7.1 A Prologue and Perspective

Anantapur district is the second driest place in the country. Agriculture as an occupation, in this district has become an undependable source to sustain the population due to frequent failure of monsoons. In the light of this, the policy of the Government is to promote industrialisation to facilitate a balanced regional economic development and solve the problems of poverty and unemployment.

7.1.1 The Concept of Industry and Industrialisation

The term industry is defined as a group of firms, producing the same commodity for the same market. The term industrialisation is defined as the process in which changes of a series of strategical production functions are taking place. Industrialisation is organically
linked to both social and economic past and to a parallel process of economic and social development. Society progress from subsistence phase to commercial phase and to an industrial phase. This industrial phase further involves three stages. In the first stage secondary activity is concerned with the processing of primary products like milling grain, extracting oil, preparing skins, tanning leather, spinning vegetable fibre, preparing timber and smelting ores. The second stage in the evolution of industry comprises transformation of materials like making bread, footwear, metal goods, cloth and furniture. The third phase consists of the manufacturing of the machines and other capital equipments.

7.1.2 Level of Industrialisation in Andhra Pradesh and Anantapur District

Though Andhra Pradesh is endowed with rich resources, the industrial activity has not grown much, to contribute significantly to the growth of economy. The per capita value added by manufacturing is only Rs.215 in the state as against Rs.364 in Maharashtra. The share of manufacturing sector in 1994-95 in the G.D.P. in the state was only 10.3 per cent as against 16.5 per cent in India.

Anantapur is the least industrialised district in Rayalaseema and fifth least industrialised district in the state after Warangal, Nizamabad, Mahaboobnagar and Prakasam districts. It stands far behind the top industrialised districts like Hyderabad, Ranga Reddy and Medak. It is
lagging behind both in the case of small scale and tiny industries and also in large and medium scale industries.

7.1.3. The Concepts of Industrial Complexes and Growth Centres

According to Perroux, who developed the concepts of industrial complex, growth pole and growth centre, growth does not appear everywhere and all at once. It appears in points or development poles, with variable intensity. It spreads along diverse channels and with varying terminal effects to the whole of economy. Bouldeville (1966) defines a regional growth pole as a set of expanding industries located in an urban area and inducing further development of economic activity throughout its zone of influence. Hansen (1970) defines a growth centre as a complex consisting of one or more communities or places, which taken together provide or likely to provide a range of cultural, social, employment, trade and service functions for itself and its associated rural hinterland. Misra, R.P. defines a four level of hierarchy of growth foci viz., service centres at the local level growth points at sub regional level, growth centres at the regional level, and growth poles at the national level.

One of the basic economic concepts and their geographical developments of the growth centre theory is the concept of leading industries and propulsive firms. This concept states that at the growth centres there are large propulsive firms which dominate other economic units. In time, the dynamic propulsive qualities of the growth centres
radiate outwards into surrounding space. A core of such industries forms an industrial complex.

7.1.4. Objectives of the Study

1. To study the regional setting, assess the resource potential and identify the growth centres and growth points.
2. To examine the growth and development, spatial distribution and structure of tiny and small scale industries and also large and medium scale industries.
3. To formulate a plan for future industrial development in the district in the light of the study.

7.1.5. Database and Methodology

The work is mainly based on secondary data. The sources of data are District Industries Centre, District Information Centre, Publications of Industries Centre, Hyderabad, Directorate of Economics and Statistics, Hyderabad, District Handbook of Anantapur, Economic Surveys and Plan Reports of Andhra Pradesh. Information is also gathered through personal discussions and visits to selected industries.

The industries are classified into two categories viz., tiny and small scale industries and large and medium scale industries, based on capital investment. The limit is periodically, revised by the government due to inflationary effects. The tiny and small scale industries are further
grouped into 10 categories and large and medium scale industries are grouped into 9 categories based on the products produced. The analysis is done taking mandal as the study unit, employing suitable statistical and cartographic techniques. A detailed account of the methodology is given at the beginning of each chapter.

7.1.6. Limitations of the Study

During the course of collection of data from the District Industries Centre, it was learnt through personal discussion, the data related to non-functioning and closed units are not reported and recorded properly. For instance the closure of some of the large and medium scale industries like Bharat Gold Mines is in the public knowledge but on records it is still functioning. The account given in the present study, about the closure of many large and medium scale industries, is based on the information collected by the author from various sources. The same could not be done with respect to small scale and tiny industries for obvious reasons. There are reports that many units have become unviable and are closed. But data is not available with the District Industries Centre. Due to data constraints and paucity of data, a detailed study of tiny and small scale industries is confined to three major categories viz., food products, cotton and other textiles and mineral based and ceramic industries.
7.1.7 Organisation of the Study

The present study is divided into seven chapters.

1. A Prologue and Perspective
2. A Profile of the Study Region
3. An Appraisal of Resource Base
4. Growth and Development of Industries
5. Spatial Distribution of Industries and Regional Disparities
6. Industrial Structure
7. Summary and Conclusion

7.2. A Profile of the Study Region

As geographical factors play an important role in determining the resource potential of a region and thereby the primary and secondary activities and indirectly the tertiary activities, the overall development of the region depends on them. Also the location and development of an industry is dependent on the availability of resources like mineral, agro and human and also various infrastructural facilities. To understand the present spatial distribution of industries, their problems and prospects, a general profile of the district is given covering the physical and socio-economic parameters and also infrastructural facilities.

7.2.1. Geomaitcal Extent and Administration Divisions

Geomatically, Anantapur district lies between $13^\circ 41'$ N and $15^\circ 14'$ N Latitudes and between $76^\circ 47'$ E and $78^\circ 26'$ E Longitudes. It is one of
the four districts of the Rayalaseema region in Andhra Pradesh. The district has been divided into 3 revenue divisions viz., Anantapur, Dharmavaram and Penukonda which are further divided into 63 revenue mandals. Mandal forms the basic unit of the study.

7.2.2. Physical Setting

The district forms part of Rayalaseema plateau, which is an extension of Karnataka plateau. It is dominated by erosional topography. The general elevation varies from 685 meters in the south to 225 meters in the north east. The district may be divided into three topographic units viz., 1. Hill ridges and associated terrain, 2. The undulating terrain, 3. Flat and gently undulating plains. The prominent hill ranges of the district are Muchukota ranges, Nagasamudram hills, Mallappakonda range and Penukonda hills. These are covered with spare vegetation. There are numerous isolated hillocks and rocky clusters which are devoid of any vegetation.

Geology: The geological formation of Anantapur district belong to two distinct groups viz., an older group of archaean rocks and an younger one of sedimentary and metamorphic rocks (Cuddapah and Kurnool System). The archaeans cover a larger part of the district except eastern part which is covered by the Cuddapah and Kurnool systems. The archaean comprises amphiboles. Peninsular gneisses, chlorate schist, biotite schist, actinolite, hornblende granite, bonded magnetite, quartzite etc. In
Vajrakarur and Lattavaram area these are intruded by kimberlite rocks which are diamondiferrous.

The Cuddapah and Kurnool systems cover Tadipatri, Yadiki, Konaruppalapadu, Putluru, Yellanur, Kristapadu and Muchukota areas. These are the areas having good reserves of limestone asbestos, barytes and slates.

**Soils:** Anantapur district is mainly covered with red soils which cover 76.0 per cent of the area and black soils which cover 24.0 per cent. The northern mandals of the district viz., Rayadurg, Kanekal, Beluguppa, Gooty, Guntakal, Vajrakarur, Uravakonda, Vidapanakal, Yadiki, Tadipatri, Putluru and Yellanur contain large areas of black soils.

**Drainage System:** Almost all the rivers found in this district are ephemeral rivers. Major part of the district is drained by the Pennar river and its tributaries (Chitravati, Papagni, Jayamangala, Swarnamukhi, Pandameru). The northern part of the district is drained by Hagari river, a tributary of Krishna river. The important irrigation projects in this district are Upper Pennar Project, Tungabhadra Project High Level Canal, Guntakal Branch Canal, Chennarayaswamigudi Project and Bhairavantippa Project. These projects together irrigate nearly 60,000 hectares of land (1.5 lakh acres) in Anantapur, Garladinne, Bukkarayasamudram, Singanamala, Narpala, Vidapanakal, Vajrakarur, Uravakonda, Tadipatri, Putluru, Yellanur, Peddapappuru, Gooty,
Rainfall: The geographical position of the district in the middle of the peninsula, renders it the driest part of the state. The normal rainfall of the district is 520.4 mm which spatially varies from as low as 413.8 mm (Vajrakarur) in the north western part to a maximum 641.9 mm in Bukkapatanam area. Of the total rainfall, 60.0 per cent is received during southwest monsoon period while 28.0 per cent is received during North-east monsoon period. During summer the normal daily temperature ranges between 29.1°C and 38.4°C and during the cooler months the normal minimum temperature falls to about 17.2°C.

7.2.3. Socio-Economic Setting of Anantapur District

The district accounts for 6.9 per cent of the area and 4.8 per cent of the population (1991) of the state. The density of population is 166 persons per km² which is lower than that of the state (241/km²). But the decadal population growth rate during 1981-91 period is slightly higher (Anantapur district 24.95%, A.P.State 24.2%). It is relatively less urbanised (23.5%/26.9%), has lower sex ratio (946/972), and literacy rate (35%/44.1%). The male literacy rate is higher than that of the female (46.5%/22.9%). It has substantial scheduled caste (14.2%) and scheduled tribe (3.5%) population. The total working population is only 43.4 per
cent, of which cultivators (35.5%) and agricultural labourers (38.6%) account for more than 70 per cent of the working population. The work force employed in the secondary sector is very low, accounting for only 6.9 per cent of the total workers. The marginal work force is 6.5 per cent of the total workers.

The net sown area in the district of Anantapur (1992-93) accounts for 51 per cent of the geographical area and only 1.6 per cent of it is sown more than once. The net irrigated area accounts for only 15.2 per cent of the net cropped area. The gross cropped area accounts for 52.6 per cent of the total geographical area. The district occupies the second lowest position in the state in respect of irrigation facilities with only 16.7 per cent of the gross cropped area having irrigational facilities (1992-93). Out of the gross irrigated area of 4.16 lakhs acres, canals accounted for 25.4 per cent, tanks 4.5 per cent, wells (including tube wells) for 66.9 per cent and other sources for 3.2 per cent.

**Urban and Rurban Centres:** The district has 12 urban centres and 106 rurban centres. A rurban centre is one with over 5000 population but not having other urban characteristics. These are the potential service centres and growth centres at the grassroots level. Anantapur, Tadipatri, Gooty, Guntakal, Uravakonda, Dharmavaram, Kalyandurg, Rayadurg, Penukonda, Kadiri, Hindupur and Prasanthinilayam are the urban centres in the district.
7.2.4. Infrastructural Facilities

Road Network: The district has a total road length of 9139.4 kms out of which 5.7 km are cement roads, 2122.3 kms (23.2%) are black topped roads, 2552.7 kms (27.9%) are metalled roads and 4458.7 kms (48.8%) are un-metalled roads. All weather roads constitutes only 50 per cent of the road length in the district. Still the major part of the district has fair accessibility by roads.

Railway Network: Railway lines extend over a length of 589 kms of which 340 kms are broadguage lines 249 kms are metreguage lines. The district is connected to important cities of Andhra Pradesh and also India through direct trains.

Besides the district has also got good communication, banking and educational facilities.

Industrial Estates: Andhra Pradesh Infrastructural Corporation has so far established five industrial estates in the district in Anantapur, Gooty, Tadipatri, Kadiri and Hindupur mandals. Besides these two industrial development areas at Guntakal and Tumukunta (Hindupur), two tiny industrial estates exclusively for Scheduled Castes at Sajjaladinne (Tadipatri) and Lepakshi were also established. The Government of India has sanctioned for the development of a growth centre at Hindupur in 1500 hectares of area (1988), to act as a magnet to attract industries to this backward district. This is one of the four centres sanctioned to the state.
Incentives: Anantapur is one of the three districts selected by Government for intensive industrial development offering various incentives like investment subsidy deferment/tax holiday for sale tax, and power concessions for new industrial units.

7.3. Resource base of Anantapur District

The resource base of a region has a profound influence on economic growth and level of development of that region. Here an attempt is made to appraise the resource base of Anantapur district covering human, agricultural, animal and mineral resources.

7.3.1. Human Resources

The population density of this drought-prone district is comparatively less than that of the state. Still it has a total a population of 31.83 lakhs with an average density of 166/km². But at mandal level the total population varies from as low as 23,219 (Gandlapenta mandal) to as high as 2,26,031 (Anantapur mandal), and the population density varies from as low as 81 per km² (Kanaganipalli mandal) to as high as 624 per km² (Anantapur mandal). Mandals like Ramagiri, Agali, Nambulapulakunta, Nallacheruvu, Amadagur, Gandlapenta, Raptadu, Atmakur, Kudair, Peddapappuru, Yellanur, Tadimarri, Battalapalli, Brahmasamudram, Setturu, D.Hirehal, Somandepalli and Rolla have very low population. Mandals like Garladinne, Putluru, Peddavaduguru, Beluguppa, Kambadur, Kundurpi, Gummagatta, Lepakshi, Nallamada,
Talupula, Puttaparthi, Kothacheru, Bukkapatnam, Bukkarayamudram, Chilamatturu, O.D.Cheruvu have moderate population. Mandals like Yadiki, Pamidi, Anantapur, Tadipatri, Guntakal, Gooty, Uravakonda, Vajrakarur, Vidapanakal, Dharmavaram, Kalyandurg, Rayadurg, Kanekal, Penukonda, Madakasira, Amarapuram, Hindupur, Parigi, Gorantla, Kadiri, Mudigubba and Tanakal have high to very high total populations and also densities.

**Distribution of SC and ST Population**: The distribution of Scheduled Caste and Scheduled Tribe population is indirectly an indication of availability of agricultural labour force. The SC population varies from as low as 2317 persons in Gandlapenta mandal to as high as 1793 persons in Anantapur mandal. And percentage of SC population varies from 8.0 per cent (Anantapur) to 22.9 per cent (Kambadur). In general Scheduled Caste population is high in south-western par of the district like Amarapuram, Gudibanda, Rolla, Agali, Madakasira, Parigi, Somandepalli and Roddam and eastern, central and north-eastern parts of the district consisting mandals like Kambadur, Ramagiri, Kanaganipalli, C.K.Palli, Beluguppa, Kudair, Bukkarayamudram, Singanamala, Putluru, Peddapappuru and Peddavaduguru. In the rest of the district SC population is low to very low.

The proportion of ST population varies from 0.05 per cent in Yellanur mandal to 11.8 per cent in Nallamada mandal. Very high
proportion is found in mandals like Atmakur, Vajrakarur, Beluguppa, Kambadur, Penukonda, Puttaparthi, Bukkapatnam, Gorantla, Kadiri, Mudigubba, Nallamada, Talupula, Gandlapenta mandals. In general relatively high concentration of Scheduled Tribe population is noticed in south eastern, central, and northern part of the district.

**Literacy:** In comparison to the literacy level in the state the district has low literacy rate (35.0%/44.1%). Though the district has a moderate male literacy rate of 46.5 per cent as against 55.1 per cent in the state, the female literacy is very low at 22.9 per cent as against 32.7 per cent in the state. Within the district the total literacy varies from as low as 17.4 per cent in Brahmasamudram mandal to as high as 54.6 per cent in Anantapur mandal. Male literacy varies from as low as 25.7 per cent in Brahmasamudram mandal to as high as 64.2 per cent in Anantapur mandal. The female literacy varies from the lowest of 8.7 per cent in Brahmasamudram mandal to a maximum of 54.5 per cent in Anantapur mandal. The level of total literacy in general and female literacy in particular shows that the quality of human resources is moderate to poor in the district.

**Distribution of Working Population:** The working population comprises only 43.4 per cent of the total population and it varies from 31.4 per cent in Anantapur mandal to 52.8 per cent in Bommanahal mandal. The proportion of male workers varies from 49 per cent in Guntakal mandal
to a maximum of 62.5 per cent in Talupula mandal. The proportion of female workers varies from as low as 12.5 per cent in Anantapur mandal to a maximum of 43.7 per cent in Vidapanakal mandal. The proportion of workers is low to moderate in mandals like Anantapur, Guntakal, Setturu, Tadipatri, Gooty, Dharmavaram, Hindupur, Kadiri, Penukonda, Bukkarayasamudram, Kalyandurg, Rayadurg, Madakasira, Amarapuram, Agali, Gorantla, while it is high to very high in mandals like Garladinne, Atmakur, Kudair, Singanamala, Bukkarayasamudram, Pamidi, Uravakonda, Tadimarri, Battalapalli, Kanaganipalli, Bommanahal, Lepakshi, Chilamatturu, Mudigubba, Nallacheruvu, O.D.Cheruvu, Tanakal, Gandlapenta, Kanekal, Peddapappuru, Putluru, Yellanur, Peddavaduguru, Vidapanakal, Kanaganipalli, Bommanahal, Nambulapulakunta and Talupula.

In conclusion it can be said that the mandals with urban centres have recorded relatively high density of population, literacy rates but low proportion of main workers. It shows under-utilisation of available of human resources in these areas. On the other hand in most of the rural mandals population density is moderate to low, literacy is low to very low, but the working population both male and female constitute relatively higher proportion of the total population. Here they are mainly working as agricultural labourers or cultivators. Suitable measures are to be taken to improve the quality of human resources in these areas and to create avenues for work in sectors other than the agricultural sector also.
The population is to be trained to receive the growth signals emanating from the growth centres. Otherwise the objective of establishing a growth centre to kindle the growth process in a background region like Anantapur district, can not be realised.

7.3.2. Agricultural Resource Base

Because of the very low rainfall conditions, Anantapur district is very poor in agricultural resource base. The net cropped area accounts for as much as 51.0 per cent of the total geographical area, but area sown more than once is only 1.6 per cent and net irrigated area is only 15.2 per cent of the net cropped area. The district occupies the second lowest position with respect of irrigation facilities in Andhra Pradesh.

Kharif season is the principal agricultural season in Anantapur district accounting for 88.4 per cent of the gross cropped area, while Rabi season accounts for only 12.6 per cent of the gross cropped area. Groundnut is the most important Kharif crop accounting for as much as 75.7 per cent of the cropped area. The other crops like Paddy, (4.3%), Redgram (4.6%), Korra (2.6%), Jowar (2.1%), Cotton (1.3%), Ragi (1.2%), Bajra (1.0%) and Mulberry (0.4%) are of minor importance during this season.

During the Rabi season, Jowar is the most important crop (21.0%) followed by Paddy (20.0%), Groundnut (17.0%) and Redgram (8.3%).
In terms of production, Groundnut is the dominant crop during Kharif season with 76.9 per cent of the total tonnage followed by Paddy (13.0%), Jowar (3.4%) and Ragi (2.9%).

During Rabi season Paddy is the principal crop with 50.8 per cent of the total tonnage followed by Jowar (23.7%) and Groundnut (21.7%).

When compared to other districts of the state, Anantapur figures prominently only in the case of Groundnut area and production. With respect to other crops its contribution is very insignificant. For instance, Anantapur accounts for 30.3 per cent of the Groundnut area and 25.9 per cent of the production in the state. But in terms of area and production of other crops like Paddy (area - 1.6%; production - 1.5%), Jowar (3.4%; 5.3%), Bajra (4.9%; 3.5%), Ragi (7.9%; 12.5%), Redgram (8.0%; 4.9%), it stands at a low position among the other districts of Andhra Pradesh.

**Paddy:** Average production of Paddy is 1,44,604 tonnes mostly concentrated in mandals like Garladinne, Singanamala, Bukkarayamasudram, Narpala, Guntakal, Pamidi, Peddavaduguru, Dharmavaram, Kambadur, Brahmasamudram, Kanekal, Bommanahal, Roddam, Vidapanakal, Tadimarri, C.K.Palli, Gummagatta and Somandepalli.

**Jowar, Bajra and Korra:** The total production of Jowar is 15,780 tonnes and Bajra is 3812 tonnes and average production of Korra is 11516 tonnes.
Jowar, Bajra and Korra are confined to mandals in black soil belt viz., Atmakur, Kudair, Tadipatri, Yadiki, Peddapappuru, Puttur, Yellanur, Guntakal, Pamidi, Peddavaduguru, Uravakonda, Vajrakarur, Vidapanakal, Beluguppa, Rayadurg, D.Hirehal, Gummagatta, Kanekal, Bommanahal, Gudibanda, Rolla, Agali, Hindupur and Lepakshi. In the rest of the mandals the production of these foodgrains is low to moderate.

Ragi: The total production of Ragi is 21,244 tonnes and it is mostly confined to red soil belt in the following mandals viz., Narpala, Dharmavaram, Kalyandurg, Kambadur, Kundurpi, Brahmasamudram, Settur, Somandepalli, Roddam, Madakasira, Amarapuram, Gudibanda, Rolla, Agali, Hindupur, Parigi, Lepakshi Chilamatturu, Mudigubba and Nambulapulakunta. In the rest of the mandals the production is low to moderate.

Redgram: It is cultivated as a rainfed crop in 51541 hectares with a total production of 8659 tonnes. Though the crop is cultivated over the entire district, its concentration is relatively high in mandals like Kudair, Guntakal, Uravakonda, Vidapanakal, Kalyandurg, Beluguppa, D.Hirehal, Kanekal, Madakasira, Gudibanda, Rolla, Agali, Tadipatri, Peddavaduguru, Ramagiri, Kambadur, Kundurpi, Gummagatta, Bommanahal, Amarapuram and Mudigubba.

Cotton: Cotton is cultivated as an unirrigated crop in 11500 hectares and the average total production is 2352 tonnes. This crop is only confined to
28 mandals i.e., to the black soil belt in the northern part of the district. Tadipatri, Yadiki, Peddavaduguru, Vidapanakal, D.Hirehal, Kanekal, Bommanahal and Pamidi have relatively high production of cotton.

**Groundnut:** It is the most important crop cultivated all over the district. The average gross Groundnut Cropped Area is 6,91,387 hectares of which as much s 96.9 per cent is sown during the Kharif season. The total groundnut production is 5,14,477 tonnes. The production of Groundnut is less than 4000 tonnes in 8 mandals, 4000 - 8000 tonnes in 24 mandals, 8000 - 12000 tonnes in 22 mandals, 12000 - 16000 tonnes in 8 mandals and more than 16000 tonnes in one mandal. High production is noticed in mandals like Raptadu, Bukkarayasamudram, Guntakal, Rayadurg, Uravakonda, Roddam, Madakasira, Mudigubba and Kalyandurg where production is more than 12000 tonnes.

**Mulberry:** It is a minor crop in this district occupying only 0.3 per cent of the gross cropped area, yet is very important commercial crop. This is also cultivated in almost all mandals except Tadipatri, Yellanur, Uravakonda and Vidapanakal, relatively high concentration of crop is found in mandals like Anantapur, Raptadu, Dharmavaram, Battalapalli, C.K.Palli, Kambadur, Kundurpi, Bommanahal, Agali, Hindupur, Parigi, Tadimarri, Roddam, Madakasira, Amarapuram, Lepakshi, Kanaganipalli, Ramagiri, Somandepalli and Rolla.
7.3.3. Livestock Resources

The livestock in the district consists of bovine population like cattle and buffaloes, ovine population like sheep and goats and others mainly consisting of poultry. In the present study different types of livestock are converted into livestock units according to ICAR conversion scale for comparative study among the mandals.

Anantapur has a moderate to high share of livestock population among the districts of Andhra Pradesh. It accounts for 6.4 per cent of the total livestock units in the state and ranks third among the districts. The average density of livestock units in the district is 110/km² as against 120/km² in the state. But the average density in Rayalaseema is only 98/km². Anantapur ranks first among the Rayalaseema districts in terms of total livestock units as well as density of livestock units.

The distribution of livestock units is moderate to high in mandals mostly situated in eastern and southern parts of the district like Anantapur, Singanamala, Narpala, Peddapappuru, Pamidi, Battalapalli, Rolla, Agali, Hindupur, Parigi, Nambulapulakunta, Talupula, Nallacheruvu, O.D.Cheruvu, Amadagur, Gandlapenta, Bukkarayasamudram, Peddavaduguru, Gudibanda and Lepakshi. The total livestock units are less than 5000 in one mandal, 5000 to 10000 in 10 mandals, 10000 to 15000 in 23 mandals, 15000 to 20000 in 22 mandals and more than 20000 in 7 mandals.
Distribution of Milch Stock Units: The Milch stock consists of cows and buffaloes over 3 years of age. The density of milch stock is high in mandals like Bukkarayasamudram, Narpala, Peddapappuru, Putluru, Pamidi, Peddavaduguru, Gudibanda, Rolla, Agali, Hindupur, Parigi, Chilamatturu, Nambulapulakunta, Talupula, Nallacheruvu, O.D.Cheruvu and Gandlapenta.

The total number of milch stock is very low (< 2500) in 1 mandal viz., Raptadu, it is low (2500 - 5000) in 12 mandals, moderate (5000-7500) in 25 mandals, high (7500 - 10000) in 21 mandals and very high (> 10000) in 4 mandals.

Distribution of Ovine Population: The total ovine population is very low (< 5000) in 1 mandal, low (5000 - 10000) in 17 mandals, moderate (10000 - 15000) in 18 mandals, high (15000 - 20000) in 15 mandals and very high (> 20000) in 12 mandals.

Though the density is high to very high in most of the mandals situated in the south-eastern part of the district, the total ovine population is very high in the mandals situated in the central part of the district.

Kudair, Bukkarayasamudram, Peddapappuru, Putluru, Peddavaduguru, Dharmavaram, Battalapalli, C.K.Palli, Kalyandurg, Somandepalli, Roddam, Kothacheruvu, Bukkapatnam, Agali, Kadiri, Nallamada, Nambulapulakunta, Nallacheruvu, O.D.Cheruvu and
Amadagur are the mandals with high density whereas Anantapur, Atmakur, Rolla, Talupula and Gandlapenta are the mandals with very high density of ovine population.

*Distribution of Poultry:* When compared to other districts of the state the density of poultry population is low to moderate in this district. Within the district the density is relatively high or very high in southern and south eastern part of the district. The density is high in mandals like Bukkarayasamudram, Battalapalli, Rolla, Gorantla, Kadiri, Nambulapulakunta, O.D.Cheruvu, Tanakal, Amadagur, Hindupur, Parigi, Lepakshi, Talupula, Nallacheruvu and Gandlapenta.

### 7.3.4. Mineral Resources

The important mineral resources in Anantapur district are limestone, barytes, steatite, white clay, iron ore and gold. Still recently gold mining was done at Ramagiri, but the mines are closed now due to uneconomical production. Diamonds occur in Kimberlite pipes at Vajrakarur and Lattavaram belt. Iron ore occurs in Rayalaseema area. In Tadipatri region rich cement grade limestone is occurring. Black, pink and multi-coloured granites are available in the district which are used in the cutting and polish industry.

### 7.4. Growth and Development of Industries

The growth and development of both small scale and tiny industries and large and medium scale industries is studied separately.
The growth of tiny and small scale industries is studied for the period 1987-88 - 1997-98 with a detailed study related to food products, cotton and other textiles and mineral and ceramic categories. In the case of large and medium scale industries the growth is studied since 1954.

7.4.1. Growth of Tiny and Small Scale Industries:

The number of tiny and small scale industries increased from 408 to 2308 recording a growth rate of 465.7 per cent. The highest growth is recorded by services industry (2460%) followed by cotton and other textiles (1365.6%), metal products etc (566.7%), wood products (518.2%), rubber & plastic and chemicals (440.0%), miscellaneous (315.7%), food products (301.7%), leather (250.0%) and beverages and tobacco (190.0%). In real terms the highest increase is in cotton and textile industry (437) followed by food products (356).

The total investment increased from 45.7 millions to 367.1 millions (703.4%). The highest growth rate is in the services category followed by food products, cotton and other textiles, mineral and ceramic, leather, rubber and plastics, metal products and beverages and tobacco categories. In real times the highest increase is in mineral and ceramic followed by food products industry.

The total number of employees increased from 2113 to 11935 recording a growth rate of 464.8 per cent. The highest growth rate is in the
case of services category followed by cotton and other textiles, wood products and mineral and ceramic, food products, rubber and plastics, leather, metal products and beverages and tobacco. In real terms the highest growth is in the case of cotton and other textiles, mineral and ceramic and food products category.

7.4.2. Growth Pattern of Selected Small Scale and Tiny Industries

**Food Products Industry:** Food products industry is present in 62 out of 63 mandals. The number of units increased from 118 to 474 during 1987-88 - 1997-98 period. But there is a wide spatial variation in the growth rates of units, investment and employment at mandal level.

Very low (<100%) growth rate was recorded in 7 mandals with respect to units in 11 mandals with respect to investment and in 10 mandals in employment. Low growth rate (100% - 200%) was recorded in 17 mandals in the case of units, 14 mandals in the case of employment and 6 mandals in the case of investment.

Moderate growth rate (200% - 500%) was recorded by 21 mandals in the case of units 17 mandals in the case of investment and 16 mandals in the case of employment. High growth (500% - 1000%) rate was recorded in 8 mandals in the case of units in 9 mandals in the case of investment and in 11 mandals in the case of employment. Very high growth rate (>100%) was recorded in 2 mandals in the case of units in 12
mandals in the case of investment in 4 mandals in the case of employment.

7 mandals recorded 0% growth rate and there is no food products industry in 1 mandal viz., Peddapappuru.

Tadipatri, Anantapur, Battalapalli, Garladinne, Guntakal, Yadiki, Dharmavaram, Kundurpi, Penukonda, Gudibanda, Kadiri, Gorantla, Kothacheruvu, Bukkarayasamudram, Chennekothapalli, Puttaparthi are the mandals which recorded high to very high growth rates.

**Cotton and other Textile Industry:** This category has second highest number of units after the food products industry and recorded second highest growth rate in terms of units after services category. The number of units increased from 32 to 429 and the investment from 28.9 lakhs to Rs.420.6 lakhs and the employment from 262 to 2545 during 1987-88 to 1997-98 period.

The industry is present in only 39 out of 63 mandals. In as many as 24 mandals the industry has recorded zero growth rate.

The industry is highly concentrated in mandals like Hindupur, Kadiri, Parigi, Dharmavaram, Rayadurg, Gorantla, Pamidi and Anantapur. While Hindupur, Dharmavaram are leading centres in 1987-88. Hindupur showed higher growth rate than Dharmavaram. In fact
Tadipatri, Gorantla, Kadiri, Parigi have been emerging as important centres.

The locational factor in this case is not the raw material but mostly traditional and agglomeration factors.

**Mineral and Ceramic Industry:** The number of mineral and ceramic based units increased from 51 to 298. The investment increased from 62.8 lakhs to 881.3 lakhs and the number of employees increased from 416 to 2761.

This industry is present in only 26 mandals and in as many as 17 of these mandals, it recorded nil growth rate during study period. The industry is concentrated in a few mandals like Tadipatri, Yadiki and Anantapur.

The location of this industry is mainly determined by the source of raw material as is evident from the location of 231 out of 298 units in Tadipatri and Yadiki mandals.

**7.4.3. Growth and Development of Large and Medium Scale Industries**

The history of large and medium scale industry in the Anantapur district started with the establishment of a cotton spinning mill in the cooperative sector at Guntakal in 1954 with a total investment of Rs.231.0 lakhs and with 1809 employees. Between 1954 and 1998 the number of units increased from 1 to 54 and the investment from Rs.231.0 lakhs to Rs.7.78 billions and the employment from 1809 persons to 12580 persons.
The number of units increased to only 3 by 1968 and investment increased to Rs.1460.0 lakhs and the employment increased to 3389 persons. During the decade 1968-78 the number of units increased to 6, recording a growth rate of 100 per cent, the investment increased to Rs.2325.0 lakhs recording a growth rate of 59.2 per cent and the number of employees increased only to 3841 persons recording a low growth rate of 13.3 per cent.

During the decade 1978-88 the industrial growth picked up in the district. The number of units increased to 23 recording a growth rate of 283.3 per cent. The investment increased to 1.06 billions recording a growth rate of as much as 358.8 per cent and the number of employees increased to 9724 persons recording a growth rate of 153.2 per cent.

During the decade 1988-98, the industrial growth trend was maintained though at some lower rate. The number of units increased to 54 recording a growth rate of 134.8 per cent, the investment has recorded a very high growth rate of 629.1 per cent showing establishment of capital intensive large scale units but the employment has shown only a growth rate of 29.4 per cent.

Growth of Cotton and other Textile Industry: Between 1954 and 1990 the number of units increased from 1 to 11, the investment from Rs.231.0 lakhs to 2741.5 lakhs and the number of employees from 1809 to 6745; it recorded a decadal growth rate of 227.3 per cent in terms of units, 623.7
per cent in terms of investment, 62.0 per cent in terms of employment. Though the growth is appearing quite impressive, the industry is not in healthy condition. As on date only 6 units are working and 5 are under closure.

**Growth of Engineering Industry:** The first engineering industry in the district was established in 1978 with an investment of Rs.27.0 lakhs and provided employment to 110 persons. By 1994 the number of units increased to 7, the total investment reached Rs.10873.6 lakhs and provided employment to 1636 persons. The industry recorded a decadal growth rate of 300.0 per cent in terms of units over 20,000 per cent in terms of investment and 693.6 per cent in terms of employment. But at present only 3 units are working and 4 are under closure.

There is a proposal for constructing 2 more industries at Tadipatri and one unit at Hindupur.

**Growth of Electrical Industry:** The first electrical industry was established in 1978 with a total investment of Rs.728.9 lakhs and provided employment to 252 persons. By 1998, 19 units had been established in this category with a total investment of Rs.1.7 billions and provided employment to 1048 persons. Out of these 19 units, 16 units are wind power generating units, most of them established during 1995 - 1997 period because of the incentives offered by the Government to industries harnessing non-conventional emergency resources. As on today all the 16
wind power units are working. But out of remaining 3 units, two units are closed. There is a proposal to establish 2 more wind power units. This industry recorded a high growth rates of 1800 per cent in terms of units, 2255.7 per cent in terms of investment but relatively low growth rate of 315.9 per cent in terms of employment.

**Growth of Rubber and Plastic Industry:** The first unit in this category was established in 1984 with a total investment of Rs.276.0 lakhs and provided employment to 196 persons. By 1990 the number of units increased to 4 and the total investment to Rs.1284.0 lakhs and the total employment to 435 persons. Out of the 4 units, 1 unit is under closure.

**Growth of Chemical Industry:** The first unit in this category was established in 1982 with a total investment of Rs.188.0 lakhs and provided employment to 137 persons. By 1993 the number of units increased to 4 with a total investment of Rs.1282.0 lakhs and providing employment to 475 persons, but the chemical industry is not in a healthy condition. As two out of 4 industries are under closure. A camphor unit using imported raw material inputs and a calcium carbonate unit using locally available raw material are functioning.

**Growth of Food and Agro-based Industry:** The first food and agro-based industry is established in 1978 with a total investment of Rs.110.0 lakhs and provided employment to 90 persons. By 1991 the number of units increased to only 3, the total investment to Rs.684.0 lakhs, and provided
employment to 618 persons. But as on today one unit, a sugar factory has been closed and the two remaining units are groundnut based industries.

**Growth of Mineral and Ceramic Industry:** The first unit in this category was a gold mining unit established in 1984 with a total investment of Rs.570.0 lakhs and provided employment to 416 persons. By 1996 the number of units increased to 3, with a total investment of Rs.806.7 lakhs and provided employment to 926 persons. But unfortunately 2 out of 3 units are under closure at present.

**Growth of Cement Industry:** The first unit, in this category was established in 1994, with a total investment of Rs.320.0 lakhs and provided employment to 350. A second unit was established in 1998 with a total investment of Rs.38207.0 lakhs and provided employment to 270. Both the units are working and there is a proposal to add one more unit.

**Growth of Printing Industry:** The first unit was established in 1991 (Eenadu daily) and two more units were added recently in 1998.

**7.5 Spatial Distribution of Industries and Regional Disparities**

It is a prerequisite to study the existing spatial distribution of industries and to identify the regional disparities and also to understand the types of different locational factors and their relative importance in the location of industries. In the present study the spatial distribution of
small scale and tiny industries as well as large and medium scale industries, is examined separately.

7.5.1 Distribution of Small Scale and Tiny Industries

The district has a total of 2308 small scale and tiny industries with a total investment of 3671.5 lakhs which provide employment to 11935 persons. There are very high spatial disparities in the distribution of industries at mandal level. It ranges from just a single unit in some mandals to over 300 units in some mandals like Tadipatri and Anantapur. Tadipatri ranks first with as much as 15.2 per cent of the units (350) in the district. 23.3 per cent of the investment (Rs.854.3 lakhs) and 17.7 per cent of the employment (2114). Anantapur mandal ranks second with 13.6 per cent of the units (313) 23.3 per cent of the investment (Rs. 854.7 lakhs) and 15.6 per cent of the employment (1864). Hindupur ranks third followed by Dharmavaram, Kadiri, Rayadurg, Guntakal and Gooty.

The spatial distribution of industries is so uneven that the first three ranking mandals viz., Tadipatri, Anantapur and Hindupur together account for 38.9 per cent of the units, 58.4 per cent of the investment and 44.6 per cent of the employment. The next five mandals viz., Kadiri, Rayadurg, Dharmavaram, Guntakal and Gooty together account for 20.6 per cent of the units, 19 per cent of the investment and 22.6 per cent of the employment. The rest of the 55 of 63 mandals share the remaining 40 per
cent of the units, 22.6 per cent of the investment and 32.8 per cent of the employment.

7.5.2. Category-wise Distribution of Small Scale and Tiny Industries

**Food Products Industry:** The district has a total of 474 food product units with a total investment of Rs. 948.4 lakhs and employment of 2301 persons. This category is present in all the mandals except in one. The number of units ranges from just 1 in some mandals to as high as 47 in Anantapur mandal. The industry is so concentrated in some mandals that only 4 mandals viz., Anantapur, Tadipatri, Dharmavaram and Hindupur together account for 24.0% of the units, 46.9% of the investment and 29.3% of the employment. Apart from these Guntakal, Gooty, Rayadurg, Penukonda, Kanekal, Kadiri, Gorantla, Kothacheruvu, Battalapalli, Pamidi and Kundurpi are the other important mandals with significant concentration of the industry.

**Beverages and Tobacco Industry:** The district has only 29 units distributed in 20 mandals with a total investment of Rs. 24.5 lakhs and 83 employees. Only 1 unit each is found in 15 mandals. Anantapur, Dharmavaram, Bukkapatanam, Hindupur and Kadiri are the important mandals with more than one unit. Guntakal though has only one unit, still accounts for 51.0 per cent of total investment in this category.

**Cotton and other Textile Industry:** The district has a total of 469 units distributed over 39 mandals. In 24 mandals the industry is completely
absent. The industry is highly concentrated in 7 mandals viz., Hindupur, Parigi, Kadiri, Dharmavaram, Rayadurg, Anantapur and Pamidi, which together account for 79.2 per cent of the units 73.6 per cent of the investment and 65.3 per cent of the employment.

**Rubber and Plastics and Chemical Industry:** There are only 81 units in this category with a total investment of Rs. 271.3 lakhs and a total employment of 598 persons. This industry is found only in 20 of the 63 mandals and moreover is highly concentrated in 3 mandals viz., Anantapur, Hindupur and Tadipatri which together account for 65.6 per cent units, 63.1 per cent of the investment and 63.0 per cent of the employment.

**Metal Products, Machinery and Electrical Equipment Industry:** The district has a total of 197 units under this category with a total investment of Rs. 450.7 lakhs and a total employment of 1049 persons. Though the industry is found in 39 mandals, it is highly concentrated in a few mandals. Anantapur alone accounts for 25.4 per cent of the units, 51.3 per cent of the investment and 27.0 per cent of the employment. The second place is occupied by Hindupur (13.2%, 26.6%, 26.7%). The other important mandals are Dharmavaram, Kalyandurg, Tadipatri, Penukonda and Kadiri.

**Mineral and Ceramic Industry:** The district has a total of 298 units with a total investment of Rs.881.3 lakhs and a total employment of 2761
persons. But the industry is highly concentrated in Tadipatri mandal, which alone accounts for 67.0 per cent of the units, 72.7 per cent of the investment and 55.5 per cent of the employment. Yadiki, Anantapur, Guntakal, Hindupur and Gooty are the other important mandals.

**Wood Products Industry:** This industry is present in only 26 mandals. A total of 68 units figure in this category with a total investment of Rs. 54.7 lakhs and total employment of 317 persons. But the industry is highly concentrated in Anantapur, Dharmavaram and Penukonda mandals. The other important mandals are Kadiri, Hindupur, Kalyandurg, Tadipatri and Guntakal.

**Leather Industry:** Leather industry has only 7 units located in 5 mandals with a total investment of Rs.4.4 lakhs and a total employment of 23 persons. Tadipatri ranks first with 3 units, 68.2 per cent of the investment and 22.2 per cent of the employees. Bukkarayasamudram, Dharmavaram, Kanekal and Penukonda are the other mandals with 1 unit each.

**Services Industry:** The industry, located in only 25 mandals, has 128 units with a total investment of Rs.39.7 lakhs and employs 393 persons. It is highly concentrated in a few urban mandals like Anantapur (36 units), Tadipatri (17 units), Guntakal (12 units), Gooty (9 units), Uravakonda (5 units), Dharmavaram (5 units), Kalyandurg (5 units) and Hindupur (4 units).
Miscellaneous Industries: The district has a total of 557 units with an investment of Rs.575.9 lakhs and employment of 1865 persons. These are present in 55 of the 63 mandals. Nevertheless this category is highly concentrated in a few mandals. Anantapur alone accounts for 16.7 per cent of the units, 37.2 per cent of the investment and 24.9 per cent employment. Tadipatri, Hindupur, Kadiri, Rayadurg, Madakasira, Uravakonda, Guntakal, Dharmavaram and Kalyandurg are the other important mandals.

7.5.3. Distribution of Large and Medium Scale Industries

With respect to the large and medium scale industries the district ranks 7th in the state. It has a total of 54 units with an investment of Rs.7.78 billions and employs 12580 persons. Out of 63 mandals in this district only 12 mandals viz., Hindupur, Anantapur, Tadipatri, Penukonda, Guntakal, Ramagiri, Somandepalli, Gooty, Raptadu, Parigi, Bommanahal and Bukkarayasamudram have large and medium scale industries. In terms of number of units, Ramagiri mandal ranks first with 17 units (31.5%) followed by Hindupur (15 units, 27.8%), Anantapur (6 units, 11.1%), Tadipatri (4 units, 7.4%) and Guntakal (3 units, 5.6%). Two units each are located in Bukkarayasamudram and Penukonda mandals and one unit each in the remaining 5 mandals.
In terms of investment Tadipatri ranks first (49.1%) followed by Ramagiri (18.6%), Hindupur (17.9%), Bommanahal (7.0%), Anantapur (1.7%), Parigi (1.6%), Bukkarayamasudram (1.1%) and Penukonda (1.0%).

In the total employment Hindupur alone accounts for 41.3 per cent followed by Guntakal, Tadipatri, Bukkarayamasudram, Anantapur, Penukonda, Ramagiri and Parigi.

7.5.4. Category-wise Distribution of Large and Medium Scale Industries

1. Food and agro-based industry has three units, two oil extraction units (mainly groundnut) located one each in Anantapur and Gooty mandals with a total capacity of 17000 tonnes and one sugar factory located in Parigi mandal.

2. The cotton and textiles industry has 11 units, of which 7 are located in Hindupur and the remaining 4 are located one each in Anantapur, Tadipatri, Guntakal and Penukonda mandals. Out of the 11 units, 5 units are under closure which include 3 cotton spinning mills and 2 silk related units established in Anantapur and Penukonda mandals.

3. The cement industry has two units and both are located in Tadipatri mandal.

4. The rubber and plastic industry has 4 units with 2 units in Hindupur and one each in Raptadu and Somandepalli mandals.
5. Mineral based and ceramic industry has 3 units, one unit each in Hindupur, Ramagiri and Guntakal mandals.

6. The engineering industry has 7 units out of which 3 are located in Hindupur mandal and one unit each in Anantapur, Bukkarayasamudram, Penukonda and Bommanahal mandals.

7. The electrical industry has 19 units out of which 16 are in Ramagiri mandal, 2 units in Hindupur and one unit in Anantapur mandal. The 16 units in Ramagiri mandal are wind power units.

8. The chemical industry has 4 units located one each in Anantapur, Tadipatri, Guntakal and Bukkarayasamudram mandals.

9. The printing industry has 3 units all located in Anantapur mandal.

7.6. Structure of Industries

The industrial structure of Anantapur district is analysed taking two parameters viz., size of the capital investment and products produced. Based on the size of capital investment, the industries are classified into 2 categories: (1) small scale and tiny industries, and (2) large and medium scale industries. Based on the products produced the small scale and tiny industries are grouped into 10 categories. 1) food products, 2) beverages and tobacco, 3) cotton and other textiles, 4) rubber, plastics and chemical, 5) metal products, machinery and electrical and other equipments, 6) mineral and ceramic, 7) wood products, 8) leather, 9) services and 10) miscellaneous.
The large and medium scale industries are classified into 9 categories: 1) food and agro-based, 2) cotton and other textiles, 3) cement, 4) rubber and plastic, 5) mineral based and ceramic, 6) engineering, 7) electrical, 8) chemical and 9) paper, pulp and printing.

7.6.1. Structure of Small Scale and Tiny Industries

Based on number of units food products industry (20.5%) occupies first place followed by cotton and other textiles (20.3%) and mineral and ceramic (12.9%), miscellaneous category accounts for 24.1 per cent of the units. Based on investment, food products category (25.8%), mineral and ceramic (24.0%), cotton and other textiles (11.5%) figure prominently. Based on employment, mineral and ceramic industry (23.1%), followed by cotton and other textile (21.3%), food products (19.3%), metal products (8.8%) figure prominently.

7.6.2. Mandal-wise Structure of Small Scale and Tiny Industry

The industrial structure at mandal level is examined by Doi's combination technique.

The analysis shows that 11 mandals have mono industry combination, 26 mandals have two industry combination, 19 mandals have four industry combination, 6 mandals have four industry combination and only one mandal viz., Anantapur has five category combination.
In 34 mandals, food products industry occupies first place while in 11 mandals cotton and other textiles category occupies first place. Mineral and ceramic industry and metal products and components group occupy first place in two mandals each. Miscellaneous group figures as the first ranking one in 14 mandals, but in 12 of these mandals, food products industry figures as the second rank category. If we ignore miscellaneous category, we can say that food products category is the first ranking one in all these 12 mandals also. This means in 46 out of 63 mandals, food products category figures as the first ranking industry.

7.6.3. Structure of some important categories of Small Scale and Tiny Industries

Food Products Industry: Food products category of small scale and tiny industries comprises the following types of units viz., 1) flour mills, 2) groundnut thrashing units, 3) groundnut decorticators, 4) oil mills, 5) rice mills, 6) frying and flouring of grains, 7) bakery, 8) ice-candy and cool drinks, 9) wet grinders and 10) others.

Out of these floor mills alone accounts for 36.3 per cent of the units followed by groundnut decorticators (17.9%), ice-candy and cool drinks (12.9%), oil mills (9.5%), rice mills (5.7%) and bakery (5.7%). Out of these units, flour mills are present in almost all mandals, groundnut decorticators, oil mills, rice mills, ice-candy and cool drinks and bakeries are present in only a few mandals with large settlements like Anantapur, Tadipatri, Gooty, Pamidi, Guntakal, Kalyandurg, Dharmavaram,
Rayadurg, Kothacheruvu, Penukonda, Hindupur and Kadiri. There is further scope for establishment of some more units in other mandals also.

**Structure of Cotton & Other Textile Industry:** This category includes silk twisting, silk reeling, silk yarn, silk weaving units, cotton reeling, power looms, and hand looms, tailoring and ready-made garments and wood carding. There is only one cotton reeling unit and one wool carding unit in the district. First place is occupied by silk related units like silk twisting, reeling, weaving which alone account for 44.8 per cent (210) of the units. The second place is occupied by tailoring and ready-made garments with 27.9 per cent of the units (131) followed by power looms and hand looms (126, 26.9%). Most of the silk twisting and reeling units are located in mandals like Anantapur, Dharmavaram, Rayadurg, Hindupur and Parigi. There are one or two units in 8 other mandals. Most of the power looms are located in mandals like Parigi, Hindupur, C.K.Palli, Kothacheruvu, Penukonda, Yadiki and Lepakshi. Most of the tailoring and ready-made garments units are located in mandals like Pamidi, Tadipatri, Anantapur, Rayadurg, D.Hirehal, Hindupur and Kalyandurg. In 12 other mandals, there are one or two units. The analysis throws light on the possibility for ready made garments units in other parts of the district also.

**Structure of Mineral and Ceramic Industry:** The following types of units viz., cement bricks, clay bricks, granite slab polishing, cuddapah slab
polishing, stone crushing and road metal, mosaic chips and tiles manufacturing units come under this category. Others like emery stones, lyack bangles, burnt lime, are also part of this category but have only one unit each in the district.

Out of the total number of units, 76.5 per cent (228) are cuddapah slab polishing units mostly located in Tadipatri (191) and to some extent in Yadiki mandals (26). The other important categories are cement bricks (27 units), mostly located in Anantapur (8) and Tadipatri (5) mandals. In 12 other mandals one or two units are present. There are a small number of bricks, mosaic chips and tiles units.

7.6.4. Structure of Large and Medium Scale Industries

The district has a total of 54 large and medium scale industries, with a total investment of Rs.7.7 billions which provide employment to 12580 persons. In this category, the first place is occupied by electrical industry with 19 units (35.2%). Out of this, as many as 16 are wind power units located in Ramagiri mandal. The second place is occupied by cotton and other textile industries with 20.4 per cent of the total units (11), 8.4 per cent of the investment (Rs.656.4 millions) and 53.6 per cent of the total employment (6745) in the district. The engineering industry stands in the third place with 7 units (13%). It has a total investment of Rs.1.0 billions (14%) and provides employment to 1636 (15%) persons. Cement industry has only two units but it accounts for as much as 49.1 per cent of the
investment. The other important categories are food and agro-based (3), mineral and ceramic (3) and printing (3).

Out of 19 electrical industries, 16 are wind power units located in Ramagiri mandal. Out of the other three units, two are located in Hindupur mandal and one in Anantapur mandal. These are engaged in the production of power tools, electrical appliances and bulbs, out of 11 cotton and other textile units, 7 are cotton spinning mills, 3 are silk yarn units and one is cotton textile unit. Out of the 7 engineering industries, except the Allwyn watch making unit located at Penukonda, others are engaged in casting and alloys and steel re-rolling. Out of 4 rubber and plastic industries, one is P.V.C. pipes making unit, two are retrading units and one is plastic unit. Out of 4 chemical units, one is engaged in camphor production and others are producing miscellaneous chemical products. Out of 3 food and agro-based units, two are groundnut oil extraction units and one is sugar industry. Out of 3 mineral based and ceramic industries one is gold mining unit, one is granite polishing unit and one is concrete sleepers manufacturing unit.

The industrial structure reveals that most of the industries are footloose industries, a few are based on the locally available raw materials and as many as 16 are based on the non-conventional energy production (wind power). It is also distressing to note that some of the early industries in electrical, textiles, engineering and food and agro based categories are under closure.
Mandal-wise Industrial Structure

1. **Hindupur Mandal**: Cotton and other textile industry is dominant one accompanied by engineering, rubber and plastic, and electrical category.

2. **Anantapur Mandal**: It has six units have different categories namely food and agro-based, cotton and other textiles, engineering, electrical, chemical and printing. (Two more printing units were established recently which makes to total number of units 8 in Anantapur mandal).

3. **Ramagiri Mandal**: It is dominated by electrical particularly wind power units.

4. **Tadipatri Mandal**: Cement industry is the dominant one accompanied by cotton and other textile and chemical industries.

5. **Guntakal Mandal**: It has one unit each of cotton and other textiles, mineral based and ceramic, and chemical categories.

6. **Bukkarayasmudram Mandal**: It has one unit each of engineering and chemical units.

7. **Penukonda Mandal**: It has one unit each of cotton and other textiles and engineering categories.

8. **Others**: The other mandals like Raptadu (rubber and plastic), Gooty (food and agro-based), Bommanahal (engineering), Parigi (food and agro-based), Somandepalli (rubber and plastic) have only one unit each.
CONCLUSIONS

1. The study region, because of arid and semi-arid conditions, possesses only a limited potential of agricultural resources.

2. Groundnut, cultivated all over the district, is a major raw material source for agro-based industries. Bajra, Jowar, Korra and Cotton mainly confined to the northern part of the district. (Black soil belt), Paddy cultivated in isolated pockets with irrigation facilities, Red gram and Mulberry mainly confined to the red soil belt, are the other agro raw materials available for agro-based industries.

3. The agricultural economy is still retaining most of the characteristics of subsistance agriculture. Due to this most of the agro-based industries are first phase industries mainly processing the products for local consumption. Second phase industries are limited in number and are aiming at only the local markets.

4. Even in the case of groundnut, the most important commercial crop in the district, the surplus is mostly exported in raw state. It is high time to start first phase industries like decorticators and second phase industries like refined oil mills to process the produce locally.

At present the district has two large and medium scale and 45 small scale oil mills, with a total processing capacity of 42 thousand tonnes of oil, which is less than 50 per cent of the produce available in the district, even after leaving 30 per cent of the produce for seed and other purposes. Even conservative estimate shows that there is still
scope for establishing two more large scale oil mills, one each at Kalyandurg and Mudigubba and at least 20 small scale units at various centres like Atmakur, Narpala, Uravakonda, C.K.Palli, Roddam, Vajrakur, Dharmavaram, Belugappa, Rayadurg, Puttaparthi, Madakasira, Mudigubba, Tanakal and Talupula.

6. There is also scope for Dal processing units in mandals like Kudair, Uravakonda, Belugappa, Peddavaduguru, Ramagiri, Gummagatta, Amarapuram and Mudigubba.

7. Cotton and Mulberry cultivation is to be successfully linked to industrialisation with both forward and backward integration encompassing cultivation, ginning mills, spinning mills, silk reeling, weaving, ready-made garments manufacturing and finally marketing activities.

8. Not much attention is given to the development of the poultry and dairy industries in the district. This is another sector where with a little training and networking, the rural population can be made to participate in the industry, with backward integration and urban centres can be part of the industry, by producing value added products by way of forward integration.

9. The district has substantial ovine population with a lot of a scope for mutton, wool, leather and bone-meal industries. The few leather industries in the district are first phase industries preparing and tanning the skins. There is a scope for second phase leather products
industry in the district. It is estimated that the availability of the bones in the district is about 2900 tonnes per annum. There is an ample scope for development of bone-meal industries in the district.

10. Apart from limestone, the district has large reserves of pink and black granites. There is lot of scope for granite polishing industry as a substitute for marble, which is being widely used for flooring in the district.

11. The district has 12 urban centres and 106 rurban centres. Some rurban centres like Narpala, Yadiki, Pamidi, Konakondla, Kambadur, Kanekal, Kothacheruvu, Madakasira, Amarapuram, Parigi, Chilamatturu, Gorantla, Mudigubba, Gunjepalli and Tanakal have more than 10000 population in 1991 census itself.

But the present distribution of industries has shown that most of the large and medium scale and even the small scale and tiny industries are located in around the mandals, having urban centres like Anantapur, Tadipatri, Hindupur, Guntakal, Kadiri and Penukonda. The only exception is Ramagiri mandal in which a gold mine and 16 wind power projects are located because of obvious reasons.

It is high time to take steps to develop a hierarchy of growth foci with tiny industries at the service centres, small scale industries at growth points and large and medium scale industries at growth centres. The incentives offered by the government should be
sometimes location specific within the district with mandal as the unit, to achieve this objective.

12. Growth does not appear everywhere and all at once. It appears in points or development poles with variable intensity. It spreads along diverse channels and with varying terminal effects to the whole economy.

For this to happen, the growth centres should have, propulsive firms. The nature of the industry should be such that it should effectively integrate the economy of the district with both backward and forward integration. Starting of some kind of industry with an employment potential of a few hundreds, to avail the incentives offered by the government, does not serve the purpose of regional economic development. To cite a few, the watch making unit at Penukonda, the bronze icon making unit at Hindupur are the typical examples of non-propulsive firms.

13. The experiences of the policy makers in other areas, is that the objective of over all development of a region cannot be achieved by starting of large scale propulsive firms at the growth centres, unless the hinter land is ready to receive, to assimilate and participate in the growth process. So proper ground work is to be done to train both skilled and unskill man power in the hinterland to participate in the integrated economy by producing the raw material needed, and by
starting industrial units within the ambit of backward and forward integration of the industrial network.

14. It is observed that a large number of large scale units are under closure. For example, 3 cotton spinning mills, 2 units each in silk weaving and reeling, electrical, mineral and ceramic and chemical categories, one unit in food and agro-based category and 4 units in engineering category are under closure. There are reports that a large number of small scale and tiny industries are also under closure. Hence industry specific project evaluation is needed and reasons ascertained for closer of the units, and remedial measures are taken, before taking up a new project. This specifically applies to the silk industry, in which two existing large scale industries are under closure and there is a proposal to start a new unit.

In conclusion, it can be said that if suitable steps are taken to develop a hierarchy of growth foci, with growth centres at the helm having propulsive firms with backward and forward integration of the economy, with the available resources itself a balanced economic development can be achieved and the problems of poverty and unemployment of the district can be solved.