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Changes of Forest Landuse Pattern in Hassan District: A Geographical Study

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***Abstract*---**Forests play a significate role in the economic life of the people. Day by day population increase causes the land encroachment will accurse mainly in developing cities and towns. The main purpose of the research study is forest land use pattern changes in Hassan district. The Methodology used in this research work mainly primary and secondary data. The outcome of accurate results and suitable analysis calculated with the help of table and graphs. With the help of Geographical Information System software created study area map. The results shows that there is almost change in the forest area during the study periods of 1999-91 to 2004-05.

***Keywords*---**forest, geographical study, land encroachment, land use pattern, population.

Introduction

In assessing the character of the vegetation type, a factor that cannot be neglected in the long occupation of man and the consequent change on the vegetal carpet through agriculture. The type of vegetation met with any given locality depends on the climate, soil and the past treatment have been emphasized by the leading plant ecologists. The influences of temperature and rainfall in plant life has reviewed a special alternation in the classifications of climate proposed by Koppen and Thornwhite. Forests play an important role in the economic life of the people of the district; they covered nearly 7l.5 percent of the total area of the district in 1996-97 or 1.5 percent of the total area under forests in the State. They contributed about Rs.40.4 lakhs to the district's income in 1960-61. The Western parts of the district forming a portion of the Western Ghats are clothed with magnificent virgin forests. Some of these forest tracts along the slopes of the valleys have been taken up for coffee and cardamom cultivation, but they are sparse towards the east. They exert indirect influence on the climate, regulation of moisture, prevention of soil erosion, and also fertility of the soil (Stamp, 1948; Nanavati, 1957).

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Compared with the adjoining districts of Coorg, Shimoga, Mysore, and Chikmagalur, the district of Hassan has a relatively smaller area under forests, but comparatively larger than that of Mandya. Out of the total area of 196.846 square miles mentioned above, 1.390 square miles of the forest area is under the control of the Revenue Department. In addition to this, there were a few forests under private management. They stood transferred to government control with effect from June 1969, according to the new Mysore Forest Rules of 1969. There are four types of forests, viz, evergreen, moist deciduous, dry deciduous, and scrubs, with about 22 types of valuable trees and about 45 different notable timber species, distributed over 59 plantations, which are grouped under five ranges, the Sakleshpur range being the biggest range in the district. Kabbinale state forest in Sakleshpur range is the biggest state forest plantation (Khoshoo, 1986; Stapledon, 1944).

Raising of new plantations of matchwood has almost been dispensed with since 1967-68. In order to raise the plantations according to an accepted programme, seven nurseries, located in the district, are engaged in raising seedlings of the species like Eucalyptus hybrid and Eucalyptus grandis, gravillia, glyricidia, bamboos, mahogany, raintree, peltophorum, etc. Three of the nurseries are located in Hassan, one in Arsikere taluk and one each in Belur, Holenarsipur and Manjarabad taluks. The total expenditure incurred on raising the seedlings of threes species for 1968-69 was Rs.50,700. The forests are brought up mostly under regular sylvicultural methods of treatment in the light of local conditions to attain natural regeneration. Most of the bamboo plants have died owing to gregarious flowring. Attempts are being made to raise them by resorting to artificial regeneration. The old plantations are being maintained and new additions are made occasionally by raising valuable species in blanks. Some of the evergreen forests are leased out by the plywood industries and WIMCO for the exploitation of certain species only. They have been permitted to remove the matured trees according to a prescription. A working plan for the exploitation of ghat forests and dry deciduous forests is being prepared. The forest department has taken up long ranges of developmental schemes in the district like soil conservation, rehabilitation of degraded forests, economic plantations, fast- growing species, agaves hedges, and forest protection (Kostrowicki, 1977).

Study area

Hassan district named after its headquarters city of Hassan is one of the twenty- seven districts of Karnataka state. The district is located in the Southwestern part of the state. The district, situated between 12°31' and 13° 33' North latitude and 75° 38' and 76° 39' east longitude. The greatest length of the district, from north to south, is about 129 kilometers, and its greatest breadth, from east to west is about 110 kilometers, spanning a total geographical area of 6,845 sq. kilometers which ranks second in the area among the twenty-seven districts. The district is surrounded by as many as six districts of Karnataka state (McDonald & Lane, 2004).

The district lies partly in the Malnad tract and partly in the southern maidan (plains) tract. Taking into consideration the physical aspects, climate, rainfall, etc., the district may be divided into three regions viz., (1) Southern Malnad, (2) Semi-Malnad and (3) Southern maidan. Three important rivers, viz., the Cauvery, Hemavathy and Yagachi flow through the Hassan district. The soils of Hassan district also show a marked diversity in different parts of the district, depending upon the nature of the parent rock and the climatic conditions of the respective areas. It has forest loams and red laterite, ferruginous and clayey soil of the hill slopes and the Sandy or gravelly soil of the plains. The soils of Hassan district occur in different physiographic units such as hilley region hillocks, undulating to rolling lands, gently sloping pediments, and valleys. In the development of these soils, climate, vegetation and relief have played a dominant role. The district has an agreeable climate. The year may be divided into four seasons according to the climatic conditions. The summer season is from March to the end of May and it is followed by the South-West Monsoon season lasting up to about the end of September, October and November may be termed the post-monsoon or retreating monsoon season. The period from December to February is the dry season with generally clear and bright weather.

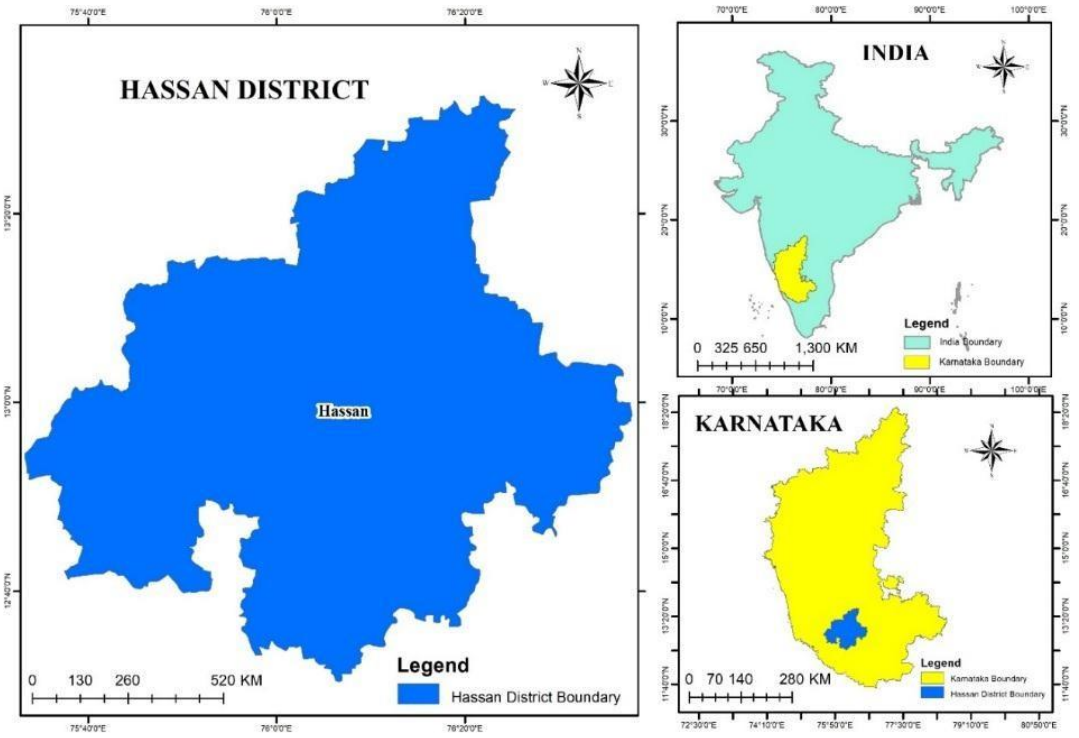

Figure 1. Location map of Hassan District

The district is bounded on the north by Chikmagalur district, on the east by Tumkur and Mandya districts, on the South by Mysore and Coorg districts, and on the west by Dakshina Kannada district. The district has been divided into 8 Taluks for administrative purpose, they are: Alur (40.265 sq km), Arkalgud (64.450), Arsikere (123.452 sq.km), Belur (76.740 sq.km), Channarayapatna (103,464 sq.km), Hassan (91.818 sq.km), Holenarasipur (59.524 sq.km), Sakleshpur (102.889) sq.km). As per 2004-05, the Hassan district had 10,51,095 population 2,395 villages and 8 towns (Pereira & Wicherson, 1999).

Objective

The Changes of forest Landuse pattern in Hassan district 1990-91 from 2004-05.

Methodology

The methodology used in this research work is mainly primary and secondary data. Data were taken from Hassan district at a glance, 1990-91 and 2004-05, district statistical officer, Hassan Government of Karnataka, Bangalore. And also taken the data from Taluk-wise Plan Statistics of Hassan district, District Planning Unit, Zilla Parishad Office, Hassan. the outcome of accurate results and suitable analysis calculated with the help of tables and graphs. With the help of Arc GIS software created a study area map.

Result and Discussion

Hassan district has a total geographical area of 6,62,602 hectares., out of which 68,775 hectares. (19.37%) of land is under forest during 2004-05, and the same was 54,029 hectares. (8.15%) in the year 1990-91, there is almost change in the forest area during the study periods, 1990-91 to 2004-05 the Table.1 reveals that

Sakleshpur taluk had the highest land under forest 26,169 hectares. (25.43%) in 1990-91 and 26,169 hectares. (25.43%) in 2004-05. There are no changes in the forest area. Belur taluk stands second with 6,023 hectares. (6.23%) and 6,634 hectares. (8.64%) during the study period. It is noticed that forest area increased in Belur taluk.

Table 1
Hassan District Forest Landuse From 1990-91 to 2004-05

Sl. No.	Taluks	Geographical Area	Forest 1990-91	Forest 2004-05
1	Alur	40,265	487	487
2	Arkalgud	64,450	2,458	2,458
3	Arsikere	1,23,452	15,049	15,049
4	Belur	96,740	6,023	6,634
5	Channarayapatna	1,03,464	697	697
6	Hassan	91,818	1,933	3,677
7	Holenarasipur	59,524	1,213	3,604
8	Sakleshpur	1,02,889	26,169	26,169
	Total	6,62,602	54,029	68,775

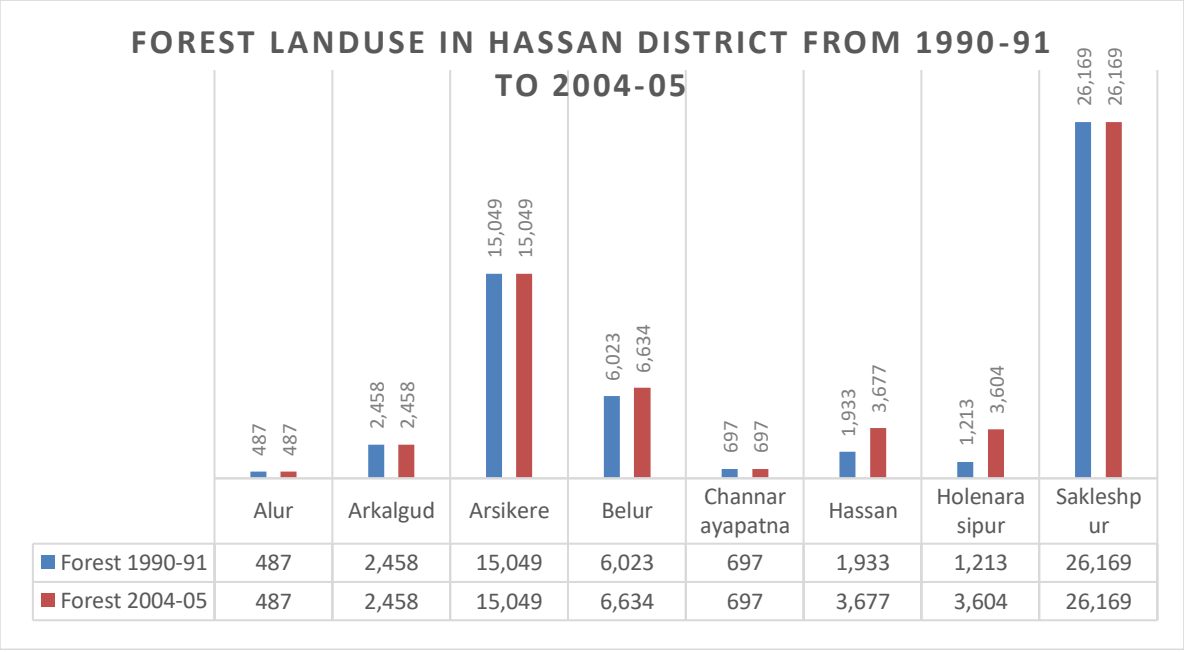

Figure 2: Forest Land use in Hassan District from 1990-91 to 2004-05.

Table 2
Hassan district Change in forest land utilization 1990-91 to 2004-05

Years	Alur	Arkalgud	Arsikere	Belur	C.R.Patna	Hassan	H.N.Pur	Sakleshpur	District Total
1990-91	487	2458	15049	6023	697	193	1213	26169	54029
2004-05	487	2450	15049	6634	697	3677	3604	26169	68775
Hectares	0	0	0	-64	0	-3484	-2391	0	-14746

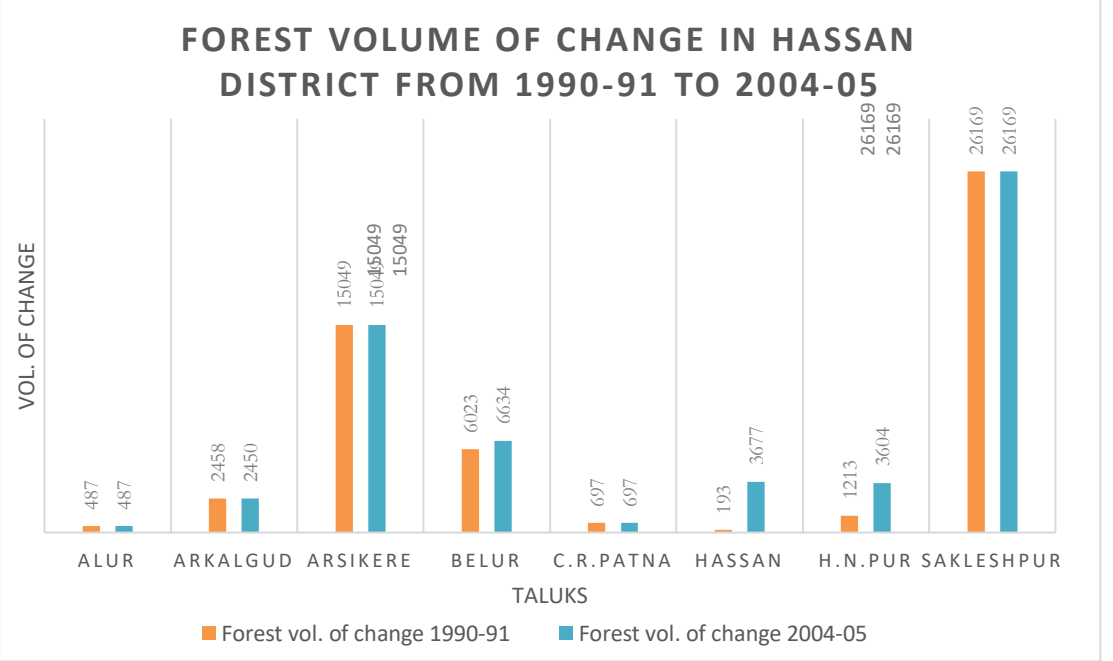

Figure 3: Forest volume of change in Hassan District from 1990-91 to 2004-05

In Hassan taluk 1,923 hectares (0.2%) the land was under forest area in 1990-91 it is increased to 3,677 hectares. (4.00%) in 2004-05. In Holenarasipur taluk 1,213 hects. (2.04%) in 1990-91. it increased to 3,604 hectares (6.05%) during 2004-05. Alur taluk 487 hectares (1.21%) of land, Arkalgud 2,458 hectares (3.81%), Arsikere 15,049 hectares (12.19%), and C.R.Patna 697 hectares (0.67%) which is the almost equal area under forest during both study periods .

Conclusion

In this study the lack of immediate availability of satellite imaginaries brings certain constraints in the minute and micro land use analysis of the Hassan district. There is almost a change in the forest area during the study periods of 1999-91 to 2004-05. The Belur, Hassan, and H.N.pur taluks have been gradually increased the forest area in 2004-05 compared to 1990-91. The final result shows positive result that is for forest land use 14,746 have been increased in Hassan district compared between 1999-91 to 2004-05.

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