



Chhattisgarh

9.5.1 Introduction

Chhattisgarh covers an area of 1,35,192 sq km which is 4.11% of the geographical area of the country. The state falls under East Deccan physiographic zone and can be divided into three agro-climatic zones, viz. the Chhattisgarh Plains, the Northern Hills of Chhattisgarh and the Bastar Plateau. It has a tropical hot and humid climate. The average annual rainfall varies from about 1,100 mm to about 1,700 mm and the average annual temperature ranges between 11°C to 47°C. The state is drained by number of rivers, which includes Rihand, Hasdo (a tributary of Mahanadi), and Indravati. The state has 18 districts, among which 11 are tribal districts. The state does not have any hill district. As per the 2011 census, Chhattisgarh has a population of 25.55 million accounting to 2.11 percent of India's population. The urban, rural and tribal population comprise 23.24%, 76.76% and 30.62% respectively. The average population density of the state is 189 per sq km, which is lower than the national average of 382 persons per sq km. The Livestock census 2012 has reported a total livestock population of 15.04 million.

Table 9.5.1 Land Use Pattern

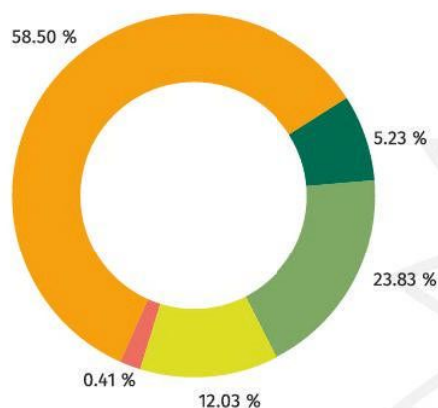
Land Use Types	Area (in 000' ha)	Percentage
Total Geographic Area	13,519	
Reporting area for land utilization	13,790	100
Forests	6,331	45.91
Not available for land cultivation	1,027	7.45
Permanent pastures and other grazing lands	882	6.4
Land under misc. tree crops and groves	1	0.01
Culturable wasteland	349	2.53
Fallow land other than current fallows	254	1.84
Current fallows	260	1.89
Net area sown	4,686	33.97

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2013-14.

9.5.2

Forest Cover

Based on interpretation of satellite data pertaining to Oct - Dec 2015, the forest cover in the State is 55,547 sq km which is 41.09% of the State's geographical area. In terms of forest canopy density classes, the state has 7,064 sq km under very dense forest, 32,215 sq km under moderately dense forest and 16,268 sq km under open forest.



Forest cover of Chhattisgarh

Pie Chart showing forest cover of Chhattisgarh

Non Forest Scrub Open Forest Mod. Dense Forest Very Dense Forest

9.5.3

Forest Cover within and outside Recorded Forest Area

The recorded forest area of the state is 59,772 sq km which is 44.21% of its geographical area. The Reserved, Protected and Unclassed Forests are 43.14%, 40.21% and 16.65% respectively of the recorded forest area. However, as the geo referenced digital data provided by the State covers only an area 52,646 sq km, the analysis of forest cover within and outside this area is depicted below.

Table 9.5.2: Forest Cover within and outside Recorded Forest Area

Forest cover within RFA (Area in sq km)	
Very Dense Forest (VDF)	5,411
Moderately Dense Forest (MDF)	26,323
Open Forest (OF)	10,649
Total	42,383
Forest Cover outside RFA	
Very Dense Forest	1,653
Moderately Dense Forest	5,892
Open Forest	5,619
Total	13,164
Total Forest Cover	55,547
Tree Cover	3,833
Total Forest & Tree Cover	59,380
Of State's Geographical Area	43.92%
Of India's Forest & Tree Cover	7.40%
Per capita Forest & Tree Cover	0.23 ha

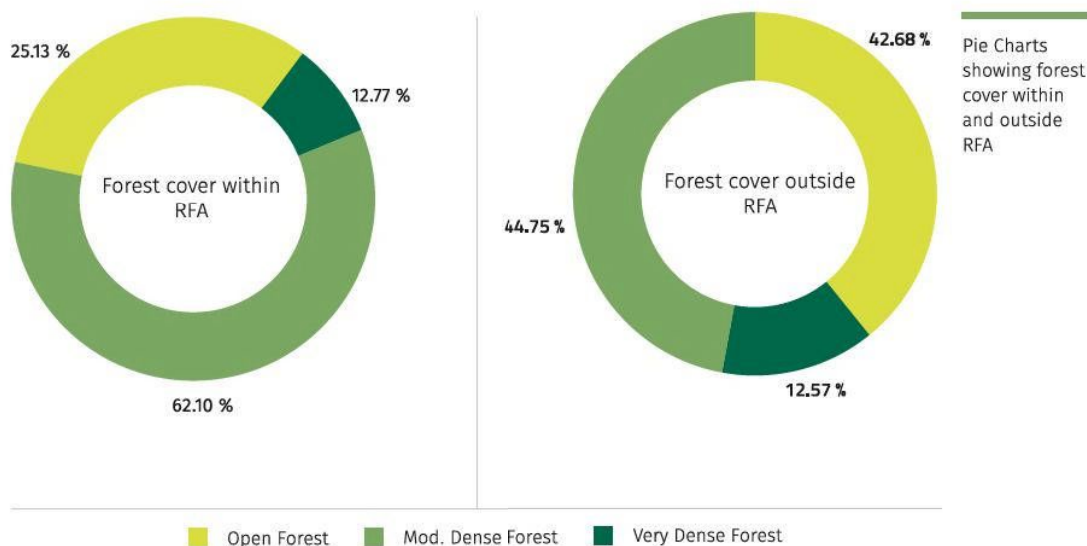


Table 9.5.3 Altitude-wise Forest Cover (Area in sq km)

Altitude Zone (m)	Geographical Area	VDF	MDF	OF	Total
0-500	88,516	3,428	15,969	9,554	28,951
500-1000	45,491	3,582	15,898	6,469	25,949
1000-2000	1,185	54	348	245	647
Total	1,35,192	7,064	32,215	16,268	55,547

(Based on SRTM, Digital Elevation Model)

Table 9.5.4 Forest Cover in different Patch Size Classes

S.No.	Patch Size Range in (sq km)	No. of Patches	Area (sq km)	%age
1.	$\geq 0.01 \leq 1.0$	31,468	2,510	4.52
2.	$> 1.0 \leq 10$	1,033	2,746	4.94
3.	$> 10 \leq 100$	165	4,686	8.44
4.	$> 100 \leq 500$	23	4,813	8.67
5.	$> 500 \leq 1000$	3	2,390	4.30
6.	$> 1000 \leq 5000$	8	20,787	37.42
7.	$> 5000 \leq 10000$	2	17,615	31.71
	Total	32,702	55,547	100

Table 9.5.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	323.660 m cum	7.67
Growing Stock in TOF	86.348 m cum	5.38
Potential Production of industrial wood from TOF	3.98 m cum	5.34
Bamboo bearing area within forest area of the state	11,060 sq km	7.05
Total number of culms	1,075 millions	3.83
Total green weight equivalent of culms	5,942 (000' tonnes)	3.15

9.5.4

Carbon Stock in forest

The total Carbon stock of forests in the State is 560,980 million tonnes (2056,927 million tonnes of CO₂ equivalent) which is 7.92% of total forest carbon of the country.

9.5.5

Decadal Change in water bodies within Forest

An increase of 77 sq km has been observed in the water body coverage within forest compared to 2005. The graphical and tabular comparison is depicted below.

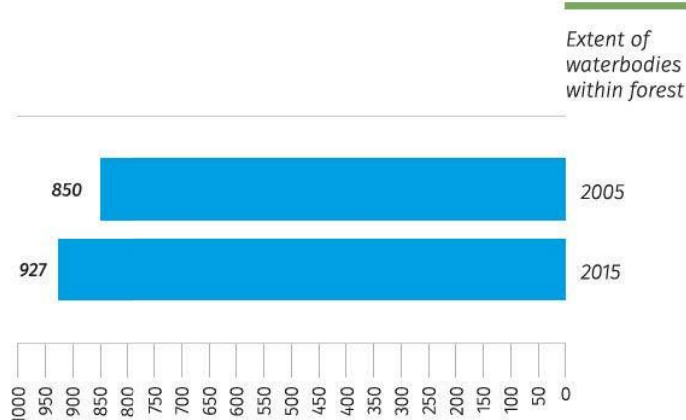


Table 9.5.6 Water bodies within Forest for the years 2005 and 2015

Area / Coverage	2005	2015
Extent of water bodies (sq km) within Forest	850	927
% of water bodies to Forest Cover	1.52	1.67

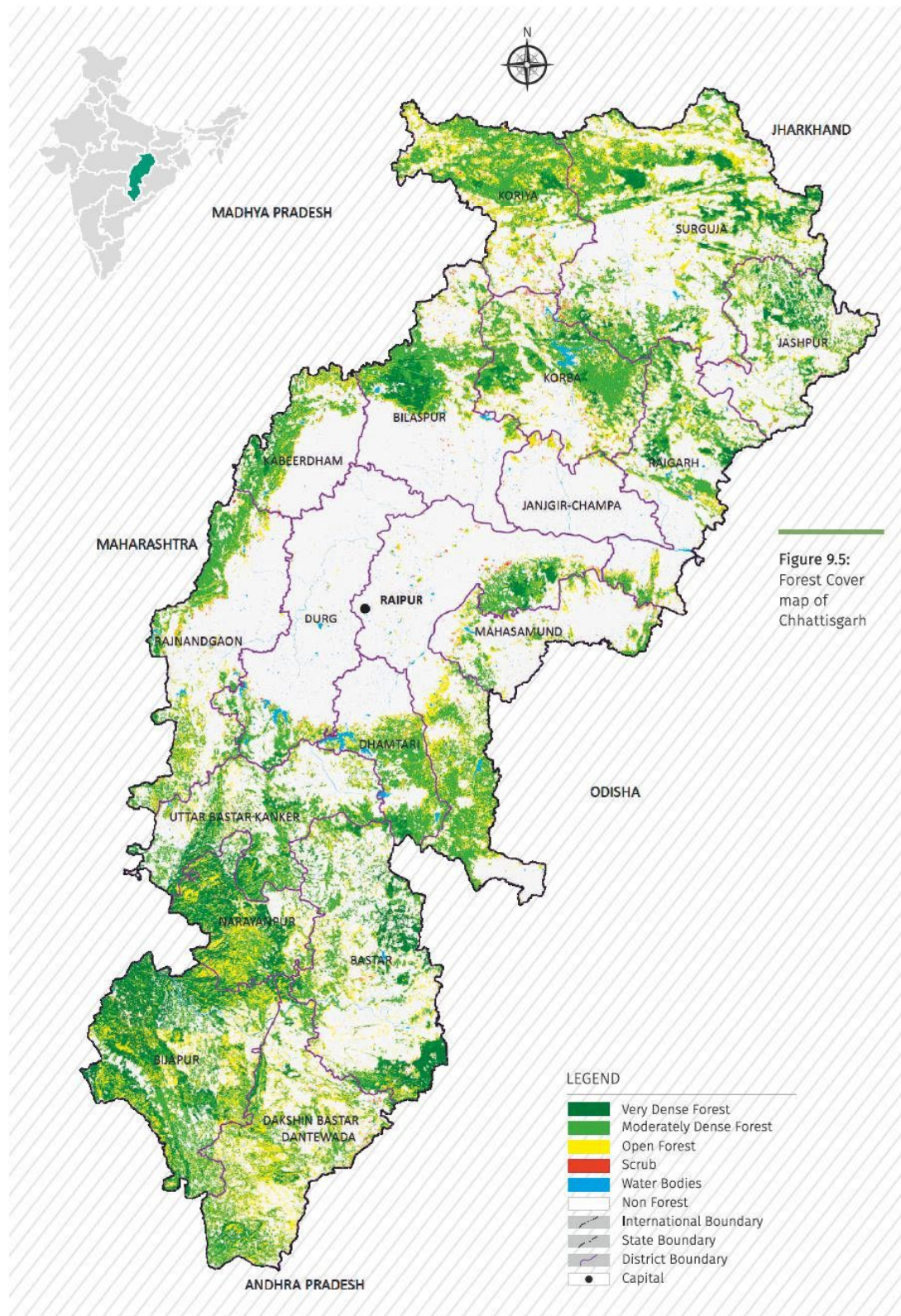


Table 9.5.7 District- wise Forest Cover							(area in sq km)	
District	Geographical Area	2017 Assessment			Total	% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest				
Bastar ^T	10,470	955	2,117	1,152	4,224	40.34	-1	20
Bijapur ^T	8,530	2,047	2,929	1,531	6,507	76.28	-3	1
Bilaspur ^T	8,272	395	1,539	522	2,456	29.69	0	48
Dakshin Bastar Dantewada ^T	8,298	250	2,309	1,897	4,456	53.70	-1	24
Dhamtari	4,084	49	1,386	422	1,857	45.47	0	7
Durg ^T	8,535	44	511	216	771	9.03	0	18
Janjgir-Champa	3,853	2	22	125	149	3.87	-1	14
Jashpur ^T	5,838	225	1,324	582	2,131	36.50	0	19
Kabeergham	4,235	79	1,084	383	1,546	36.51	-1	14
Korba	6,598	203	2,312	875	3,390	51.38	1	92
Koriya	6,604	78	2,580	1,435	4,093	61.98	0	65
Mahasamund	4,790	4	515	424	943	19.69	0	26
Narayanpur ^T	4,653	1,129	1,696	977	3,802	81.71	-6	15
Raigarh ^T	7,086	238	1,591	782	2,611	36.85	0	21
Raipur	12,383	140	2,414	1,065	3,619	29.23	1	46
Rajnandgaon ^T	8,070	31	1,750	746	2,527	31.31	3	49
Surguja ^T	15,732	706	3,930	2,436	7,072	44.95	-1	66
Uttar Bastar Kanker ^T	7,161	489	2,206	698	3,393	47.38	-3	7
Grand total	1,35,192	7,064	32,215	16,268	55,547	41.09	-12	552

*Change compared to updated 2015 assessment.

Table 9.5.8 Forest Cover Change Matrix						(area in sq km)
Class	2017 Assessment					Total ISFR 2015 updated
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	7,001	0	0	0	0	7,001
Moderately Dense Forest	63	32,186	47	0	9	32,305
Open Forest	0	29	16,206	3	15	16,253
Scrub	0	0	13	469	31	513
Non Forest	0	0	2	80	79,038	79,120
Total ISFR 2017	7,064	32,215	16,268	552	79,093	135,192
Net Change	63	-90	15	39	-27	

9.5.6

Reasons for change detected in 2017 assessment

A decrease of 12 sq km observed in the State can be attributed to mining activities, diversion of land for developmental activities and rotational felling. Positive changes observed in some districts are due to plantation and conservation activities.