CHAPTER 2

STUDY AREA
Chikmagalur District of Karnataka State is known for its unique flora and fauna, rich in traditional knowledge and practices. This district is part of the Western ghats, which is one of the world's hotspots of the country. The district is experiencing alarming rate of deforestation and degradation causing threat to the biodiversity. The district lacks primary data on the spatial extent and distribution of vegetative cover, detailed knowledge of plant wealth, ethnobotanical knowledge etc. In view of this, the present investigation has been taken up in Chikmagalur district.

Location and extent

Chikmagalur district is situated in the south western part of Karnataka state between 12° 54' 42" - 13° 53' 53" North latitudes and 75° 04' 46" - 76° 21' 50" East longitudes. The greatest length from East to west is 138.4km and greatest breadth from North-south is 88.5km. The district is bounded by Tumkur district in the East, Hassan in the South, Dakshina Kannada in the west, Chitradurga in the Northeast and Shimoga in the North. The total geographical area of the district is 7201 sq Km consisting of seven taluks namely Chikmagalur, Kadur, Koppa, Mudigere, Narasimharajapura, Sringeri and Tarikere. The district area is represented in Survey of India topographical map numbers 48 O and 57 C. The spatial location of the study area is depicted in plate 3.

Physiography and drainage

The district can be broadly classified into two distinct physiographic divisions viz, highland area with lot of hill ranges and "maidan" (plain area). The mountains range forms a central ridge running north and south, with a loop or circle on either side. On the west of the ridge is the valley in which lies Sringeri, enclosed with a girdle of mountains. To the east of it, beyond the right bank of Bhadra, is the Jagara valley, which is surrounded by the Bababudan mountains. The Bababudan range is the loftiest range on the Karnataka tableland and is situated in the centre of Chikmagalur district. This range is like that of a horseshoe, with the opening to the northwest, with a tremendous ridge of 1829 m above the sea level.

The highest peak in the district and Karnataka is the Mullaiyanagiri, which rises to 1927 m and is situated in the south. Another peak in the district is the Kudremukh
LOCATION OF
THE STUDY AREA

Karnataka State
Geographical area : 191,791 Sq. Km
Number of Districts : 27
No. of W.Ghat Districts : 9
Recorded Forest area : 20.18%
No. of W.L.S : 21
No. of N.P : 5

Chikmagalur District
Geographical area : 7201 Sq.km
No. of Taluks : 7
Recorded Forest area : 30.26%
No. of W.L.S : 2
No. of N.P : 1
Geo. Co-ord. : 12° 34' 42" - 13° 53' 33"
75° 04' 46" - 76° 21' 50"

Plate: 3. Study Area
signifying 'Horse face' mountain, which is 1896 m and next to it is Baba Budan giri with 1895 m, which is the source of Avati and veda rivers. On the north-east, lies Kallahattigiri which is 1877 m in height and has Hebbe falls with a descent of about 600ft. Ballalalayana durga is a fortified hill on the Western ghats with 1507m height and is situated on the northwest of Mudigere taluk. Other hills are Mertigudda near Kalasa (1662 m), Gangamoola in Varahaparvata (1458 m), Woddinagudda (1526 m) and Lakkeparvata (1421 m).

The district is drained by many rivers which originate in the Western ghats. The principal rivers are the Tunga, Bhadra and Vedavathi, which are the tributaries of river Krishna. Other rivers which originate in the district are the Hemavathya, Yagachi, Veda, Avate and Netravati falls under the Cauvery basin.

Geology and mineral resources

Geologically the district is made up of Archean Schists and Gneisses. The Dharwar schists occupy 50% of the area of the district and occur as three distinct belts viz., The Kudremukh Gangamoola belt, the koppa belt and Baba budan belt. The Kudremukh belt comprises hornblende schists, amphibolites, chlorite schist, mica schists and thick beds of magnetite quartzites. The magnetite quartzites forms a striking unit in the belt and is intricately folded. The Koppa belt extends from Kalasa for about 155 sq. Km passing through Shimoga district. The rock type consists of schists, chlorite schist, gritty argillites and magnetite quartzites. The baba budan belt is a crescent shaped hill range makeup of hornblende schists and traps, amphibolite quartzite, mica chlorite schists and capped by ferruginous quartzites. The granitic gneisses and granites which are grouped under peninsular gneissic complex covers rest of the area in Chikmagalur district. The district encompasses rich economic minerals such as iron ore, kaolin, kyanite, asbestos, bauxite, chromite, clay, copper, corundum, garnet, graphite, limestone, manganese, mica etc. Among these minerals, iron ore is being exploited on a large scale.

Soil resources

The soils of the Malnad parts of the district are nearly poor acidic type. Along the south of Bababudan range, there is a rich tract of black cotton soil and also found in the neighborhood of Ajjampura together with red and gravelly soils and in different
parts of Tarikere and Kadur taluks. The Western parts of Tarikere taluk contain sandy and gravelly soils. About 50% of the soils of the district are acidic in nature and remaining areas are neutral with regard to soil reaction. A few patches of soils in Tarikere and Kadur taluks are alkaline in nature. The lateritic soils are found in parts of Koppa, Mudigere, and Sringeri taluks and are acidic in nature, with deficiency in Nitrogen, potash, Phosphorous and lime. Red sandy and red loamy soils, which are acidic to neutral, are found in and around Tarikere, NR Pura, and parts of Kadur taluk.

Climate

The average annual rainfall of the district is 1989 mm and is the wettest district in the state. The rainfall is heavy in the south western portion of the district during June to September near the Western ghats. There is a large spatial variation in the rainfall of the district. Sringeri near the western border receives as much as 3695 mm while Kadur in the eastern side of the district receives only 603 mm in a year. About 80% of the annual rainfall is received during South-West monsoon. The climate of the district is very cool, humid during monsoon season and hot during summer. The maximum and minimum temperatures in the district are found to reach 36° C and 9° C respectively. The bioclimatic map of the district prepared by French Institute of Pondicherry is depicted in Plate 4. It clearly indicates the contours of climatic variations from West to East direction.

Flora

The district encompasses a wide variety of vegetation from wet evergreen to dry deciduous and thorny scrub due to altitudinal and climatic variations. The western Ghat which blocks south west monsoon clouds supports rich tropical evergreen forests interspersed by lush grassy slopes on its windward side. On its leeward side, the hills around Mudigere, Aldur, and Koppa form a transition zone with semi-evergreen or moist deciduous forests. The Bababudan range which rises to over 1600 m and Kudremukh area, depicts peninsular montane vegetation with compact sholas and grassland on higher slopes. On the eastern side, the vegetation is dry deciduous and thorny scrub type. The district also has forest plantations like teak, acacia and eucalyptus. Considerable area under horticultural plantations mainly coffee besides coconut, areca nut, cardamom and tea are also seen.
Plate: 4. Bio-climatic Zones

Legend
- Limits of dry season
- Class of dry season
- Primary rain gauge station
- Secondary rain gauge station

Source: French Institute bioclimatic map
Fauna

The district has two major protected areas viz. one wild life sanctuary on the eastern side of western ghats - Bhadra wild life sanctuary and a national park on the western limit of the western ghats - the Kudremukh wild life sanctuary. Bhadra wildlife sanctuary is a very compact and unique in its formation, which occupy almost wholly the saucer type basin enclosed within the horseshoe shaped Bababudangiri hills in the central portion of Chikmagalur district. This sanctuary encompasses a wide variety of flora and fauna. The vegetation ranges from dry deciduous to moist deciduous to semi-evergreen with magnificent bamboo brakes. It has grasslands and sholas at the upper reaches. The sanctuary has carnivorous animals like tiger, leopards, jungle cats, wild dogs, hyenas and some of the rare animals like giant malabar squirrel, flying squirrel, pangolin besides wide variety of birds and reptiles.

The Kudremukh National Park comprises tropical evergreen forests with high elevation grasslands and is designated as priority tiger conservation block. The biodiversity of Kudremukh includes several endangered and globally significant wildlife species like the tiger, lion-tailed macaque, malabar civet, great pied hornbill, king cobra, and flying lizard, several of which are endemic to the area.