available. To know the malaria positive cases, Blood smears are taken for fever cases. Sputum examination is done to identify T.B. Cases/lesions examined by NMS during OP time and confirm for treatment IEC also given for deformity cases. Blood smears are taken to identify the Filaria cases.

Rabies and Snake bite cases are treated both day and night. Deliveries are conducted at the Primary Health Centre. in-patients facility is available for other patients also. AI medicines are check-up are given free to the patients with the monthly income less than Rs.1000/-

Primary Health Centre

It is the basic agency adopted to serve primary health needs of people of that smallest area.
It is defined as an institution for the promotion of health and welfare of the people in a given area, which seeks to achieve health work through coordination with welfare and relief organizations.

PHCs were started in 1952 as a part of community Development Programme in order to provide comprehensive health care to people in rural areas.

The PHCs are located at the community development block head quarters and act as a focal point from where the health services radiate into the area covered by the community development block covering approximately 100 villages and about 66,000 population.

**The Main Functions of a Primary Health Center**

The PHCs are to offer both preventive and curative services through the following basic health programme,

1) Relief
2) Child health, family planning
3) Fundamental sanitation
4) School health
5) Communicable disease control
6) Collection of vital satisfies
7) Health education
8) Nutrition
All the National Health Programmes for the control of communicable diseases such as small pox, venereal diseases, tuberculoses and leprosy are integrated along with the health services of primary health center.

**Staffing Pattern**

<table>
<thead>
<tr>
<th>Position</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Officers</td>
<td>2</td>
</tr>
<tr>
<td>Compounder</td>
<td>1</td>
</tr>
<tr>
<td>Sanitary Inspector</td>
<td>1</td>
</tr>
<tr>
<td>Health Inspector</td>
<td>1</td>
</tr>
<tr>
<td>Extension Educator for Family Planning</td>
<td>1</td>
</tr>
<tr>
<td>Computer</td>
<td>1</td>
</tr>
<tr>
<td>Auxiliary Nurse Midwife</td>
<td>1</td>
</tr>
<tr>
<td>Driver</td>
<td>1</td>
</tr>
<tr>
<td>Ancillary Staff</td>
<td>1</td>
</tr>
</tbody>
</table>
Organization of Health Services and Staffing at Primary Health Center Level

For every 8000 Population

- Medical officer: 2
- Health Worker (Female): 1
- Compounder: 1
- Health Worker (Male): 1
- Sanitary Inspector: 1
- Health assistant: 1
- 1 for Health Inspector: 1
- Male 4 Health Worker: 1
- Extension educator: 1
- Health assistant – 1 for Female: 1
- Computer: 1
- 4 Health Worker: 1
- AMN: 1
- Driver: 1
- Ancillary Staff: 1

The Responsibilities of Female and male Health Worker

**Female Health Worker**

1) Registration and care of Prenatal and Post natal mothers at home.

2) Registration and follow up of all eligible couples.
3) Provide Nutrition advice and immunization to mothers and children.

4) Refer mother and children at the time of need to hospitals and follow them up after discharge.

5) Carry out family planning services including the distribution of contraceptives.

6) Provide treatment for minor ailments.

7) Notify communicable diseases.

8) Maintenance of records and registers of all the services provided and also of vital events such as Births and Deaths.

**Male Health Workers**

1) Conduct survey of the sub-center area and maintain records of all families.

2) Maintain information of all vital events.

3) Participate in medical control programme.

4) Participate in family planning services by keeping a list of all eligible couples, provide information on the family planning methods, follow up of the family planning acceptors.

5) Participate in nutrition programme

6) Promote health education activities.

7) Identifying and reporting about communicable diseases.

8) Co-ordinate the activities with female health worker and the Block staff.

9) Maintaining Records.