CHAPTER II

THE STUDY AREA

2.1 Location and Extent
2.2 Brief Physical Background
   2.2.1 Relief
   2.2.2 Drainage
   2.2.3 Geology
   2.2.4 Soils
   2.2.5 Climate
2.3 Economic Background
   2.3.1 General Land Use
   2.3.2 Some Aspects of Agriculture in the Study Area
   2.3.3 Industrial Landscape
2.4 Demographic Features
   2.4.1 Distribution of Population
   2.4.2 Density of Population
   2.4.3 Change of Population
   2.4.4 Occupational Structure
2.5 Transportation
   2.5.1 Road Accessibility
CHAPTER II
THE STUDY AREA

2.1 Location and Extent:

The Coimbatore Metropolitan Area\(^1\) lies (between 10°15' to 11°15' North latitude, 76°51' to 77°10' East longitude) in the midwestern part of Coimbatore District (Tamilnadu, South India) and is bordered by Avanasi Taluk in the North, Pollachi Taluk in the South, Palladam Taluk in the East and Kerala State on the West (Fig. 2.1). The Metropolitan Area comprises parts of Coimbatore and Palladam Taluks of Coimbatore District. It is in the Coimbatore-Wilgiris Planning Region which is one of the Planning Regions\(^2\) in Tamilnadu.

The study area has an extent of 756.14 sq.kms. and had a population of 907,238 as per 1971 census. 81.3% of this population live in urban areas and 18.7% live in rural areas. There are 38 settlements in the study area. As per the 1971 census 35 settlements have been classified as villages, 21 settlements as towns and 2 settlements as cities. The study area is divided into six Panchayat Unions, namely Periyamayakkapanpalayam, Sarkar Samakulas, Thendamuthur, Perur, Madukkarai and Sulur (Fig. 2.2).

All the Panchayat Unions are in Coimbatore Taluk, except Sulur which is situated in Palladam Taluk one of the Taluks of Coimbatore District. Here, it may be pointed out that Coimbatore City (population of 356,346, 1971 census) is an important regional centre in the state of Tamilnadu, the other important city being the Singanallur.

The Metropolitan Area is situated in the cotton growing tract. The important agricultural tracts surrounding this area are as follows: The paddy, sugarcane, groundnut region on the north; paddy, sugarcane and chilam region on the south and the paddy, chilam and cotton region on the east. The present study area forms a part of the major industrial axis running from Madurai to Bangalore through Coimbatore. The region is well connected with Madras, Mysore, Cochin, Salem, Madurai, etc., through good trunk roads. It lies 495 Kms. west of Madras, 158 Kms. west of Salem, 276 Kms. north of Madurai, 98 Kms. south of Ootacamund, 160 Kms. east of Cochin and 204 Kms. south of Mysore. The National Highway passes through this area in the east-west direction. Four state highways radiate from the centre of this area towards North, North-East, East and South.

2.2 Brief Physical Background:

2.2.1 Relief:

From the map (Fig. 2.3) it can be seen that the shape of the area is that of a rectangle with the river Noyil flowing from west to east almost in the centre of the area. The lowest
contour which is noticeable is in the south-western corner, is only 274 meters (900 feet). The highest contour which is found in the west and north-western border of the study area is 508 meters (1700 feet). The study area has an average elevation of 360 meters (1300 feet). The general slope is from north to south and from west to east. On the whole, the area is an undulating plain drained by Neyil river.

The Western Ghats which form the western boundary of Coimbatore District had a number of valleys opening out into the plain formed by spurs of mountains running from west to east (Ramachandran Chettiar, 1935). The Vellianirgi hills are only the spurs of the Nilgiri mountains lying in the north and just a few kilometers away from the western boundary of the study area. The Sholakkarai and Boluvampatti range lie in the western part of the study area. The Lambton peak range is an off-shoot of Boluvampatti range. This range immediately overlooks Coimbatore city and ends close to Tadiyalur (10 km. north Coimbatore. Ramachandran Chettiar, 1930).

The fertile lower stretches of the Neyil valley are found in the southern part of the study area. To the north of Neyil we have the Thadagam valley. Further north is the Govanur or Nayakkanpalayam valley with a small stream in it.
The study area can be broadly divided into three minor physiographic units. They are (i) the hilly region on the west and north-west with an average elevation of more than 450 meters. This region stretches along the western margin of the study area. (ii) The plateau region that lies in between the hilly region on the west and the plains of east and south. The altitude of this region varies from 370 meters to 450 meters. And (iii) the plains in the east and south is the third minor physiographic region. The eastern plain is drained by the Noyil and its tributaries and the southern plain is drained by the head-waters of Valayar river flowing down south-west.

Only six settlements are there in the west and north-west. In the plateau region, there are altogether 30 settlements, whereas in the plains there are 22 settlements. From this it can be inferred that the plateau and the plain region has encouraged the growth of settlements. Further, it can be anticipated that the future metropolitan growth will be in the plateau and plain region, since the elevation in the west will be a barrier for the future metropolitan development.

2.2.2 Drainage:

The important drainage system in the area is the Noyil river and its tributaries (Fig. 2.4). The Noyil river has its sources in the Velliangiri hills and flows through Boluvampatti valley and emerges into the open plain from Perur eastwards. Periyar, Chinnar, Iruthupalam, Samisudiar, etc., are the chief tributaries of river Noyil.
The Noyil river assuming the name 'Kanchi Mahanadi' at Perur and flows through Coimbatore, Singanallur, Vellalur, Irugur and Sular. The Noyil river is little more than a jungle stream being altogether dry for 8 to 10 months in the year, mainly because at its source, it does not receive much supply from the south-west monsoon (500 mm. to 625 mm.). It is largely fed by petty affluents from the plains during the north-east monsoon. During the north-east monsoon period, however, Noyil feeds a series of irrigation tanks on its course.¹ The early cultivators were therefore forced to resort to the damming of the river wherever possible. As a result of it they had constructed 32 anicut on the river and 31 of them are put to good use even now (Ramachandran Chettiar, 1935).

Three main basins are identified in the Noyil River system (Ramachandran Chettiar, 1935). The upper basin falling in Coimbatore taluk is the most fertile and the best utilised. The middle and lower basins in the Palladam and Erode taluks are not of much use (Ramachandran Chettiar, 1935). The present study area can be divided into 3 river basins such as Noyil, Govanur and Thadagas; Noyil basin is considered to be important one, as the later two are very small.

The upper Noyil basin, consists of a network of six channels, which feed a series of irrigation tanks. Among them the Chitra-

chavadi channel is the most important channel (12 km. long) in the study area from the point of view of irrigation.

The middle basin of the Noyil river falls approximately in the centre of Palladam Taluk. The utility of the river in this basin is limited.

From the above mentioned facts it becomes clear that the study area falls partly in the upper and middle basins. The upper basin is fertile and has the maximum benefit of the drainage system whereas it is not the case with the middle basin.

The drainage system in this area has played a dominant role in the location of settlements. For example, the oldest settlements such as Ferur, Vellalur etc., are located in the Noyil valley. A glance at the distribution of settlements in the study area shows that the Gevanur valley has only one settlement. In the Thadages valley there are four settlements. About 91.3% of the settlements are located in the Noyil basin. 27.6% of the settlements are located along the Noyil valley. 29 settlements (or 50% of the settlements) are located either near the streams or within the vicinity of the streams. 16.9% of the settlements are located on the tank sites. From this it is evident that the Noyil river and its tributaries had a remarkable influence on the location of settlements.

In the early historical period the main trade route and the main highway (Karavali) were along the Noyil river valley.
And hence the oldest settlements like Perur, Vellalur, Singannallur, Coimbatore, etc., are found located in the river valley. This might be due to abundant water supply, fertility of the soil and also due to the plain level of the land facilitating easy transportation.

2.2.3 Geology:

The present study area occupies a part of Tamilnadu Deccan which is a stable land mass of great rigidity, having undergone less changes when compared to that of coastal Tamilnadu (Rao, 1930; Wadia, 1953; Krishnan, 1956).

All the rocks, the alluvia and a few sub-aerial formations expected to belong to the great Genesic series, the bottom rocks in the Indian series on which all other younger rock series are deposited. As a rule, the Schistose, Micaceous and Hornblendic varieties of Genesic predominate greatly. But bands of massive Granitoid varieties also sometimes occur as for instance, in the mountains north of Palghat Gap, on the western and south-western side of the study area. The formation conforms to a general strike in the direction ENE and WSW in the neighbourhood of Coimbatore. However it varies towards north-east.

As regards the mineral wealth, limestone is found in abundance in extensive beds in the hills near Madukkarai. Feldspar of finest

quality is also abundant (i.e. translucent pink and opaque white varieties). Manganese is found in the black sand in Virapandi village (20 Km. north of Coimbatore).

The abundant occurrence of limestone at Madukkarai enabled the construction of one of the biggest cement manufacturing centres in South India as early as in 1934.

2.2.4 Soils:

The soils of the study area are chiefly red loam, black clay and black soil. The red loam occurs in about 37% of the total occupied area. Generally the soils are of moderate depth in the valleys and they are enriched by the wash from the uplands on the west and north-west. In other areas the red soils are generally of fair composition chemically, owing to the presence of pottash, lime and magnesia.

The soil map (fig. 2.5) shows the distribution of red and black soils in combination with loam, sand and clay; and also the combination of both red and black soils. Red loam is found in a considerable tract in the study area occupying an extent of 20.7% of the total area. It is found to be distributed along the western margin and in the southern part.

Black clay soil occupies the second largest area in a long strip to the north of Singanallur. It occupies 17.68% of the total area.
The third predominant soil is red and black loam. It is found on a tract of 10,628.86 hectares on the western side adjoining the black clay and in a pocket on the northwest.

Black and red soils are the other two soils found in abundance in the area, occupying 11.7% and 7.8% of area respectively. Black loamy soil is found in and around Coimbatore City and Harasimhamayakkampalayam (2986.00 hectares). Red and black loam is found in the northern part in small pockets on an area of 1719.25 hectares. Red soil is found in Mayakkampalayam village in the northwestern corner of the study area over an area of 1469 hectares. The red loam and red sandy variety of soils occur in two patches occupying 1271.44 hectares in Muthugundanpudur and Siripalayam.

**TABLE 2.1.**

**DIFFERENT TYPES OF SOIL AND THEIR EXTENT.**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Type of soil</th>
<th>Area in Hectare</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Red Loam</td>
<td>25,746.39</td>
<td>36.90</td>
</tr>
<tr>
<td>2.</td>
<td>Black Clay</td>
<td>12,315.24</td>
<td>16.95</td>
</tr>
<tr>
<td>3.</td>
<td>Red Loam and Black Clay</td>
<td>10,822.28</td>
<td>15.22</td>
</tr>
<tr>
<td>4.</td>
<td>Black Soil</td>
<td>8,188.15</td>
<td>11.74</td>
</tr>
<tr>
<td>5.</td>
<td>Red Soil</td>
<td>5,434.55</td>
<td>7.79</td>
</tr>
<tr>
<td>6.</td>
<td>Black Loam</td>
<td>2,986.00</td>
<td>4.28</td>
</tr>
<tr>
<td>7.</td>
<td>Red and Black Loam</td>
<td>1,719.23</td>
<td>2.46</td>
</tr>
<tr>
<td>8.</td>
<td>Red Sand</td>
<td>1,488.00</td>
<td>2.15</td>
</tr>
<tr>
<td>9.</td>
<td>Red Loam and Red Sand</td>
<td>1,271.44</td>
<td>1.82</td>
</tr>
</tbody>
</table>


Table 2.1 shows that the red soils occupy greater proportion of land. They are impregnated with lime and enriched by organic matter from the hills on the west. In general, the weathering has not kept pace with the erosion of surface soil cover, an account of low rainfall
and thus the subsoil often cut crops at the surfaces which has resulted in the scarcity of vegetation, giving rise to a barren appearance (Ramamurthy, 1950).

2.2.5 Climate:

The climate of the area under study is pleasant, owing partly due to elevation (MSL) and partly due to the cooling effect produced by the South-West Monsoon which enters this area through the Palghat Gap especially in May, June and July. The eastern part (for example Sulur) is comparatively hotter.

In the study area, just as in the case of Tamilnadu, the following seasons can be recognised (Ramamurthy, 1950).

3. The retreating monsoon season - Mid. October - Mid. December.

The climate in the month of January and February is pleasant. March is usually very oppressive due to the rise in temperature and the highest recorded temperature is in the month of March (between 18841-1940 it was 104°F). During these months there is very scanty rainfall. This period is the driest period of the year. In April the weather gets hotter and a few thunder-showers occur. In May the temperature continues to rise and the thundershowers become more frequent. As the southern portion of the study area lies across the Palghat Gap, the weather is cool
and damp. Rainfall occurs during the months of June and July.

In October the north-east monsoon sets in; but the heaviest rains are usually in the end of October and in November.

The following table shows the daily maximum and minimum temperatures, highest and lowest recorded temperatures (°F) and mean monthly rainfall for the period from 1881-1940.

**TABLE - 2.2**

**TEMPERATURE AND RAINFALL**

(1881 - 1940)

<table>
<thead>
<tr>
<th>Month</th>
<th>Temperature</th>
<th>Rainfall</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean of daily</td>
<td>Mean of daily</td>
</tr>
<tr>
<td></td>
<td>Maximum</td>
<td>Minimum</td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>January</td>
<td>86.0</td>
<td>64.9</td>
</tr>
<tr>
<td>February</td>
<td>90.9</td>
<td>66.5</td>
</tr>
<tr>
<td>March</td>
<td>95.4</td>
<td>70.2</td>
</tr>
<tr>
<td>April</td>
<td>96.5</td>
<td>73.6</td>
</tr>
<tr>
<td>May</td>
<td>94.4</td>
<td>73.6</td>
</tr>
<tr>
<td>June</td>
<td>88.8</td>
<td>71.9</td>
</tr>
<tr>
<td>July</td>
<td>86.7</td>
<td>71.0</td>
</tr>
<tr>
<td>August</td>
<td>87.4</td>
<td>71.0</td>
</tr>
<tr>
<td>September</td>
<td>88.7</td>
<td>70.9</td>
</tr>
<tr>
<td>October</td>
<td>87.7</td>
<td>70.7</td>
</tr>
<tr>
<td>November</td>
<td>85.4</td>
<td>69.0</td>
</tr>
<tr>
<td>December</td>
<td>84.3</td>
<td>66.0</td>
</tr>
</tbody>
</table>

**Average:** 89.3  69.9  104.0  53.0  23.25

It is clearly seen from Table 2.2 that the average maximum temperature over a series of years from 1881-1941 is 89.3°F, the average highest and lowest temperatures recorded during the same period are 104.0°F and 53.0°F respectively. The average annual rainfall is 57.50 cms (23.25 inches) (Fig. 2.6).

With such a scanty average annual rainfall, the lowest for all the districts in the state, it is not surprising that scarcities often prevail and occasionally famines too occur. It is said that not less than two thirds (2/3) of the season in the last century were unpropitious and many near calamities have occurred. In some years even though the south-west monsoon does not altogether fail, it is scanty and partial; but in most years, it is the north-east monsoon which fails.¹

2.3 Economic Background:

2.3.1 General Land Use:

In this section an attempt is made to analyse the general land use pattern in the Coimbatore Metropolitan Area, in order to understand the basic infrastructure of the region.

The Fig. 2.7 shows the general land use types in the study area as per 1971 census. The general land use is broadly divided into the following four major categories such as cultivated lands, cultivable waste, land not available for cultivation and forested lands.

The land under cultivation is further divided into two more categories viz., irrigated lands and unirrigated lands. The cultivated land occupies 58.01% of the total area. However the irrigated land occupies only 30.61% of the total area. Further it is seen that more than 70% of the cultivated land is under irrigation in the centres like Vadavalli, Tittipalayam, Kumarapalayam, Coimbatore N.M., Perurchettipalayam, Saravanampatti, Vellanipatti, Siripalayam, Kalapatti, Velankurichi, Ettimadai, Ottakalmandabam and Chitrachavadi. Likewise 50 to 60% of cultivated land under irrigation is found in the following centres such as Ganapati, Perur, Chinnavedampatti, Kallipalayam, Kiranattam, Idikarai, SARKAR SAMAKULAM, Vellakkinar, Vellalur. From this it can be inferred that these centres are potential agricultural areas. Further, it is observed that greater proportion of cultivated land under irrigation is found in the central part of the study area, especially along the course of the Noyil river valley.

The second category of land under cultivation is unirrigated land, occupying 27.4% of the total area. More than 70% of the unirrigated land is found in the following centres: Orattukuppai, Pidampalli, Vellamadai and Mallampatti, which are located along the marginal areas in the North, North-East and South-East. This shows that these centres are comparatively drier than those that of the rest of the area. Further, unirrigated cultivated land (occupying 50 to 70% of the area) are also found in the centres
like Kondayampalayam, Panminadai, Malaimachampatti, Chettipalayam, Madukkarai and Pattanam. These centres are also found distributed adjoining the above mentioned marginal areas. On the whole it is possible to conclude that areas east of Coimbatore City has got more irrigation facilities than the rest of the area. In the above mentioned area the subsoil water and the channels from the Noyil river affords irrigation facilities.

The second major land use category is the cultivable waste land, and it occupies negligible area (4.42% of the total area). Cultivable waste lands are found prominently in Sulur, Pallapalayam, Arasur, Kannampalayam and Pattanam centres. However, the low percentage of land under cultivable waste category may be due to the intensive cultivation of the land.

The third major division or category of land use is the land not available for cultivation. This type of land use covers 23.65% of the total area. More than 50% of land is not available for cultivation in areas like Telungupalayam, Somayampalayam, Sanganur, Kavundampalayam and Irugur. This is mainly due to the location of institutions like Agricultural University in Telungupalayam, Industrial establishments (Telungupalayam, Sanganur, Kavundampalayam, Irugur and Singanallur) apart from the other types of uses like buildings, roads, railways etc. Further, a considerable proportion of land under this category is found in Sarkar Sanakulas, Kallipalayam, Kiranatham, Idikarai, Panminadai, Kurichi and Perur.
Forests occupy 3.17% of the total land in the Metropolitan Area. They are mostly distributed in Nongakkanpalayam and Gudalur (23.99 hectares) which lies in the northwestern part of the region.

2.3.2 Some Aspects of Agriculture in the Study Area:

As already stated, the Coimbatore Metropolitan Area has 58.01% of its total area under cultivation. Since the area receives only an annual rainfall of about 600-700 mm, irrigation (viz., Channel, Tank and Well) plays an important role.

The only river in the study area is the Noyil which is non-perennial in character. The irrigation under its channels has consequently been supplemented by tanks which it fills up along its course. It has specially enriched the neighbourhood of Coimbatore by its channels and tanks.¹ Its water, however, is not quite sufficient for the tanks which depend upon it and it barely fills up the upper tanks during the south-west monsoon. All the same, its water is fully utilised for irrigation in Coimbatore and Palladam Taluk (Ramachandran Chettiar, 1938). Not less than 13,214 acres are irrigated under its eight anicuts in the Coimbatore Taluk. However, the following table shows the various anicuts and the area irrigated by them.

---

<table>
<thead>
<tr>
<th>Name of the Anicut</th>
<th>Area irrigated (in acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perur (Kumamuthur) anicut</td>
<td>1037</td>
</tr>
<tr>
<td>Perur left anicut</td>
<td>1747</td>
</tr>
<tr>
<td>Coimbatore anicut</td>
<td>143</td>
</tr>
<tr>
<td>Coimbatore left anicut</td>
<td>2327</td>
</tr>
<tr>
<td>Kurichi anicut</td>
<td>60</td>
</tr>
<tr>
<td>Kurichi right anicut</td>
<td>452</td>
</tr>
<tr>
<td>Vellalur anicut</td>
<td>338</td>
</tr>
<tr>
<td>Vellalur right anicut</td>
<td>331</td>
</tr>
<tr>
<td>Singanallur anicut</td>
<td>445</td>
</tr>
<tr>
<td>Singanallur left anicut</td>
<td>845</td>
</tr>
<tr>
<td>Oddarpalayam anicut</td>
<td>634</td>
</tr>
<tr>
<td>Oddarpalayam left anicut</td>
<td>129</td>
</tr>
</tbody>
</table>

The spring channels of Neyil which were formerly found to be useful in supplementing the irrigation under its channels in Palladam Taluk (of the Metropolitan Area) have of late been found to be practically useless owing to their poor underground flow.²

As regards the tanks, it is found that they irrigate an area of more than 4561 acres. However, the role played by well irrigation is significant in this area. This is mainly due to the fact that the gradual slope of the land is more favourable for well irrigation. The wells which are situated on the tank fed lands, supplements the irrigation facilities.

From the point of view of crops it is found that food crops occupy 65.10% of the total cultivated area, the rest being under non-food crops. The important wet crops cultivated in this area are paddy and sugarcane, and the dry crops are cholas, groundnut, ragi, cumbu, horsegram and pulses. Among the non-food crops cotton plays a very important role in the agro-industrial landscape of this region.

The crop map (Fig. 2.6) shows the general distribution of crops cultivated in the study area for 1961 census, and it is possible to recognise four major crop regions, viz., (a) paddy, sugarcane and cholas region, (b) cholas region, (c) paddy region and (d) cholas and cotton region. In the first region paddy, sugarcane are the wet crops and cholas is the predominant dry crop. The other secondary dry crops cultivated in this region are ragi, groundnut and cotton. This region is found to be the eastern and north-eastern part of the study area.

In the second region cholan is the predominant crop and the other crop are ragi, sumbu, pulses. This region occupies the central part of the study area.

The third crop region is the paddy, sugarcane region. This is found to occur in down south, a patch in the west, north and north-east. This occupies comparatively lesser area. This is due to the fact that in these smaller patches, there may be sufficient irrigation facilities to raise both the wet crops.

The last crop region is the cholan and sugarcane region. This is found in small patches lying in the east and north of Coimbatore. Occasionally pulses are also cultivated in this region.

From the crop map it is evident that along the Noyil valley the wet crops like paddy, sugarcane and cholan are prominent. Even though the eastern margins are comparatively dry (i.e., getting a rainfall of less than 600 mm) with the aid of deep well irrigation, intensive cultivation of paddy, sugarcane, cholan and cotton are carried out.

2.3.3 Industrial Landscape:

Industries play an important role in the development of any region. Hence, it is worth mentioning about the spatial distribution of various large and small scale industries in the Coimbatore Metropolitan Area. It is hoped that this will throw some light on the economic background of the study area. According to Ramesh (1965), out of the total workers in Tamilnadu, Coimbatore
district shares 43.5%. This shows the importance of the District as a whole. Coimbatore is an industrial node, which forms a part of the industrial belt of Tamilnadu.

The map 2.9 shows the distribution of various large scale industries in the study area. The important large scale industries are textiles, engineering, food processing, chemicals etc. Textile industries are by far the most important agro-based industry. It is clearly seen that a large number of textile industries are located in Coimbatore, Singanallur, Periyakanayakkampalayam, Ganapati, Tudiyalur, Kurichi and Kuniamuttur. Considerable number of textile industries are also found in Ootakalamandham, Pallapaalayam, Kannapalayam, Saravanapatti and Kalapatti. Further, it may be pointed out that the large scale textile industries are found to concentrate in and around Coimbatore.

The second important large scale industry, viz., engineering industry is also found to concentrate in and around Coimbatore. The important centres of concentration of engineering industries are Coimbatore, Singanallur, Ganapati and Ettimadai. The automobile industry is found to be distributed in Coimbatore, Kurichi and Ganapati. The biggest Cement Factory in Tamilnadu is located at Madukkarai. The Metropolitan Area is also important for electrical industry, since a large number of units are found in Coimbatore and Singanallur. Further, it is also found that a few units of this kind are distributed in Periyakanayakkampalayam, Tudiyalur and Nilambur. The plastic industry is found only at Coimbatore and Singanallur. Likewise, the chemical and fertilizer industries are
also found in the above mentioned centres. The other important large scale industries in the study area are food processing, paper and paper products and rubber industries. From the distribution of various large scale industries in the study area it becomes obvious that Coimbatore, Singanallur, Ganapati, Kurichi, Tudiyalur, Periyanayakkanpalayam are important industrial centres.

Among the small scale industries, non-factory establishments are found to be concentrated in Coimbatore (Ramasekh, 1966). A glance at the map showing the small scale industries (Fig. 2.10) clearly indicates that there are about sixteen types of industries found in Coimbatore Metropolitan Area. Even among the small scale industries, it is seen that textile industries, engineering industries, electrical industries, chemical and fertiliser industries are prominent in this region. A considerable number of workers are engaged in these industries. In the engineering industries at Coimbatore, Singanallur, Kurichi, Tudiyalur, Ganapati, Periyanayakkanpalayam, Vellakkinar, Kuniamuttur and Malaimachampatti a considerable number of workers are engaged.

A lesser number of workers are engaged in this industry located in the centres namely Vadavalli, Pannimadai, Telungupalayam, Tittipalayam, Arasur, Salur and Kuniamuttur. Matches and fire works industry at Madukkarai and Singanallur is also need mention.

Printing industry is found in Coimbatore, Perur and Vellakkinar.

In textile industries which are located in Kalappatti and Coimbatore, a considerable number of workers are engaged. The other small scale
industries such as food products and beverages, paper and paper products, metals and alloys, automobiles, opticals, rubber, drug and cement industries which are found in Coimbatore also engage a considerable number of workers.

From the distribution of large and small scale industries in Coimbatore Metropolitan Area, it becomes very clear that Coimbatore, Singanallur, Kurichi, Ganapati, Koniamputtur, Periya-nayakkanpalayam, Tudiyalur and Kalapatti are the important industrial centres.

2.4 Demographic Features:

In this section an attempt is made to analyse some of the demographic aspects such as the distribution of population, density of population, occupational structure etc. This will give a better insight into the Coimbatore Metropolitan Area.

2.4.1 Distribution of Population:

The Coimbatore Metropolitan Area had a population of 663,903 as per 1961 census, and 907,236 as per 1971 census. Thus it has registered an overall growth of 29.12% in that decade, whereas the same period for the whole district as such is only 22.02%. So the growth rate during the period 1961-1971 for this area has shown a significant increase than the district as a whole. The Fig. 2.11 shows the distribution of population as per 1961 census. From this distribution it is clear that there is a greater concentration of population in and around Coimbatore and the surrounding suburban areas such as Singanallur,
COIMBATORE METROPOLITAN AREA

DISTRIBUTION OF POPULATION

FIG. 2.13
Kurichi, Kumamuthur, Ganapati, Vellalur and Telunguppalayam.
The other areas of significant concentration are Irukur, Sulur, Madukkarai and Periyamayakkampalayam. Concentration of population is also observed in a zone spread along the Noyil river valley. In the rest of the area the population is thinly distributed. The marked concentration along the Noyil river and in and around Coimbatore is mainly to the fact that the soil is fertile and water supply abundant. Further, the location of cotton textile, engineering, chemical and other industries would have also attracted the people from outside the study area. They would have migrated and settled down in and around Coimbatore. Moreover, Coimbatore city has provided facilities like administration, education, health, judicial etc. The Fig. 2.12 shows the distribution of population as per 1971 census. This again reveals a greater concentration of population in the Noyil river valley and along the major highways. The dot map also (Fig. 2.13) confirms this fact.

It is clearly seen from Fig. 2.11 that the urban (census) centres are concentrated in the central part of the study area around Coimbatore. Further 62.5% of the urban centres are found in the Noyil Basin especially around Coimbatore. A few urban centres like Periyamayakkampalayam, Sulur and Madukkarai are found along the margins of the study area especially on the main highways. The urban centres has grown due to the location of
industries. For instance, cement industries at Madukkarai, textile and engineering industry at Periyamayakkampalayam and construction of Civil Aerodrome at the Sulur are some of the examples. As per 1961 census 68.32% of the population were living in urban areas. This 68.32% were distributed in eight urban centres. It is observed that 65.08% of the urban population was living in Class I city vis., Coimbatore, 16.27% in Class II town vis., Singamallur. In the case of Class III town there were only 6.26% and in the Class IV town 12.63% of the urban population were living as per 1961 census. There was only one Class I town which contained just 1.72% of the urban population. The rest of the population (227,127) was distributed in fifty villages.

During 1971, 81.3% of the population in the study area was distributed over an urban area of 25.97 sq.km. The urban population has increased from 68.32% (1961) to 81.30% in 1971. One of the reasons for the increase in urban population is the fact that the following places classified as village in 1961 have attained urbanhood as per 1971 census (Fig. 2.14). They are Velankurichi, Virakeralam, Narasimhanayakkampalayam, Kurudampalayam, Perur, Coimbatore N.M., Senganur, Kavundampalayam, Telungupalayam, Perur Chettipalayam, Chinnavedampatti, Pallampalayam and Muttugounderupudur. The distribution of towns are found in and around Coimbatore and along major highways. As per
1971 census there are 23 towns and two cities in the study area. The total population of the study area as per 1971 census was 907,236 and of this total population only 18.7% was distributed in 35 census villages.

2.4.2 Density of Population:

The density of population (Fig. 2.15) follows the same pattern as that of the distribution of population. The average density of urban population was 2371.7 per sq.km. and the density of rural population was 343 per sq.km. as per 1971 (census). The overall density of the study area is 1200 per sq.km. The Fig. 2.15 shows that a very high density of exceeding 5000 per sq.km. is found in the central part of the study area, i.e. in and around Coimbatore. The density of population decreases towards north, north-east and southeastern part of the study area. This is due to relative dryness of the area. The density in general decreases towards east. The western part has a higher density than the east. However, along the entire course of Koyil river, the density is high. This is due to the soil fertility and adequate water supply. The lowest density is found to occur in Orathukkuppal and Malaisachampatti. This is mainly due to local relief and relative barrenness of land.

2.4.3 Change of Population:

Between 1961-1971 an increase of 29.20 per cent for the entire area is noticed whereas for the same period Coimbatore District has registered a growth rate of only 22.92%. The urban
population during the period 1961-1971 has increased by 54.92%. The Fig. 2.16 shows that there is an increase of more than 25% around Coimbatore, Singanur, Kavundampalayam and Kumarapalayam have registered an increase of more than 100%. This is due to the fact that new industries have come up in these centres. Secondly, there would have been migration of people from outside the study area, seeking employment opportunities. In centres like Chitrachavadi, Tudiyalur, Kurudampalayam, Gudalur, Nayakkanpalayam, Vinampali and Nilambur the growth rate is between 50 to 100%. Again this can be attributed to the location of industries in these centres. Kiramatham, Milampatti, Kasi-palayam and Muttugoundanpudur centres have registered a negative growth, possibly due to migration of people from these centres to other centres in pursuit of employment. It is seen that along the highways there is a positive growth of population of more than 25%. The development of industries such as cotton textile, engineering industries, etc., may be a determinant for this population growth. More than 70% of centres have registered a positive growth (1961-1971) validates the fact that location of industries is responsible for the population growth in the area.

2.4.4 Occupational Structure

The occupation of the people in this area can be divided into three broad groups, such as primary occupation (including cultivators, agricultural labour, live-stock, forestry, fishing.
hunting, plantation, orchards and allied activities, mining and quarrying), secondary occupation (manufacturing, processing, servicing and repair, household industry, other than household industry) and tertiary occupation (construction, trade and commerce, transport, storage and communication and other activities).

Fig. 2.17 shows the occupational structure of the working population in the Coimbatore Metropolitan Area as per 1971 census. It is clearly seen that throughout the study area the people engaged in the primary sector (agriculture) is greater in proportion than in other two sectors (industries and service). Especially in the centres in the western margin, a greater percentage of the working population is engaged in the primary sector. For example, in Mayakkampalayam, Vellamadai, Agarabharasamakulam, Kondayampalayam, Kiranatham, Kallipalayam, Arasur, Pidampalli, Orattukuppai, Chettipalayam, Malaimachampatti, Siripalayam, Ettimadai, Tittipalayam, Perunchettipalayam, Chitrachavadi, Vedappatti, Virakeralam, Vadavalli, Somayampalayam, Pannimadai, Vellakkinar and Chinna vedampatti more than 50% of the working population is engaged in primary sector (especially in agriculture). This is due to the fact that in the western part of the study area the agricultural tracts like Guvanur valley, Thadagan valley and Noyil valley are situated. Further south we find the head waters of Walayar. Hence, these areas are provided with adequate water facilities. It is also noticed that all along the Noyil valley a greater percentage
of the working population is engaged in agriculture due to above mentioned reason. From figure 2.17 it is observed that a greater percentage of people is found engaged in agriculture in centres located on the periphery of the study area. This fact is clearly observed in north, north-east, south-east, south, west and north-west. This might be due to the increasing distance of these centres from Coimbatore city and also due to the fact that they have emerged as centres from centrally located villages.

The secondary occupation is also important in this area. This is seen from the Fig. 2.17 that a sizable proportion of the working population in the Coimbatore Metropolitan Area is engaged in industries. As has been mentioned earlier that Coimbatore city is an important industrial city in Tamilnadu. Hence, a greater proportion of the people in and around Coimbatore and Singanallur are engaged in industrial activities. Moreover, sizable proportion of the people of Ottoikkalmandham, Kurichi, Pallapalayam, Kunjicuttur, Telungupalayam, Sanganur, Pattaman, Vellalur, Canapati, Irukur, Nilambur, Kalappaty, Saravanampatti, Narasimhamayakkampalayam, Periyanayakkanpalayam and Gudalur are engaged in industries. More than 50% of the working people in Canapati, Singanallur, Irukur, Vellalur, Kurichi, Ottoikkalmandham, Pattaman, Pallapalayam and Periyanayakkanpalayam are engaged in the secondary occupation. This is due to the concentration of cotton textile industries, engineering industries, electrical, cement and other industries that are located in these centres.
A very small proportion of the people in Orathukkuppai, Kallipalayam, Kondayanpalayam, Kiranathan, Agaraharasamakulas, Vellamadai and Tittipalayam are engaged in this sector. Further the sizeable proportion of people in this sector are found in most of the centres might be due to the fact that people in these centres might have been attracted by the employment opportunities and these people would have settled down in villages and smaller towns in the study area. This might be due to the factors like cheap rent, good roads, frequent bus facilities etc.

A greater proportion of the people in Coimbatore, Kurichi, Telungupalayam, Kavundampalayam, Kumarapalayam, Perur, Senganur, Madukkarai, Sarker Samakulas, Mailempatti, Coimbatore N.M., Sulur and Muttugoundampudur are engaged in the tertiary sector. In this Muttugoundampudur is an exception because the entire working population is in railways. In the other centres, the administrative function and educational institutions might have influenced a greater proportion of the people to engage in services. For example, Coimbatore is the district and taluk head quarters. In Perur, Sarker Samakulas, Periyanayakkampalayam, Madukkarai and Sulur the respective Panchayat Union head quarters are located.

The Tamilnadu Agricultural University is situated in Telungupalayam. A lesser proportion of the population in Chitrayachavadi, Vedapatti, Pannimadai, Mayakkanpalayam, Vellamadai, Agaraharasamakulas, Kondayanpalayam, Kiranathan, Arasur, Pattanam, Orattukkuppai, Malaimachampatti are engaged in services. These centres are found
in the marginal areas of the Metropolitan Area. As the distance increases from Coimbatore towards the margin a smaller proportion of the people are found engaged in tertiary activities. Further, it is observed that greater the proportion of the people in primary sector in a centre, the smaller the proportion of the people engaged in the tertiary sector in the centre. From the above analysis it can be concluded that in Coimbatore Metropolitan Area Primary and Secondary sector are equally important.

2.5 Transportation:

Communication constitutes perhaps the most important single factor in the location of industry and distribution of population in any region (Appleton, 1962).

Coimbatore is a primary nodal centre of this area from where the roads radiate in all directions; becoming service links for the urban and rural centres (Ramesh, 1963). A close examination of Figure 2.16 shows that the relief has played an important role in the alignment of road network as is more visibly seen by the trend of the National and State highways.

The National highway from Madras to West Coast runs along in the north-east of this area towards the west coast through Arasur, Nilambur, Kalapatti, Velankurichi, Singanallur, Coimbatore, K.K., Kuniyamuttur, Madukkarai and Attimadai.
The state highways radiate from Coimbatore and traverse the area in different directions. For instance, of the State highways runs from north to south touching Virapandi, Periyamayakkapalayam, Gudalur, Narasimhanayakkapalayam, Kurudasapalayam, Tudiyalur, Vellukkinar, Sanganur, Coimbatore, Kurichi, Malaiyanchampatti and Ottakkalmandalam. The second state highway proceeds from Coimbatore towards north-east to Sathyamangalam. The third state highway starting from Coimbatore runs to Tiruchirapalli via Singanallur, Irugur and Sulur.

Apart from the above mentioned major highways there are two other district roads. One starts from Coimbatore and proceeds to west passing through Kumarapalayam, Perur and Perumchettipalayam. The second road connects Sarkar Samakulas with Tudiyalur. The transport network clearly establish Coimbatore as a well defined nodal centre of great importance.

The nodality of Coimbatore is further strengthened by the pride of position occupied by Coimbatore between the eastern and western coastal regions on the one hand and the Mysore plateau in the north and low land in the south, on the other (Subramaniam, 1930).

The total road length in the Metropolitan area is 792.50 Km. and the road density works out to 1.04 per sq.km. It is interesting to note that in the Coimbatore Metropolitan Area the average road
length per 10,000 population is 8.73 km, which is conspicuously well above the state average (4.47 km).

The broad gauge railway line was introduced in this area in 1862 A.D. It is found to enter in the east to reach Coimbatore. From Coimbatore it branches into two, one proceeding north to Mettupalayam and the other to Palghat in Kerala State. Further there is a mixed gauge in between Coimbatore and Kurichi (Poddanur). From Poddanur junction the metre gauge line proceeds to Pollachi in the southwest. The total length of the railway line in the area is only 84 km. In the present study area the average length of the railway line for 10,000 population is .925 km.

Figure 2.18 showing transport network makes explicitly clear the fact that road network plays dominant role in providing transportation facility in any direction; and it is more so when compared to railways.

2.5.1 Road Accessibility

The existing transport network in the Coimbatore Metropolitan Area shows a greater accessibility by road. For instance, no centre (village or town) is more than one kilometer away from any of the roads. Further the bus service map (Fig. 2.19) shows the importance of different roads in terms of their flow. And the bus service flow also confirms the nodality of Coimbatore

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1. Only the long distance bus service is considered here.
and the bus facility available for the people in this area. In the case of the railways, most of settlements are within the range of 5 km., from the railway line. A few centres in the west and in the north-east lie more than 5 km., from the railway line. The fact that only 15.5% of centres are 5 km. away from the railway line substantiates the point that Coimbatore Metropolitan Area shows a greater accessibility by road than railway line. These centres are found distributed in the north-east and western parts of the area. However, the road network and the bus service in this area has a greater impact on the distribution of population and location of industries.