Chapter - II

Geographical Background of Study Area
CHAPTER II

GEOGRAPHICAL BACKGROUND OF STUDY AREA

II.1 INTRODUCTION:

In order to understand water resources and its problems and prospects in the study area, it is necessary to study its geographical background because the geographical features play an important role in the surface and underground water resources. In this context here an attempt has been made to briefly deal with on geographical aspects like location and extent, relief, geology, drainage, soil, climate, temperature, relative humidity, cloudiness, rainfall, wind, vegetation and economy, of the study area, the Belgaum District.

II.2 LOCATION

The Belgaum district is situated in the north western part of the state, covering an area of 13,379 sq kms, accounting for 6.99 per cent of the total geographical area of the state. The district ranks fifth in terms of area of Karnataka and second in terms of population in the state only after Bangalore district. The greatest length from north to south is 160 kms and from east to west 130 kms. (Fig.II.1)

The district is surrounded by Maharastra state in the North, Bijapur district in the east, Dharwad and Uttar Kannad districts in the south, Goa and Maharastra states in the west. The districts of Maharastra state bordering
Belgaum district are are Sangli in the North, Vengurla to the North west, and Kolhapur to the west.

The Belgaum is the district and also divisional headquarters of North-West Karnataka region. The district has been divided into ten talukas for administrative purposes. There are 22 towns and 1164 villages and 19 uninhabited villages in the district. Athani is the biggest taluka with an area of 1995.7 Sq kms and Raibag taluka is the smallest with an area of about 985.8 Sq kms.1

II.3 PHYSIOGRAPHY

There are three major physiographic divisions. They are Malnad, Semi-malnad and Maidan regions. The western portion of the district is with high elevation. The rest of the district is gently sloping to the east and forms a vast plateau studded with solitary peaks. The mean sea level elevation of district varies from 450 to 900 meters. (Fig II.2)

(a) Malnad

It is the mountainous section, also called the Sahyadris. Sahyadris run as North-South belt. The topography on the whole is rounded under the influence of both Dharwar rock complex and heavy rainfall. The tops and upper slopes of the hills are almost bare and lower slopes and valleys are covered by thick vegetation. This Malnad region extends in Khanapur and Western Belgaum district covering about 2500 Sq Kms in the district.

1 Belgaum District Gazetteer.
(b) Semi-malnad

The Semi-Malnad is a transitional zone between Malnad and semi-malnad region. The zone is 10 to 40 Kms wide. The residual ranges of this region merge into maidan with hog back features. This transitional zone extends between Chikodi, West of Hukkeri and East of Belgaum and Khanpur talukas.

(c) Maidan

To the east of semi-malnad it is the undulating plateau region called the maidan. It is marked by low hills in Gokak, Ramdurg and Soundatti, which are developed on Dharwar and Kaladagi rocks. The interesting feature of this region is the Ghataprabha whose river basin is 90 to 120 meters above the neighbouring valley. It is a vast undulating rolling plateau of black soil and stretches over Gokak Raibag and Athani talukas.

II.4 GEOLOGY

Geological formations which are found in the study area are the Dharwar, Gneisses system, Kaladagi series and Deccan Trap. Dharwar formation are seen in Bailhongal and Belgaum and in western portion of Khanapur taluka. Dharwars are represented by quartzite and bonded ferrogeneous quartzite, and phyllites. The schistone rocks are associated with crystalline rocks near Nagargali village in Khanapur taluka and Dolomite sandstone near Bhimagad about 40 kms south west of Belgaum city.

The gneisses system consists of different types of granites and granite-gneisses and forms a greater portion of the archean complex covering southern
part of the district varying in breadth from 3 to 9 kms, Gneisses are exposed in Khanapur and in Bailhongal taluka around Gokak town. The granite-gneisses as found near Khanapur are more or less rounded boulders.

The sedimentary formation of Kaladagi series runs from near Belgaum in an east and east-northeast direction for a length of about 160 kms and width ranging from 42 to 72 Kms. The Kaladagi series consist of two leading varieties of rock formations, mainly quartzite and limestone. The other varieties are conglomerates, shales and sandstones. The quartzites are found in a line that runs from Daddi in the west to Ramdurga in the east. Quartzites uniform in colour, texture pebbly and gritty are exposed over a thickness of 120 meters of which more than 902 meters are exposed in the cliff of “Gokak falls.”

The Deccan trap occupies the rest of the area of Belgaum district. It includes northern part of Gokak, Hukkeri, Chikodi, Raibag and Athani talukas of the district. The depth of the trap increases from east to west.

II.5 SOILS

The study area possesses soils derived from a variety of parental materials. They have been classified into five categories, as follows.

I. Deep black soil
II. Medium black soil
III. Red loamy soil
IV. Mixed red and black soil and
V. Laterite soil
BELGAUM DISTRICT
SOILS

INDEX
- Deep black
- Medium black
- Red loamy
- Mixed red & black
- Laterite

Fig.: 11.3
The deep black cotton soils occur in Chikodi, south of Raibag and north of Gokak taluk. It covers an extent of about 2300 Sq Kms in the district. The medium black soil covers the entire Athani taluka and northern part of Raibag taluka. It is also found extensively in northern Belgaum, northern Bailhongal and southeast Hukkeri talukas of the district. It covers an area of about 6000 Sq Kms in the district. (Fig II.3)

Red loamy soil is confined only to the southern Khanapur and south-west of Belgaum and covers an area about 1200 Sq Kms in the district.

The medium red and black soil i.e. mixed soil are confined to only three talukas of the district. Viz. Ramadurg, eastern part Bailhongal and northern part of Soundatti taluka. It covers about 2600 Sq Kms in the district.

The lateritic soil is confined only to the western part of Khanapur taluk which comes under Malnad, which receives heavy rainfall. It covers about 1000 Sq Kms in the district.

II.6 DRAINAGE

The drainage pattern of the study area closely follows the geological formations of the district. The district lies in the Krishna basin. The district is drained by river Krishna in the north, and its tributaries Ghataprabha in the center and the Malaprabha in the south.

The river Krishna originates in the Mahadev ranges of western ghats in Maharashtra state at an attitude of 1365 meters from sea level, just to north of Mahabaleswar, about 65 kms from Arabian sea and flows across the peninsular
for a length of about 1,400 kms, through Maharashtra, Karnataka and Andhra Pradesh. The river flows into the Bay of Bengal.

The river, Krishna enters into the district at Mangavati village, about 35 kms west of Chikodi town and runs for about 70 kms in the district. The river occasionally swells into floods during monsoons. It passes through two talukas of the district. Viz. Raibag and Athani, where lift irrigation projects are found.

Ghataprabha

The river Ghataprabha drains in the central parts of the district. It takes its origin in Sundergad of western ghats in Maharashtra state, at an altitude of 858 meters. The Ghataprabha river enters in the district near the village called Sedhial south of Chikodi. Here it is joined by the tributary Hiranyakesh. It passes through Hukkeri and Gokak talukas of the district. Near Gokak, the tributary Markendaya joins and together they make a beautiful waterfalls called "Gokak falls". Near Hidakal of Hukkeri taluka a dam has been constructed across the river. The total catchment area the river is about 8829 Kms in the district. The river enters Bijapur district and joins Krishna river near Bilagi village in Mudhol taluka.

Malaprabha

The Malaprabha river has its origin at Kanakumbi near Chorla ghat in western ghat of Khanapur taluka, at an altitude of 793 meters. The river Malaprabha flows almost in a north-easterly direction and passes through Khanapur, Bailhongal, Savadatti and Ramadurga talukas of the district. At about
six kms north of Savadatti it passes through the famous gorge called Naviltheertha gorge. A dam has been constructed on this river near this site providing irrigation to four districts viz. Belgaum, Dharwad, Bijapur and Bagalkot districts. It joins Krishna at Kudalsagam in Bagalkot district.

There are also other small streams whose water is used for irrigation and other purposes.

II.7 CLIMATE

Climate is one of the important factors through which the activities of mankind are very much influenced on the surface of the earth. The climate of any locality is not determined by single factor/element, but rather by the combination of climatic elements and of weather types prevailing there. The climate of Belgaum district is characterized by general dryness except during the monsoon season. The climate of the district is covered by the Koppen’s and Thornwaite’s classification of AW and Caw respectively. These symbols emphasize a distinct dry season combined with a moderate annual range of temperature.

The year is divided into four seasons, the hot weather period (summer season) from March to May is followed by southwest monsoon season, which lasts up to the end of September. October and November constitute the retreating monsoon or north-east monsoon season. The cold weather period is from December to February.

\[\text{\textsuperscript{2}}\text{ Trewartha G.T (1954): Introduction to Climate, New York, P 223.}\]
(a) Temperature

There are two meteorological observation stations in the district. One is at central Telegraphic office and other at Sambra. The former collects the data on climatic phenomena of malnad and semi-malnad and other of maidan area.

After February there is a steady increase in the temperature. April is generally the hottest month, with mean daily temperature maximum of 35.7°C and mean daily minimum of 19.5°C (FigII.4). On the whole the summer season is milder than the areas surrounding district. But in the eastern part of the district the temperature in summer is higher. On some days the summer temperature even rises upto 41.0°C.

There is a slight increase in the day temperature in the month of September, but at night, temperatures are cooler from September onwards. December is the coldest month with mean daily maximum temperature of 29.3°C and mean daily minimum at 13.0°C.

(b) Relative humidity

Relative humidity refers to water vapour present in the atmosphere and it is the single most important component of the weather and climate. The relative humidity is very high during the monsoon. It starts to increase from March to August, and then onwards there is a decrease. The driest part of the

---

2 Trewartha G.T (1954): Introduction to Climate, New York, P 111.
BELGAUM DISTRICT
ANNUAL DISTRIBUTION OF TEMPERATURE

MEAN DAILY MAXIMUM TEMPERATURE
MEAN DAILY MINIMUM TEMPERATURE

TEMPERATURE IN °C

RELATIVE HUMIDITY AT 8.30 HRS
RELATIVE HUMIDITY AT 17.30 HRS

RELATIVE HUMIDITY IN %

RAIN FALL IN MM

Fig.: II.4
district is from January to March. It is one of the important factors influencing the location of textiles, handloom and powerlooms in the district, which require a minimum of 50 per cent to 60 per cent of relative humidity to establish the industries. In this respect western part of Belgaum district is suitable. (Otherwise artificial humidities have to be used) (Fig II.4).

(c) Cloudiness

It is quite natural that during the southwest monsoon season period, the skies are heavily clouded or overcast. Cloud cover decreases during the post-monsoon season. During the period from December to February the sky is generally clear. The cloud cover starts increasing from mid April till the end of the monsoon season.

(d) Rainfall

The district is exposed to both the monsoons. It receives most of the rainfall from the southwest monsoons. Monsoons usually start from the mid of June (Fig II.5). The monthly average rainfall of Belgaum district is given below (Table II.1).
Table No. II.1

CLIMATIC ELEMENTS OF BELGUM DISTRICT

<table>
<thead>
<tr>
<th>Name of Element</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean daily maximum Temperature of Belgaum (in °C)</td>
<td>30.1</td>
<td>32.2</td>
<td>35.0</td>
<td>35.7</td>
<td>34.0</td>
<td>27.5</td>
</tr>
<tr>
<td>Mean daily minimum Temperature of Belgaum (in °C)</td>
<td>14.0</td>
<td>15.1</td>
<td>18.0</td>
<td>19.5</td>
<td>20.6</td>
<td>20.6</td>
</tr>
<tr>
<td>Highest Maximum Temperature ever recorded (in °C)</td>
<td>35.7</td>
<td>37.2</td>
<td>39.4</td>
<td>40.5</td>
<td>40.8</td>
<td>37.9</td>
</tr>
<tr>
<td>Lowest Minimum Temperature ever recorded (in °C)</td>
<td>7.2</td>
<td>6.7</td>
<td>10.0</td>
<td>12.8</td>
<td>15.6</td>
<td>16.1</td>
</tr>
<tr>
<td>Date</td>
<td>8-1946</td>
<td>4-1901</td>
<td>8-1958</td>
<td>3-1955</td>
<td>3-1917</td>
<td>29-1912</td>
</tr>
<tr>
<td>Relative Humidity at 8.30 hrs/ of Belgaum district in %</td>
<td>66</td>
<td>61</td>
<td>62</td>
<td>72</td>
<td>78</td>
<td>85</td>
</tr>
<tr>
<td>Relative Humidity at 17.30 hrs/ of Belgaum in %</td>
<td>30</td>
<td>30</td>
<td>32</td>
<td>46</td>
<td>58</td>
<td>76</td>
</tr>
<tr>
<td>Mean wind speed in km / Hrs.</td>
<td>6.4</td>
<td>6.6</td>
<td>7.2</td>
<td>8.5</td>
<td>10.6</td>
<td>13.6</td>
</tr>
<tr>
<td>Monthly Rainfall of Belgaum District in mm (Average 50 years)</td>
<td>3.6</td>
<td>1.3</td>
<td>9.9</td>
<td>43.2</td>
<td>66.5</td>
<td>190.7</td>
</tr>
</tbody>
</table>

Contd...
<table>
<thead>
<tr>
<th>Name of Element</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean daily maximum Temperature of Belgaum</td>
<td>25.2</td>
<td>25.6</td>
<td>27.0</td>
<td>30.1</td>
<td>29.3</td>
<td>29.3</td>
<td>30.1</td>
</tr>
<tr>
<td>Mean daily minimum Temperature of Belgaum</td>
<td>19.8</td>
<td>19.4</td>
<td>19.0</td>
<td>18.6</td>
<td>17.1</td>
<td>13.9</td>
<td>18.0</td>
</tr>
<tr>
<td>Highest Maximum Temperature ever recorded (in °C)</td>
<td>33.6</td>
<td>31.7</td>
<td>34.3</td>
<td>30.0</td>
<td>34.1</td>
<td>34.6</td>
<td></td>
</tr>
<tr>
<td>Lowest Minimum Temperature ever recorded (in °C)</td>
<td>17.2</td>
<td>15.7</td>
<td>15.0</td>
<td>12.0</td>
<td>9.3</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>18-1912</td>
<td>8-1957</td>
<td>30-1902</td>
<td>30-1906</td>
<td>28-1964</td>
<td>4-1970</td>
<td></td>
</tr>
<tr>
<td>Relative Humidity at 8.30 hrs / of Belgaum District in %</td>
<td>90</td>
<td>92</td>
<td>89</td>
<td>81</td>
<td>70</td>
<td>67</td>
<td>76</td>
</tr>
<tr>
<td>Relative Humidity at 17.30 hrs / of Belgaum (%)</td>
<td>92</td>
<td>87</td>
<td>81</td>
<td>64</td>
<td>47</td>
<td>35</td>
<td>57</td>
</tr>
<tr>
<td>Mean wind speed in km / Hrs.</td>
<td>14.4</td>
<td>13.5</td>
<td>9.9</td>
<td>8.1</td>
<td>6.8</td>
<td>5.5</td>
<td>9.2</td>
</tr>
<tr>
<td>Monthly Rainfall of Belgaum District in mm (Average 50 years)</td>
<td>459.0</td>
<td>247.1</td>
<td>118.9</td>
<td>111.0</td>
<td>40.6</td>
<td>11.4</td>
<td>108.6</td>
</tr>
</tbody>
</table>

Source: India Meteorological Department Office, Bangalore

(e) Winds

Winds are generally light. Some increase in velocity is experienced during the late summer and monsoon seasons. From April to September winds blow from south-west or west direction. In October the direction is from north and east. During November and December, the winds are mostly from northeast or east.

The velocity of the wind starts to accelerate from January to August, with 6.4 Kms/hr to 14.4 kms/hr respectively, and from August it starts to decrease.
The lowest velocity of the wind for the entire 50 years period is found in December 5.5 km/hr, and the highest is in the month of July i.e., 14.4 km/hr. (Table II.1)

The main source of precipitation is the monsoons, which break in the study area usually in the middle of June. The highest amount of rainfall recorded is in the month of July 459mm.

On average mm of rainfall is received in the southwest monsoon period. It accounts per cent of annual rainfall.

II.8 VEGETATION

The Belgaum district ranks 5th in area under forest among the various districts of Karnataka. The forest area is about 1.89 lakh hectares. It accounts for about 14.32 per cent of total geographical area of district. There are three major types of natural vegetation in the district.

1) Semi-evergreen
2) Moist-deciduous
3) Scrub and thorny forests.

The semi evergreen forests are found in the places where the rainfall is 150 to 250 cm. It cover an area of about 62.31 hectares distributed in forest area of Jambhoti, Kanakumbi and parts of Hemmadge area of Khanapur taluka. The important varieties of trees of these forests are ghoting, apta, mango, boldevoder, bipte, sawar, and sativa. The wood of forests is used for making ply-wood, matchwood, and in packaging industries. (FigII.6)
The moist-deciduous forests are found in the area where rainfall is more than 100 cm. This type of forest spread over 38,574 hectares in Khanapur taluka. Rosewood, teakwood, honne, matri and nandi are commonly seen in these forests.

The scrub and thorny forests are found in places where the rainfall is below 60 cm. This type of forest is present in the eastern and northwestern parts of Belgaum district, and spreads over 91,386 hectares in Belgaum District.

II.9 DEMOGRAPHIC FEATURES

Human resources are important and play an important role in state's economy. In recent years pressure on the natural resources is increasing due to rapid growth in population, particularly in the developing countries, and India or Belgaum is no exception to this.

Belgaum district has a population of 42,07,200 (2001 census). The district has second highest number in the state, with 7.97 per cent of State's total population. The growth rate of population of the district during 1991/2001 was 17.40 per cent as against 17.25 per cent of the States growth rate. (Table II.II) This growth rate of population has decreased from 20.30 per cent between 1981/91. Initially there was negative growth observed during period of 1901/11 - 4.19 per cent it was mainly due to the natural hazards and famines and epidemics. After that from 1921 to 1941, the population growth rate was slow but positive. From post-Independence period the growth rate has become faster. It is due to better
health and medical facilities, improved nutrition, decrease in death rate, industrialization, development of agriculture and urbanization. During 1971-81 decade the district experienced the highest growth rate with 22.94 per cent. The taluka-wise decadal growth was least in Ramdurg taluka (11.81%) and maximum growth was observed in Raibag (22.79%) in 2001.

Table No. II.II

Growth of population in Belgaum district and Karnataka

<table>
<thead>
<tr>
<th>Decade</th>
<th>Belgaum Percentage</th>
<th>Karnataka State Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1901-11</td>
<td>-4.19</td>
<td>3.60</td>
</tr>
<tr>
<td>1911-21</td>
<td>9.46</td>
<td>-1.09</td>
</tr>
<tr>
<td>1921-31</td>
<td>13.64</td>
<td>9.38</td>
</tr>
<tr>
<td>1931-41</td>
<td>13.97</td>
<td>11.09</td>
</tr>
<tr>
<td>1941-51</td>
<td>16.71</td>
<td>19.36</td>
</tr>
<tr>
<td>1951-61</td>
<td>20.53</td>
<td>21.57</td>
</tr>
<tr>
<td>1961-71</td>
<td>22.16</td>
<td>24.22</td>
</tr>
<tr>
<td>1971-81</td>
<td>22.94</td>
<td>26.75</td>
</tr>
<tr>
<td>1991-2001</td>
<td>17.40</td>
<td>17.25</td>
</tr>
</tbody>
</table>


The density pattern is influenced by fertility of soil, rainfall, climate, irrigation facilities, communication, natural resources, industries and employment facilities. The density of population in the district was 314 (2001) persons per sq kms (FigII.7). It quite high when compared to that of the state's density (275). The highest density is observed in Belgaum taluka with 780
BELGAUM DISTRICT
DENSITY OF POPULATION

INDEX

III | < 200 per Sq. kms
II  | 200 - 400
I   | > 400

Fig.: II.7
persons due to presence of Belgaum city. The lowest density is observed in Khanapur taluka with 139 persons as a large part of the taluka is mountainous and is under forest cover.

75.93 per cent of total population is concentrated in rural areas. The remaining 24.06 per cent is urban population, concentrated in 25 urban centers. The highest urban population observed is naturally in Belgaum Taluka (62.11%). The Belgaum city is the 3rd in population among urban centers of Karnataka State. The least urbanised is Athani taluka with only 8.87 per cent of urban population.

The sex-ratio was 959 females per 1000 males. It is low when compared to state sex-ratio (964) of the state. The taluka wise sex-ratio of the district varies. The highest 989 was observed in Khanapur taluka (Table II.III). This is because of many of the men have migrated to nearby urban centers in search of employment. The lowest sex-ratio observed is in Raibag with 943.

The literacy ratio of the district is 64.42 per cent, it is low when compared to state literacy rate of 67.02 per cent. The district male literacy rate was 75.89 per cent and for females 52.53 per cent. The taluka wise literacy rate varies with lowest in Ramadurg taluka with 55.05 per cent, the highest literates are observed in Belgaum taluka with 78.31 per cent due to urban influences.
Table II.III
Population and Rural, urban, density, sex ratio, Literacy and Decadal growth of the Belgaum district.

<table>
<thead>
<tr>
<th>SL No.</th>
<th>Taluka's</th>
<th>Total</th>
<th>Rural %</th>
<th>Urban %</th>
<th>density</th>
<th>Sex ratio</th>
<th>Literacy %</th>
<th>Decadal Growth 1991/2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Athani</td>
<td>4614</td>
<td>91.13</td>
<td>8.87</td>
<td>231</td>
<td>949</td>
<td>61.40</td>
<td>20.72</td>
</tr>
<tr>
<td>2</td>
<td>Bailhongal</td>
<td>3564</td>
<td>87.87</td>
<td>12.13</td>
<td>318</td>
<td>969</td>
<td>63.37</td>
<td>14.89</td>
</tr>
<tr>
<td>3</td>
<td>Belgaum</td>
<td>8151</td>
<td>37.89</td>
<td>62.11</td>
<td>786</td>
<td>946</td>
<td>78.31</td>
<td>20.63</td>
</tr>
<tr>
<td>4</td>
<td>Chikodi</td>
<td>5617</td>
<td>80.72</td>
<td>19.28</td>
<td>442</td>
<td>950</td>
<td>68.83</td>
<td>15.19</td>
</tr>
<tr>
<td>5</td>
<td>Gokak</td>
<td>5299</td>
<td>76.21</td>
<td>23.79</td>
<td>342</td>
<td>992</td>
<td>55.90</td>
<td>19.17</td>
</tr>
<tr>
<td>6</td>
<td>Hukkeri</td>
<td>3571</td>
<td>85.52</td>
<td>14.48</td>
<td>360</td>
<td>967</td>
<td>62.09</td>
<td>15.07</td>
</tr>
<tr>
<td>7</td>
<td>Khanapur</td>
<td>2432</td>
<td>90.58</td>
<td>9.42</td>
<td>139</td>
<td>980</td>
<td>65.99</td>
<td>12.22</td>
</tr>
<tr>
<td>8</td>
<td>Raibag</td>
<td>3475</td>
<td>89.69</td>
<td>10.31</td>
<td>362</td>
<td>943</td>
<td>58.68</td>
<td>22.79</td>
</tr>
<tr>
<td>9</td>
<td>Ramdurg</td>
<td>2272</td>
<td>83.89</td>
<td>16.11</td>
<td>187</td>
<td>971</td>
<td>55.05</td>
<td>11.85</td>
</tr>
<tr>
<td>10</td>
<td>Saundatti</td>
<td>3117</td>
<td>87.74</td>
<td>12.26</td>
<td>197</td>
<td>967</td>
<td>55.68</td>
<td>13.67</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>42072</td>
<td>75.93</td>
<td>24.07</td>
<td>314</td>
<td>959</td>
<td>64.42</td>
<td>17.40</td>
</tr>
</tbody>
</table>


II.9 ECONOMIC BASE

Natural resources play a key role in economic development of a country or region. In the this context Belgaum district is deficient in forest, and mineral resources. District is endowed with rich water resources. The Krishna, Ghataprabha and Malaphrabha together drains 2/3 of district area. The district lies in cotton belt and has many cotton based industries. It has also some agro-based industries.

About 14.32 per cent of district’s areas is covered by forest and is less compared with state’s average of 16.07 per cent forest cover area. This is not suitable for the development forest based industries. The western portion of district i.e Khanapur and Belgaum talukas are the only two talukas with any sizable forest resources, with trees like teak, matti, honne etc., Rest of the
district's area is covered by scrub forest. In recent years forest department with its several schemes has afforested various parts of the district.

The district has mineral resources like bauxite, iron-ore, manganese, gold, clay deposits, copper, limestone, building stones and moulding sand, of which bauxite is the only mineral mined, while the remaining minerals are not mined as they are not of economic importance.

About 64 per cent area is cultivated of which 40 per cent is irrigated. The major sources of irrigation are canal (29.79%), tube-wells (16.90%), wells (27.53%), and tanks (1.24%) and lift irrigation (10.06%) and other sources (14.50%). The principal crops that are grown in the district are paddy, jowar, wheat, ground nut, cotton, sugar cane and pulses. The paddy is cultivated in western parts of district i.e, Khanapur, and Belgaum talukas. Jowar is cultivated as a dry crop extensively in the eastern parts of the district. Sugar cane is cultivated where Irrigational facilities are available, and it is here that 9 out of 35 states'sugar industries are located in the district. Cotton is also cultivated in the district.

The land use: The net sown area is 64 per cent, (FigII.8) land not suitable for cultivation is 8.43 per cent, cultivable wasteland 2.88 per cent, and forests area 14.16 per cent.

Belgaum district has got prominent place for industrial development in the State. There are 611 industries in the district, wherein 58 thousand persons are employed. The major industries are 1 Aluminum factory at Belgaum city, 9
BELGAUM DISTRICT
GENERAL LANDUSE PATTERN

INDEX
- Arable land
- Fallow & Pasture land
- Forest land
- Waste & uncultivated land

Fig.: II.8
sugar industries with distilleries, 6 chemical and 57 engineering industries. Beside this there are 25,094 small scale industries in the district.

Transportation and communication are also important for the development of the region. The district is fortunate to have good transportation facilities. The Pune - Bangalore National Highway No.4, passes through the district for about 201 kms passing through Bailhongal, Belgaum, Hukkeri and Chikodi talukas. The total length of state highways is 732 kms. The total length of district roads in the district is 2340 kms. There are 25 Railway stations. The length of railway lines is 220 kms (Broad gauge). The Sambra (Belgaum) is connected by air service with Mumbai and Bangalore.

Communication facilities are fairly adequate, there are 725 post offices and 532 Telegraphic offices and 179 Telephone exchanges. The total phone connections in the district is 1,23,337 (2001). There is one HPT TV station at Belgaum.

Besides this, the Belgaum city is administratively prominent place with many divisional offices located in Belgaum city. The Army headquarters for Maratha Infantry and Air force base at Sambra are important centers of defense in the district.