Chapter 4

Description of the Study Area
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Tiptur is a taluk and sub-divisional headquarter of Tumkur district, Karnataka. It is at a distance of 141 Km from Bengaluru. The Bengaluru-Honnavara National Highway and Bengaluru –Miraj broad gauge railway line passes through Tiptur.

The town is famous for its coconut cultivation and marketing and is also called Kalpataru Nadu. Tiptur is renowned for copra products. The town with a population of 2,17,124 (2011 census) and municipal area of 11.6 Sq.Kms is governed by city municipal council (CMC).

Being the headquarter of the revenue sub-division (named after Tiptur) comprising the taluks of Tiptur, Turuvekere and Chikkanayakanahalli, the town is an administrative center also. Tiptur lies at 13° 16' north latitude, 76° 29' east longitude and is at an altitude of 850.30 meters, above sea level.

Physiography

Karnataka state is situated in the southern peninsular India. Tiptur taluk is about 75 Kms from Tumkur district and covers an area of about 758.5 Sq.Km. The average temperature ranges from 11°C in winter and 38°C during summer. Average rainfall of Tiptur town is 503 mm and its geographical area is 76,510 ha.
Land use

Tiptur is located on a flat landscape with plain land area and it is a commercial town. The origin of the town is influenced by the extent of commercial hinterland. The surrounding villages are mainly dependent on coconut cultivation and other crops based on rainfall and ground water resource. A few coconut and other agro based industries are established in and around the town.

It is estimated that the total geographical area of Tiptur town is 76,510 hectares, out of which 65,788 hectares is total cultivated land, barren land is 372 hectares, trees and grooves 4,604 hectares and fallow land, permanent pasture, non-agriculture land and forest 1186 hectares, 7010 hectares, 7406 hectares and 595 hectares respectively and cultivated waste land is 1920 hectares.

Considering the physico-agronomic regions and sub-regions into which the state is classified, it may be observed that Tiptur is in sub-region 3 of the southern maidan, the tank country of Karnataka with cool temperature, receiving rather sparse and variable rainfall (503 mm). In particular, the town is located in the heart of coconut belt of the sub-region where the crops grown are predominantly ragi, jowar, other cereals, pulses and oil seeds. Tiptur is comparatively nearer to the Malnad, which is noted for its rice and spice economy and enjoys moderate rainfall fostering the growth of rice vegetation and abounds in mineral wealth (Jagadeesh, 2003).
Table-1. Land use pattern of Tiptur Taluk in hectares

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Land use pattern</th>
<th>Hectares</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Total geographical area</td>
<td>76510</td>
</tr>
<tr>
<td>2</td>
<td>Total cultivated land</td>
<td>65788</td>
</tr>
<tr>
<td>3</td>
<td>Barren land</td>
<td>372</td>
</tr>
<tr>
<td>4</td>
<td>Non agricultural land</td>
<td>7406</td>
</tr>
<tr>
<td>5</td>
<td>Permanent pasture</td>
<td>7010</td>
</tr>
<tr>
<td>6</td>
<td>Cultivated waste land</td>
<td>1920</td>
</tr>
<tr>
<td>7</td>
<td>Fallow land</td>
<td>1186</td>
</tr>
<tr>
<td>8</td>
<td>Trees and Grooves</td>
<td>4604</td>
</tr>
<tr>
<td>9</td>
<td>Forest</td>
<td>595</td>
</tr>
</tbody>
</table>

Source: District Statistical Office, Tumkur

Soil and geology

Tumkur district is situated right on Archean complex where rock formations are represented by crystalline gneisses and the granite gneisses. The newer granites of particular interest is the schist belt that passes to the east of Chikkanayakanahalli and sends out a branch near Banasandra extending over 30 to 40 Kms. This belt is composed of chloritic schist, micaceous schist, quartzite, lime stone and ferruginous quartzites.

The minerals of economic importance in Tiptur taluk are manganese in Karekurchi village and steatite (or soap stone used in the manufacture of household utensils and the rubber and cosmetic industries) in the vicinity of Birasandra, 28 Kms east of Tiptur town.
The general terrain of the town is flat with a gentle slope towards west to south side of town leading to Nagarakere tank, Doddaballapura and its surrounding consists of dolomite rock and granite at kera rock quarry. The soil is predominately gravellised red soil.

Tiptur taluk is underlain by Meta sediments (limestone) and Meta volcanic (quartzite and schists) of Dharwar group, peninsular gneisses and clospet granite of pre-cambrian age, which are intruded by pegmatite and dolerite dykes.
The alluvial patches are generally seen along the major streams as narrow discontinuous patches particularly in granite country. It comprises medium to coarse grained sand with silt and clay at many places and is largely controlled by topography of the basement crystalline in the area.

**Meteorology**

Tiptur enjoys a moderate tropical monsoon climate. The climatic condition in Tumkur district is broadly described as follows: the period from March to May is one of continuous rise in temperature; the rainy season commencing from mid June lasts till October; the winter season sets in during November. Occasional showers accompanied by gusty winds, thunder and lightning occur during April and May. The area receives rainfall under the influence of south west monsoon from June to October. Humidity is at its peak during the month of July and August and is minimum during winter months of January and February. Temperature rises after March and the months of April and May are the hottest months of the year with mean daily maximum temperature going upto 37°C to 38°C. With the onset of monsoon, by the end of October, there is a sharp decrease in temperature. December and January are the coolest months of the year, with mean temperature of about 11°C to 12°C. The total annual rainfall is about 503 mm. About 83% of the annual rainfall is received during rainy season.
Fig-4. Rainfall data of Tiptur Taluk during the period 2000 -2012

Source: District Statistical Office, Tumkur

Water resources

Ground water occurs in weathered and jointed zones of gneisses, granites, schists and alluvium in unconfined or water table conditions whereas it occurs in semi confined to confined condition in fractured formation. Unconfined aquifer system is developed by dug wells, shallow bore wells and filterpoints. This zone extends down to 13-20 mbgl depth. The yield range of irrigation dug well in alluvial is 300-600 m³/day whereas the same in weathered formation is 11 to 250 m³/day.
As the filter points are located in alluvium of limited thickness, many of them become dry during summer. Due to over exploitation in many pockets, this zone is getting dried up gradually. Semi confined aquifer is formed due to fractures in hard formation. This aquifer system is developed by bore wells ranging in depth up to 200 m. Its yield ranges up to 1200 m$^3$/day and specific yield ranges from 2 to 173 lpm/m.

Fig-5. Geology Map of Tiptur Taluk

Source: Department of Geology, Tumkur
Fig-6. Drainage Map of Tiptur Taluk

Source: Department of Geology, Tumkur
Fig-7. Transport Map of Tiptur Taluk

Source : Department of Geology, Tumkur
Fig-8. Forest Map of Tiptur Taluk

Source: Department of Geology, Tumkur