



Jharkhand

9.12.1 Introduction

Jharkhand has an area of 79,716 sq km, which is 2.42% of the geographical area of the country. Physiographically, the state has four major plateaus separated by narrow steep slopes of which the Chhotanagpur Plateau is most prominent. Jharkhand has tropical climate with annual rainfall of about 900mm. Temperature varies between 4°C to 47°C. The important rivers of the State are Son, South Koel, Baitarni, Ganga and Damodar. Jharkhand has 24 districts of which 17 are tribal and none is hill. The State has a population of 32.99 million of which rural and urban population constitutes 75.95% and 24.05% respectively. The population density of the state is 414 per sq km. The 19th Livestock census 2012 has reported a total livestock population of 18.05 million.

Table 9.12.1 Land Use Pattern

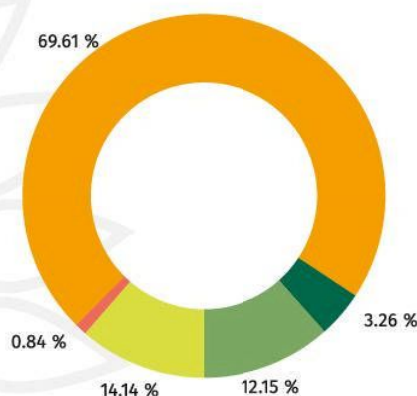
Land Use Types	Area (in 000' ha)	Percentage
Total Geographic Area	7,972	
Reporting area for land utilization	7,970	100.00
Forests	2,239	28.09
Not available for land cultivation	1,274	15.98
Permanent pastures and other grazing lands	114	1.43
Land under misc. tree crops and groves	98	1.23
Culturable wasteland	353	4.43
Fallow land other than current fallows	1,063	13.34
Current fallows	1,445	18.13
Net area sown	1,384	17.37

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

9.12.2

Forest Cover

Based on interpretation of satellite data pertaining to Oct-Dec 2015, the forest cover in the State is 23,553 sq km which is 29.55% of the State's geographical area. In terms of forest canopy density classes, the state has 2,598 sq km under very dense forest, 9,686 sq km under moderately dense forest and 11,269 sq km under open forest.



Forest cover of Jharkhand

Pie Chart showing forest cover of Jharkhand

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

9.12.3

Forest Cover within and outside Recorded Forest Area

The recorded forest area of the state is 23,605 sq km which is 29.61% of its geographical area. The Reserved, Protected and Unclassed Forests are 18.58%, 81.28% and 0.14% respectively of the recorded forest area. However as the digitized boundary of recorded forest area from the State covers only 15,971 sq km, the analysis of forest cover within and outside this area is depicted below.

Table 9.12.2 Forest Cover within and outside Recorded Forest Area

Forest Cover within Recorded Forest Area (Area in sq km)	
Very Dense Forest (VDF)	1,405
Moderately Dense Forest (MDF)	5,177
Open Forest (OF)	5,556
Total	12,138
Forest Cover outside Recorded Forest Area	
Very Dense Forest	1,193
Moderately Dense Forest	4,509
Open Forest	5,713
Total	11,415
Total Forest Cover	23,553
Tree Cover	2,922
Total Forest & Tree Cover	26,475
Of State's Geographical Area	33.21%
Of India's Forest & Tree Cover	3.30%
Per capita Forest & Tree Cover	0.08 ha

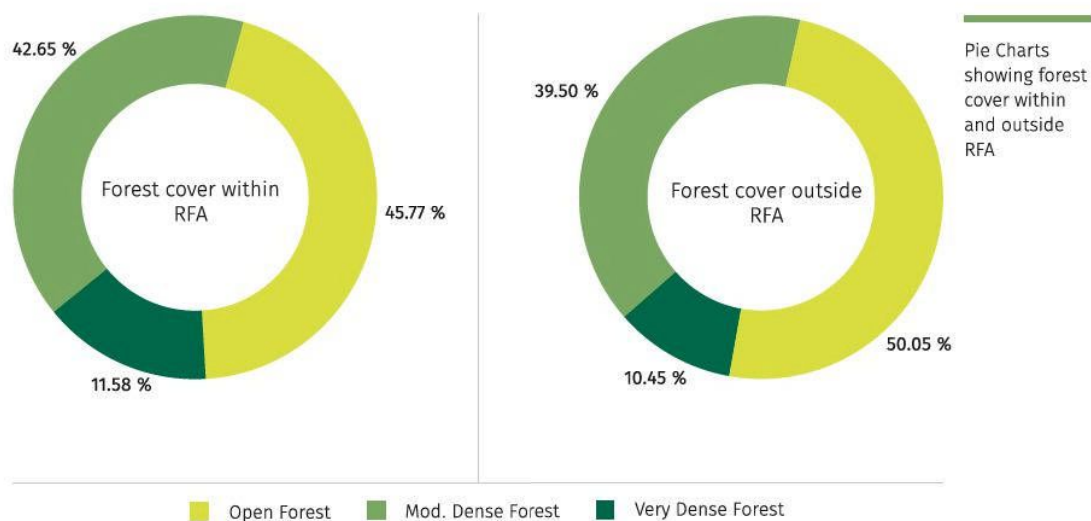


Table 9.12.3 Altitude-wise Forest Cover (Area in sq km)					
Altitude Zone	Geographical Area	VDF	MDF	OF	Total
0-500	61,272	1,025	6,706	8,335	16,066
500-1000	18,051	1,513	2,846	2,901	7,260
1000-2000	393	60	134	33	227
Total	79,716	2,598	9,686	11,269	23,553

(Based on SRTM, Digital Elevation Model)

Table 9.12.4 Forest Cover in different Patch Size Classes				
S.No.	Patch Size Range (sq km)	No. of Patches	Area(sq km)	%age
1.	$\geq 0.01 \leq 1.0$	34,725	2,247	9.54
2.	$> 1.0 \leq 10$	597	1,684	7.14
3.	$> 10 \leq 100$	73	2,055	8.73
4.	$> 100 \leq 500$	19	5,209	22.12
5.	$> 500 \leq 1000$	1	965	4.10
6.	$> 1000 \leq 5000$	3	11,393	48.37
Total		35,418	23,553	100

Table 9.12.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	117.085 m cum	2.77
Growing Stock in TOF	64.391 m cum	4.02
Potential Production of industrial wood from TOF	2.88 m cum	3.87
Bamboo bearing area within forest area of the state	4,470 sq km	2.85
Total number of culms	666 millions	2.37
Total green weight equivalent of culms	2,520 (000' tonnes)	1.34

9.12.4

Carbon Stock in forest

The total Carbon stock of forests in the State is 222,882 million tonnes (817,234 million tonnes of CO₂ equivalent) which is 3.15% of total forest carbon of the country.

9.12.5

Decadal Change in water bodies within Forest

An increase of 64 sq km has been observed in the water body coverage within Forest compared to 2005. The graphical and tabular comparison is depicted below.

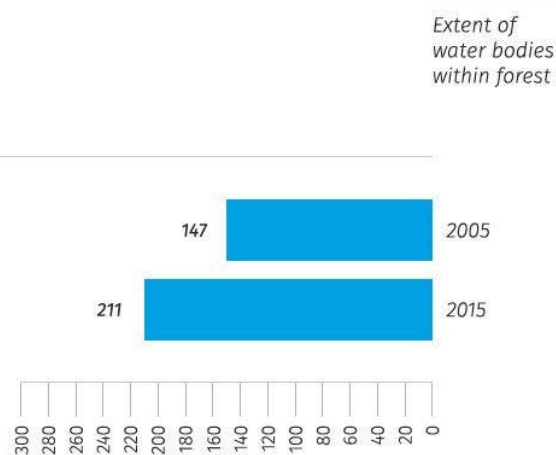


Table 9.12.6 Water bodies within Forest for the years 2005 and 2015

Area/Coverage	2005	2015
Extent of water bodies (sq km) within Forest	147	211
% of water bodies to Forest Cover	0.65	0.90

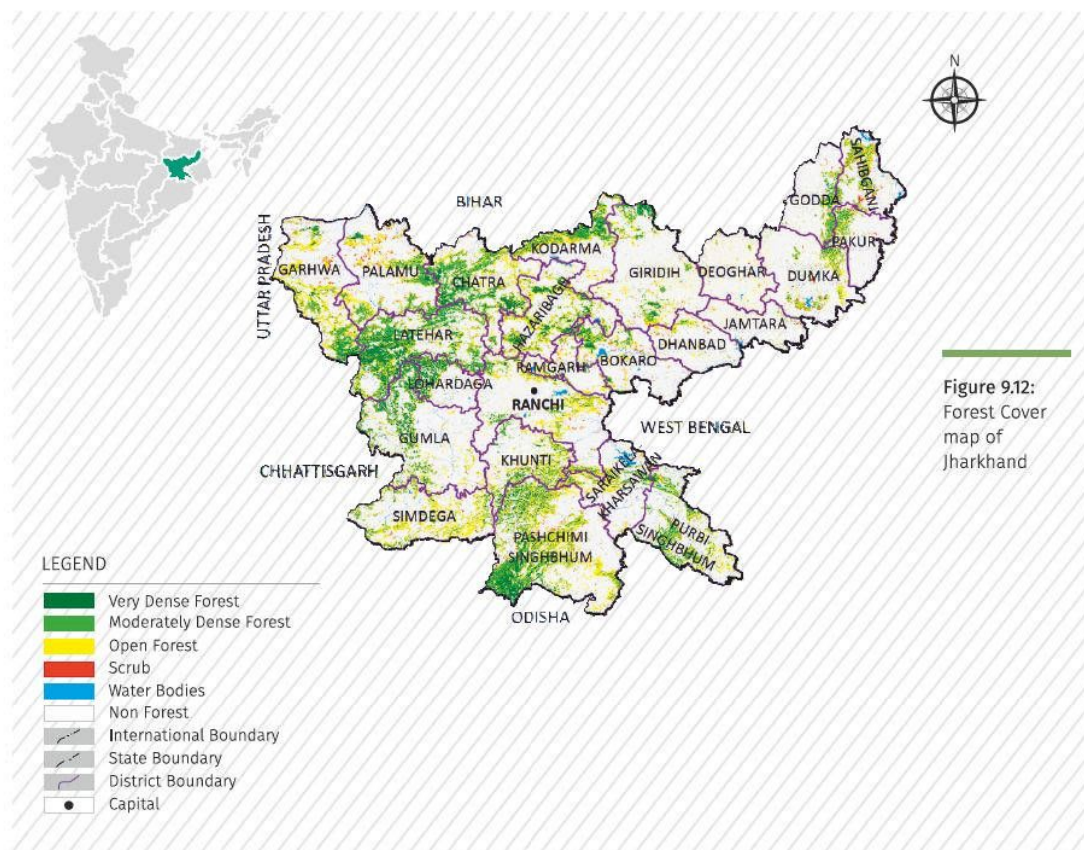


Table 9.12.7 District- wise Forest Cover							(area in sq km)	
District	Geographical Area	2017 Assessment			% of GA	Change *	Scrub	
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Bokaro	2,883	61	232	277	570	19.77	3	38
Chatra	3,718	249	864	653	1,766	47.50	-8	19
Deoghar ^T	2,477	0	14	188	202	8.16	-1	12
Dhanbad	2,040	0	44	160	204	10.00	2	20
Dumka ^T	3,761	0	259	317	576	15.32	6	44
Garhwa ^T	4,093	125	414	851	1,390	33.96	-4	62
Giridih	4,962	77	339	474	890	17.94	7	28
Godda ^T	2,266	13	270	138	421	18.58	7	16
Gumla ^T	5,360	305	586	550	1,441	26.88	-1	11
Hazaribagh	3,555	230	349	772	1,351	38.00	1	19
Jamtara ^T	1,811	0	21	76	97	5.36	2	12
Khunti ^T	2,535	73	343	488	904	35.66	-7	12
Kodarma	2,540	81	494	449	1,024	40.31	0	5

District	Geographical Area	2017 Assessment			Total	% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest				
Latehar ^T	4,291	477	1,311	616	2,404	56.02	-2	9
Lohardaga ^T	1,502	174	219	111	504	33.56	2	8
Pakur ^T	1,811	3	172	112	287	15.85	0	20
Palamu ^T	4,393	57	521	622	1,200	27.32	3	98
Pashchimi Singhbhum ^T	7,224	462	1,352	1,552	3,366	46.59	7	52
Purbi Singhbhum ^T	3,562	55	592	429	1,076	30.21	-1	22
Ramgarh	1,341	31	110	188	329	24.53	2	18
Ranchi ^T	5,097	63	364	737	1,164	22.84	10	35
Sahibganj ^T	2,063	18	258	297	573	27.78	-4	67
Saraikela-Kharsawan ^T	2,657	22	214	337	573	21.57	5	21
Simdega ^T	3,774	22	344	875	1,241	32.88	0	21
TOTAL	79,716	2,598	9,686	11,269	23,553	29.55	29	669

*Change compared to updated 2015 assessment.

Table 9.12.8 Forest Cover Change Matrix

(area in sq km)

Class	2017 Assessment					Total ISFR 2015 updated
	VDF	MDF	OF	SCRUB	NF	
Very Dense Forest	2,598	2	1	0	0	2,601
Moderately Dense Forest	0	9,684	5	1	2	9,692
Open Forest	0	0	11,231	0	0	11,231
Scrub	0	0	16	668	1	685
Non-Forest	0	0	16	0	55,491	55,507
Total ISFR 2017	2,598	9,686	11,269	669	55,494	79,716
Net Change	-3	-6	38	-16	-13	

9.12.6

Reasons for change detected in 2017 assessment

A net increase of 29 sq km has been observed in the State which can be attributed to plantation and conservation efforts. Although there is an increase of 314 sq km in forest cover within RFA, its effect on forest cover has been offset due to felling of trees outside it.