

Figure 1: Location and Forest Resource of the Study Area

According to the population census of India in the year 2011 district has population of 10, 53,522 out of which the male and female 5, 25,495 and 5, 28,027 respectively. The population of district constituted 1.45% of total population of Madhya Pradesh. The population density of the district is 182 person sq./km. and average literacy rate is 68.3% which the male and female literacy were 79.49% and 57.20% respectively.

The climate is cold winter, hot summer medium rain are the main characters of these area. The region has rich forest belong to the northern tropical day deciduous type and moist deciduous forest consisting of teak and Sal forest, mixed forest and reserved forest the region is well known timber growing area of the state.

### 3. Objectives of the Study

The main objective of the present study is following:

1. To find out the existing status of forest cover and temporal change of forest resource in the district.
2. To assess the forest resource and local significance of forest in the district.

### 4. Database and Methodology

The data base of the topic under discussion includes both government and non- government published and unpublished records and reports regarding forest, agricultural land use along with some maps and memoirs. For the forest resources secondary data have been collected from district forest department, state forest report from forest survey of India of different time periods. It also includes the census statistics of the district particularly for population data.

The data have been analyzed with the help of statistical tables and diagrams are used to illustrate the fact. For this

study data and information has been collected with the help of books, magazine, research articles and reports of national census.

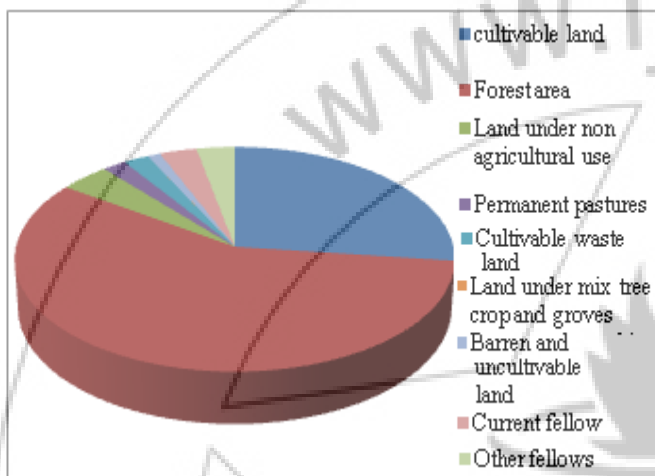
**5. Land Use of the Study Area**

Mandla district is a pride district in agriculture. There are two principal cropping regions: Alluvial on the northern part and laterite on the southern part, and about 69 percent of the total population depends on agriculture. Primary crop of the district are rice, gram and wheat.

**Table 1:** General Land Use of the Study Area

Land use pattern of the district	Geographical area	Cultivable land	Forest area	Land under non agricultural use	Permanent pastures	Cultivable waste land	Land under mix tree crop and groves	Barren and uncultivable land	Current fellow	Other fellows
Area ('000ha.)	965.6	277.9	593.2	42.4	19.9	21.5	0.1	10.6	31.4	32.2

Source: Madhya Pradesh agriculture contingency plan for Mandla district, 2009-10.



**Figure 2:** Land Use of Mandla District

According to Madhya Pradesh agriculture contingency plan for Mandla district there has been 28.78 percent of cultivable land, 61.43 percent forest land, 2.22 percent cultivable waste land and 3.25 percent current fellow land in the district (table 1).

**6. Forest Resource of Mandla District**

The forest survey of India was established in 1981. The first report on the forest cover of the country was published in 1987. Using land sat data of us satellite through visual interpretation techniques on 1:1 million scales. From the second assessment of forest cover the resolution of the sensor improved to 30m and the scale of interpretation to 1.25,000. The India Remote Sensing (IRS P6LISS III) satellite data having a resolution of 23.5m has been used in the analysis of data (State Forest Report, 2011).

Total recorded forest land in the district is 2830 km<sup>2</sup> which about 48.79 percent of the total geographical area of the district. According to FSI assessment in 2011 there were 751 km<sup>2</sup> very dense, 1204 km<sup>2</sup> moderate and 875 km<sup>2</sup> open forest cover of the district.

**Protected area**

There are 1 National park and 1 wildlife sanctuary in the district. The total protected area is 1050 km<sup>2</sup>, which is 18.10 percent of the total geographical area of the district. Kanha Kisli national park and fen wild life sanctuary are there.

**7. Temporal Change of Forest Cover in Mandla District**

There has been rapidly fluctuated in short term interval change in the area of forest cover in the district during the last 10 year i.e. from 2769 km<sup>2</sup> in 2001 to 2762 km<sup>2</sup> in 2003 and continently increase 2771 km<sup>2</sup> in 2003 to 2005 and 2834 km<sup>2</sup> in 2009 and decrease 4 km<sup>2</sup> (2830 km<sup>2</sup>) in 2011.

**Table 2:** Forest Cover Change, 2001-2011

Years	2001	2003	2005	2009	2011
Dense forest	1990	1752	1711	1958	1955
Open forest	779	940	1060	875	875
Scrub	57	40	12	55	55
Total	2769	2732	2771	2834	2830

Source: state forest report 2001, 2003, 2005, 2009 and 2011.

Such changes are notice within the categories of forest types during a period of 5 years (2001-2005). The dense forest covers an area of about 1990 Sq.km in 2001 and there has been a net decrease of 279 sq km in 2001-2005. while open forest cover about 779 in 2001 it has been increase 1060 in 2005. The forest cover data indicate that there has been an overall decrease of 35 sq. km of dense forest. While there has been an improvement of 96 sq. km of open forest. On the other hand there has been increase of total forest cover about 61 sq km during 2001-2011.

**8. Forest Product**

Forest products range over a vast spectrum of use categories of both major and minor types. The major uses are timber; construction and furniture woods, and raw material for cottage, small and large scale pulp and paper, match and other industries, and foods fibers, fuel woods charcoals etc. minor products are immensely useful as providing shelter resources and livelihoods for tribal living amidst them, and also other poor and resource less peoples earning living by collecting nuts and fruits, Seeds, Medicinal plants and herbs and grasses, leaves and fodder and fuel woods for self use as well as for sale. Several new technologies and demands have brought out a variety of new industries and utilities, such as plywood and pulpwood, out of wood.

**9. Locational Significance of Forest Resource in Mandla District**

The forest of Mandla region has some important location signification which may be explained form physical,

economic and socio-political points of view. Every forest is naturally rooted on particular types of land in relation to its hydro-geomorphic and climate specificities (Mather, 1986). The most important significance of the location of central forests probably lies in the fact that this upland- forest complex consists of number of catchments of some south-west flowing monsoonal rivers running through the Maikal plateau. They are important in carrying and supplying biogeochemical nutrients from the forest floors to the agricultural field central upland (Biswas and Panchadhyayi, 1985).

## 10. Human Impact on Vegetation

Man's unique power to manipulate things and an accumulated experience presently enabled him to break through the barriers of temperature, aridity, space, seas and mountains that always restricted other species to specific habitat within a limited range (Rai, 2004). The mainstay of the people in the Madhya Pradesh is land use and their entire life depends upon vegetation. Growth of population reflects pressure upon forest resources. In any consideration of human impact environment it is probably appropriate to start with vegetation for human kind had a greater influence on plants life than any other components of environment. Indeed the nature of whole land scape has been transformed by human induced vegetation change.

## 11. Conservation of Forest

Conservation is a concept of well balanced anthropocentric resource management Preservation and protection geocentric interests. The most important forestry concept today is the conservation and management of forest for multiple uses and sustained yield, including for managed mining, recreational and ecotourism interests and harvesting of commercially valuable timber and maintaining wildlife habitats. The interests of the environmentalists and ecologists conflict with other socio economic, political and anthropogenic interests. Ecological interests campaign for the forest to be largely left as wilderness or recreational area and are thus severally at odds with those interests which want to exploit at least substantial parts of forest for business, trade, industries and fulfillment of growing human needs for variety of products and direct- indirect services (Singh and Siddiqui, 2012).

## 12. Concluding Observation

Forest is great expressions of nature's multifaceted productive vigor providing great scenic beauty a land scape. They have been anciently significant in human life, and a great help in human substance and civilization growth. The current vegetation status in the teak and Sal belt of the region can thus be summarized as a patchwork of regenerating Sal forest of various ages, semi- natural stands managed for various purposes degraded land monoculture plantation of exotic tree species. It is concluded that the population growth are increasing pressure on forest resource which effect the rainfall, temperature, soil erosion, loss of biodiversity. To fulfillment the needs of growing population forest least in converted into brables land, exploiting natural

resource and leads towards more pressure on natural environment and arising environmental problems from local to global level.

## References

- [1] Banerjee, Riya (2012), "An Appraisal of the Forest Resource Base in Burdwan District", International Journal of Scientific and Research Publication, Volume 2, Issue 12.
- [2] Biswas, A and Panchadhyayi, S. (1985), "Basin Environment and Management- The Case of Subarnrekha System, Transaction", Institute of Indian Geographers, Vol. 7, No. 7.
- [3] Diarrassaouba, Malick and Boabacar, Inoussa (2009), "Deforestation in Sub- Saharan Africa", Selected Paper Prepared For Presentation at the Southern Agriculture Economic Association Annual Meeting, Atlanta Georgia.
- [4] District Gazetter, District Mandla, Madhya Pradesh.
- [5] Rai, R.K. (2004), "Deforestation and Its Impact on Environment with Special Reference to Assam", Hill Geographer, Vol. XX, No. 1&2, pp 8-13.
- [6] Singh, Khashanath and Siddiqui, A.R. (2012), "Economic Geography", Prayag Pustak Bhawan, Allahabd, pp. 96-113.
- [7] State Forest Report, 2001, 2003, 2005, 2009 and 2011.
- [8] www.census.nic.in

## Author Profile



**Ghanshyam Prasad Jhariya** is a research scholar in Department of General and Applied Geography, Dr. Hari Singh Gour Central University Sagar. He did master degree in First class from Dr. Hari Singh Gour University Sagar, India. His specialization includes food security and agricultural development.

**C. K. Jain** is associate professor, general and applied geography, Dr. Hari Singh Gour Central University Sagar, India. He has 41 Research Publications in his name and 02 books published. He supervised 4 Ph.D. scholars. His Specialization in Agricultural Geography.