

7.15 MADHYA PRADESH

7.15.1 Introduction

Madhya Pradesh is the second largest State of the country with an area of 3,08,245 km² constituting 9.38% of the geographical area of the country. It lies between latitude 21°17' and 26°52' N and longitude 74°08' and 82°49' E. physiographically, the State can be divided into four regions viz the low lying areas in north and north-west of Gwalior, Malwa plateau, Satpura and Vindhyan ranges. Chambal, Betwa, Sone and Narmada are four important rivers of the State. The rainfall decreases from south east and east to north-west and west. The average annual rainfall varies from 800 mm to 1,800 mm. The annual temperature ranges from 22.5°C to 25°C.

As per Census 2001, the total population of the State is 60.35 million of which the rural population constituted 73.54 %. The population density is 196 persons per km². The Scheduled Tribes constitute 22.3% of the population. The projected population of the State is 69.90 million (as projected by the Office of RGI, for the year 2009) which constitutes 6.02% of the country's population. The livestock population as per Livestock Census 2003 is 35.6 million.

Land use pattern of the State is given in the Table 7.15.1.

7.15.2 Recorded Forest Area

The recorded forest area of the State is 94,689 km². Reserved Forests constitute 65.36%, Protected Forests 32.84%, and Unclassed Forests 1.8% of the total

forest area. About 31% of the State's geographical area is under recorded forests.

7.15.3 Protected Areas

Madhya Pradesh has 9 National Parks and 25 Wildlife Sanctuaries covering an area of 10,814 km² which constitutes 3.51% of the State's geographical area. There are 5 Tiger Reserves in the State namely, Kanha, Panna, Bandhavgarh, Pench and Satpura. The Pachmarhi Biosphere Reserve covers parts of Hoshangabad, Betul and Chhindwara districts with a total area of about 0.5 million ha and includes Bori Sanctuary, Satpura National Park and Pachmarhi Sanctuary.

7.15.4 Joint Forest Management

Madhya Pradesh is a pioneer State in implementing JFM. The State has about 63% of the forest area under JFM. There are 14,173 JFM committees managing 6 million ha of forest area as on March 2005. About 1.7 million families are involved in JFM of which 0.8 million families belong to Scheduled Tribes.

Source: MoEF, 2005.

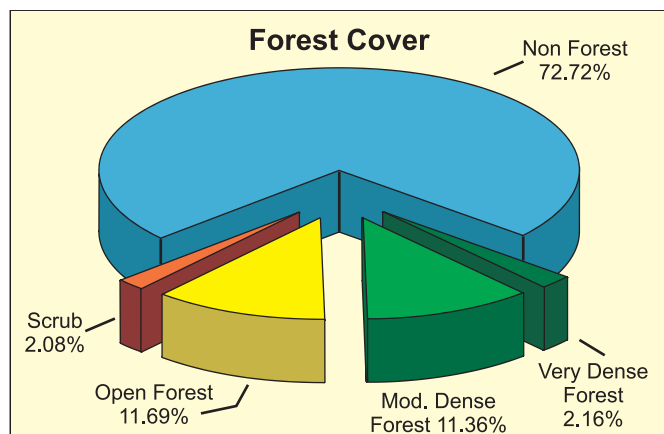
7.15.5 Forest Cover

The forest cover in the State, based on interpretation of satellite data of Oct - Dec 2006, is 77,700 km², which is 25.21% of the State's geographical area. In terms of forest canopy density classes, the State has 6,647 km² very dense forest, 35,007 km² moderately dense

Table 7.15.1: Land use pattern

Land Use	Area in '000 ha	Percentage
Total geographical area	30,825	
Reporting area for land utilization	30,756	100.00
Forests	8,699	28.28
Not available for cultivation	3,398	11.05
Permanent pastures and other grazing lands	1,348	4.38
Land under misc. tree crops & groves	19	0.06
Culturable wasteland	1,177	3.83
Fallow lands other than current fallows	612	1.99
Current fallows	769	2.50
Net area sown	14,735	47.91

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2006.



forest, and 36,046 km² open forest. The distribution of forest cover of the State is shown in Fig. 7.15.

Comparison of the current forest cover (satellite data of Oct - Dec 2006) with the previous assessment (satellite data of Oct - Dec 2004) shows a loss of 39 km² of forest cover.

The change matrix, given in Table 7.15.2, reveals that there has been a decrease of 1 km² in the very dense forest, 28 km² in moderately dense forest and 10 km² in open forest.

On the basis of ground truthing by the officials of FSI, main reasons for decrease of forest cover are increase of water level of Indira-Sagar & Omkareshwar dams in the districts of East Nimar, Harda & Dewas and Bandh Sagar dam in the districts of Satna & Shahdol.

Increase of forest cover is due to raising of plantations by the Forest Development Corporation of Madhya Pradesh Limited and Conservation/Protection of forest cover by the State Forest Department.

District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment is given in the Table 7.15.3.

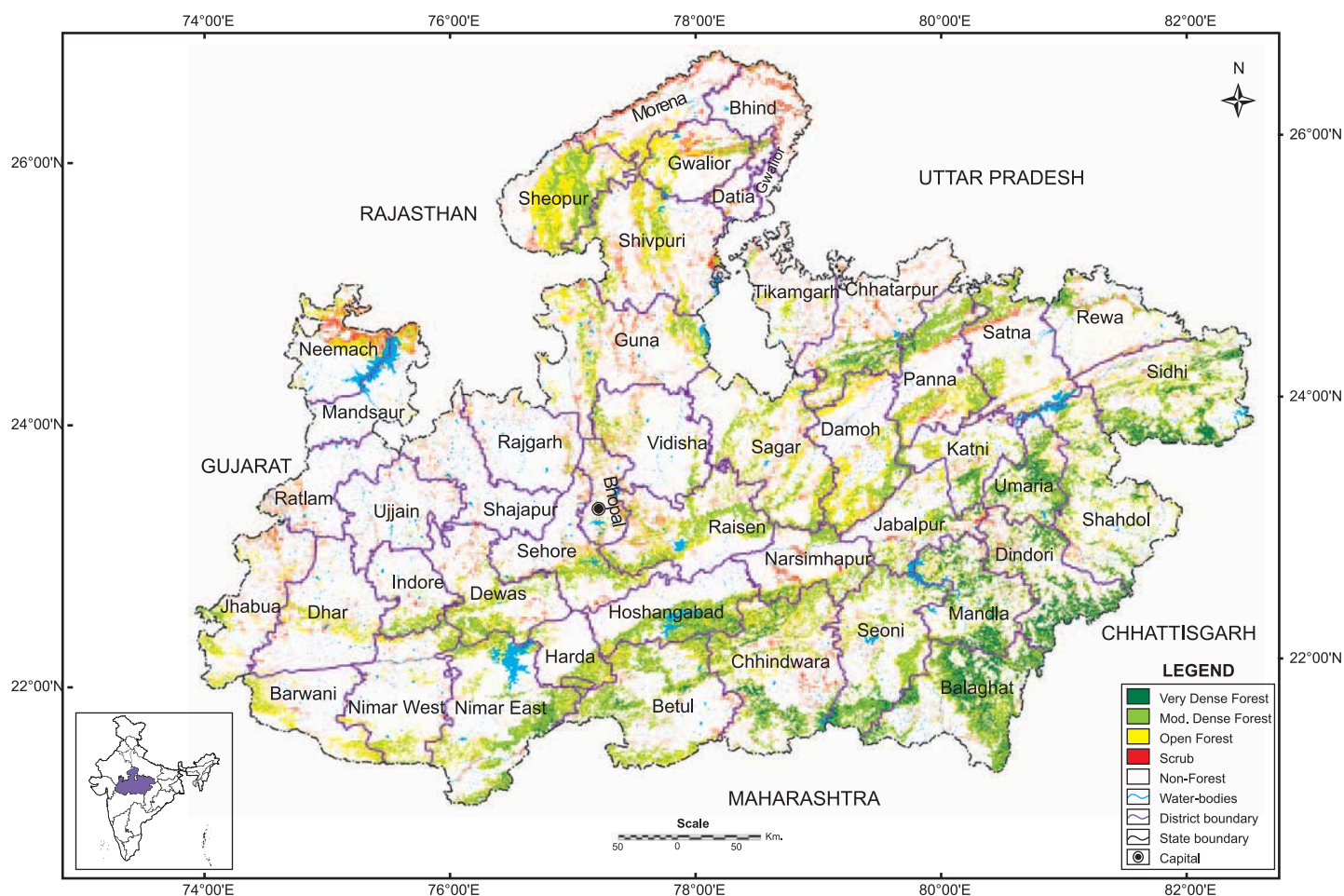


Fig 7.15 : Forest cover map of Madhya Pradesh

Table 7.15.2: Forest cover change matrix

(area in km²)

2005 Assessment (Data of Oct - Dec 2004)	2007 (Data of Oct - Dec 2006)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	6,647	0	0	0	1	6,648
Moderately Dense Forest	0	35,007	16	1	11	35,035
Open Forest	0	0	36,014	0	42	36,056
Scrub	0	0	1	6,389	1	6,391
Non-Forest	0	0	15	11	224,089	224,115
Total of 2007	6,647	35,007	36,046	6,401	224,144	308,245
Net Change	-1	-28	-10	10	29	

Table 7.15.3: District-wise forest cover in 2007

Number of districts: 45

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Balaghat ^T	9,229	1,339	2,711	946	4,996	54.13	-1	56
Barwani	5,422	0	189	802	991	18.28	0	42
Betul ^T	10,043	201	1,967	1,404	3,572	35.57	0	114
Bhind	4,459	0	29	69	98	2.20	0	395
Bhopal	2,772	0	128	238	366	13.20	0	129
Chhatarpur	8,687	184	822	742	1,748	20.12	0	279
Chhindwara ^T	11,815	575	2,044	1,920	4,539	38.42	-1	240
Damoh	7,306	2	862	1,741	2,605	35.66	0	76
Datia	2,691	0	78	79	157	5.83	0	101
Dewas ^T	7,020	13	955	931	1,899	27.05	-3	112
Dhar ^T	8,153	0	137	597	734	9.00	0	120
Dindori ^T	7,470	1,033	1,175	559	2,767	37.04	0	132
East Nimar ^T	10,776	200	1,831	1,387	3,418	31.72	-27	51
Guna	11,064	2	699	1,409	2,110	19.07	1	355
Gwalior	4,560	1	327	865	1,193	26.16	4	210
Harda ^T	3,330	19	546	463	1,028	30.87	-6	8
Hoshangabad ^T	6,707	274	1,373	777	2,424	36.14	0	35
Indore	3,898	0	370	334	704	18.06	-1	27
Jabalpur ^T	5,211	36	514	619	1,169	22.43	-1	154
Jhabua ^T	6,778	0	254	682	936	13.81	0	195
Katni	4,950	102	607	570	1,279	25.84	0	52
Mandla ^T	5,800	751	1,207	876	2,834	48.86	0	55
Mandsaur	5,535	0	40	220	260	4.70	0	108
Morena ^T	4,989	0	98	632	730	14.63	0	410
Narsimhapur	5,133	60	665	632	1,357	26.44	0	135
Neemach	4,256	0	121	706	827	19.43	7	395
Panna	7,135	85	1,501	1,068	2,654	37.20	0	190
Raisen	8,466	22	1,331	1,383	2,736	32.32	2	183
Rajgarh	6,153	0	39	114	153	2.49	0	101
Ratlam ^T	4,861	0	4	54	58	1.19	0	135
Rewa	6,314	65	398	314	777	12.31	0	115
Sagar	10,252	2	1,178	1,726	2,906	28.35	0	135
Satna	7,502	13	942	795	1,750	23.33	-3	204
Sehore	6,578	25	654	703	1,382	21.01	0	124
Seoni ^T	8,758	241	1,812	1,031	3,084	35.21	-3	61
Shahdol ^T	9,952	245	1,255	1,224	2,724	27.37	-6	73
Shajapur	6,195	0	5	24	29	0.47	0	99

Forest and Tree Resources in States and Union Territories

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	Percent of G.A.	Change*	Scrub
Sheopur	6,606	6	1,394	2,121	3,521	53.30	-1	127
Shivpuri	10,277	19	786	1,645	2,450	23.84	0	376
Sidhi ^T	10,526	717	1,936	1,449	4,102	38.97	0	101
Tikamgarh	5,048	1	93	309	403	7.98	0	132
Ujjain	6,091	0	4	26	30	0.49	0	85
Umaria	4,076	412	1,091	530	2,033	49.88	0	29
Vidisha	7,371	1	363	505	869	11.79	0	97
West Nimar ^T	8,030	1	472	825	1,298	16.16	0	48
Total	308,245	6,647	35,007	36,046	77,700	25.21	-39	6,401

* Change compared to 2005 assessment (revised).

7.15.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.15.4.

Table 7.15.4: Altitude zone wise forest cover

(area in km²)

Altitude Zone	VDF	MDF	OF	Total
0-500m	2,078	21,553	25,133	48,764
500-1000m	4,452	13,311	10,825	28,588
1000-2000m	117	143	88	348
Total	6,647	35,007	36,046	77,700

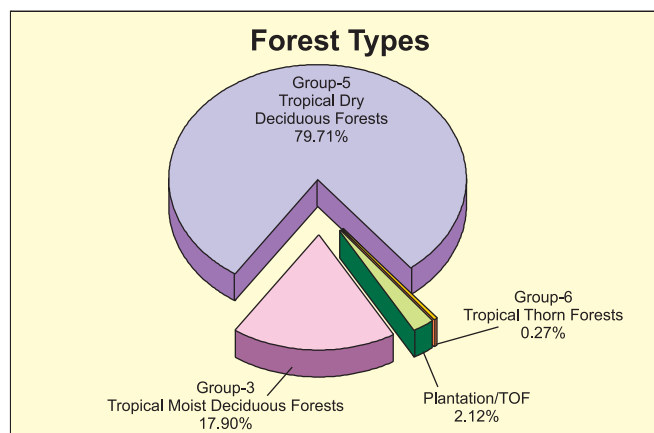
(based on SRTM Digital Elevation Model)

7.15.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 18 forest types which belong to the 3 forest type groups viz Tropical Dry Deciduous, Tropical Moist Deciduous and Tropical Thorn Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.

7.15.8 Tree Cover

Tree cover of the State has been estimated using sample data of TOF inventory collected over a period of six years i.e. 2002-08. The estimated tree cover in the State is 6,871 km² which is 2.23% of the geographical area of the State. Sixteen districts of the State (Barwani, Bhind, Chhindwara, Damoh, Guna,



Gwalior, Harda, Hoshangabad, Jhabua, Katni, Mandsaur, Ratlam, Satna, Sehore, Shivpuri and Sidhi) have been inventoried. The forest and tree cover of the State is presented in the Table 7.15.5.

Table 7.15.5: Forest & tree cover

(area in km²)

Category	Area	% of Geographical area
Tree Cover	6,871	2.23
Forest Cover	77,700	25.21
Forest & Tree Cover	84,571	27.44