



## Rajasthan

### 9.23.1 Introduction

*Rajasthan is the largest State covering an area of 3,42,239 sq km which is 10.41% of the geographical area of the country. Based on physiography, the state can be divided into four major regions, namely the western desert with barren hills, level rocky and sandy plains, the Aravalli hills and south-eastern plateau. The climate varies from semi-arid to arid and the average annual rainfall varies from about 480mm to about 750mm and the average annual temperature ranges between 0 to 50°C. The state is drained by many rivers, which include Banas, Chambal and Luni. As per the 2011 census, Rajasthan has a population of 68.55 million accounting to 5.66 percent of India's population. The rural and urban population constitutes 51.50 million and 17.05 million respectively. The population density of the state is 200 per sq km which is lower than the national average of 382 persons per sq km. The state is a cluster of 33 districts, among which five are tribal districts. The 19<sup>th</sup> Livestock census 2012 has reported a total livestock population of 57.73 million.*

Table 9.23.1 Land Use Pattern

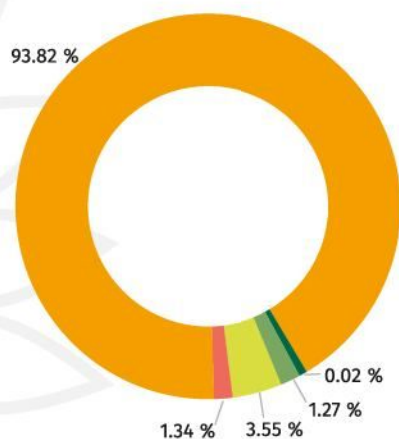
Land Use Types	Area (in 000' ha).	Percentage
Total Geographic Area	34,224	
Reporting area for land utilization	34,267	100
Forests	2,758	8.05
Not available for land cultivation	4,274	12.47
Permanent pastures and other grazing lands	1,694	4.94
Land under misc. tree crops and groves	24	0.07
Culturable wasteland	4,000	11.67
Fallow land other than current fallows	1,847	5.39
Current fallows	1,403	4.09
Net area sown	18,268	53.32

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

### 9.23.2

#### Forest Cover

Based on interpretation of satellite data pertaining to Oct-Dec 2015, the forest cover in the State is 16,572 sq km which is 4.84% of the State's geographical area. In terms of forest canopy density classes, the state has 78 sq km under very dense forest, 4,340 sq km under moderately dense forest and 12,154 sq km under open forest.



### Forest cover of Rajasthan

Pie Chart showing forest cover of Rajasthan

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

9.23.3

## Forest Cover within and outside Recorded Forest Area

The recorded forest area of the state is 32,737 sq km which is 9.57% of its geographical area. The Reserved, Protected and Unclassed Forests are 38.11%, 55.64% and 6.25% respectively of the recorded forest area. However, as the digitized boundary of recorded forest area from the State covers only an area of 23,105 sq km, the analysis of forest cover within and outside this area is depicted below.

Table 9.23.2 Forest Cover within and outside Recorded Forest Area

Forest Cover within Recorded Forest Area (Area in sq km)	
Very Dense Forest (VDF)	14
Moderately Dense Forest (MDF)	1,923
Open Forest (OF)	6,077
<b>Total</b>	<b>8,014</b>
Forest Cover outside Recorded Forest Area	
Very Dense Forest	64
Moderately Dense Forest	2,417
Open Forest	6,077
<b>Total</b>	<b>8,558</b>
<b>Total Forest Cover</b>	<b>16,572</b>
<b>Tree Cover</b>	<b>8,266</b>
<b>Total Forest &amp; Tree Cover</b>	<b>24,838</b>
Of State's Geographical Area	7.26 %
Of India's Forest & Tree Cover	3.10 %
Per capita Forest & Tree Cover	0.04 ha

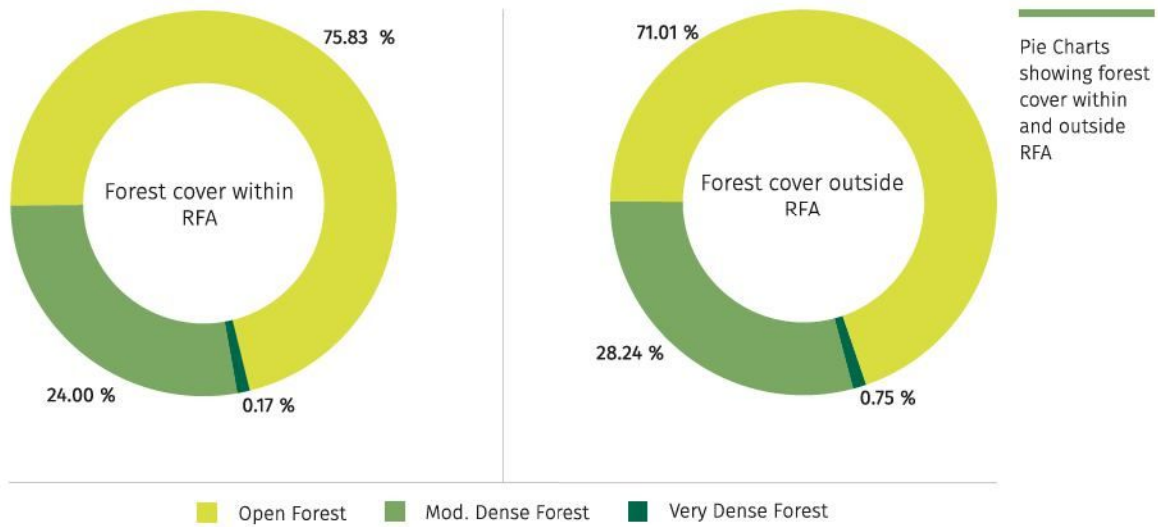


Table 9.23.3 Altitude-wise Forest Cover (Area in sq km)

Altitude Zone (m)	Geographical Area	VDF	MDF	OF	Total
0-500	3,24,954	27	2,535	9,353	11,915
500-1000	17,070	51	1,691	2,750	4,492
1000-2000	215	0	114	51	165
<b>Total</b>	<b>3,42,239</b>	<b>78</b>	<b>4,340</b>	<b>12,154</b>	<b>16,572</b>

(Based on SRTM, Digital Elevation Model)

Table 9.23.4 Forest Cover in different Patch Size Classes

S. No.	Patch Size Range in sq km	No. of Patches	Area(sq km)	%age
1	$\geq 0.01 \leq 1.0$	33,955	3,308	19.96
2	$> 1.0 \leq 10$	1094	2,819	17.02
3	$> 10 \leq 100$	145	3,805	22.96
4	$> 100 \leq 500$	10	2,367	14.28
5	$> 500 \leq 1000$	6	4,273	25.78
	<b>Total</b>	<b>35,210</b>	<b>16,572</b>	<b>100</b>

Table 9.23.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	46.274 m cum	1.10
Growing Stock in TOF	81.865 m cum	5.10
Potential Production of industrial wood from TOF	5.77 m cum	7.74
Bamboo bearing area within forest area of the state	1,976 sq km	1.26
Total number of culms	831 millions	2.96
Total green weight equivalent of culms	3,661 (000' tonnes)	1.94

#### 9.23.4

### Carbon Stock in forest

The total Carbon stock of forests in the State is 89.660 million tonnes (328.753 million tonnes of CO<sub>2</sub> equivalent) which is 1.27% of total forest carbon of the country.

#### 9.23.5

### Decadal Change in water bodies within Forest

An increase of 40 sq km has been observed in the water body coverage within forest compared to 2005. The graphical and tabular comparison is depicted below.

Extent of water bodies within forest

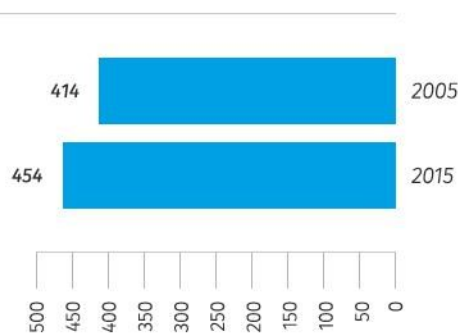


Table 9.23.6 Water bodies within Forest for the years 2005 and 2015

Area/Coverage	2005	2015
Extent of water bodies (sq km) within Forest	414	454
% of water bodies to Forest Cover	2.58	2.74



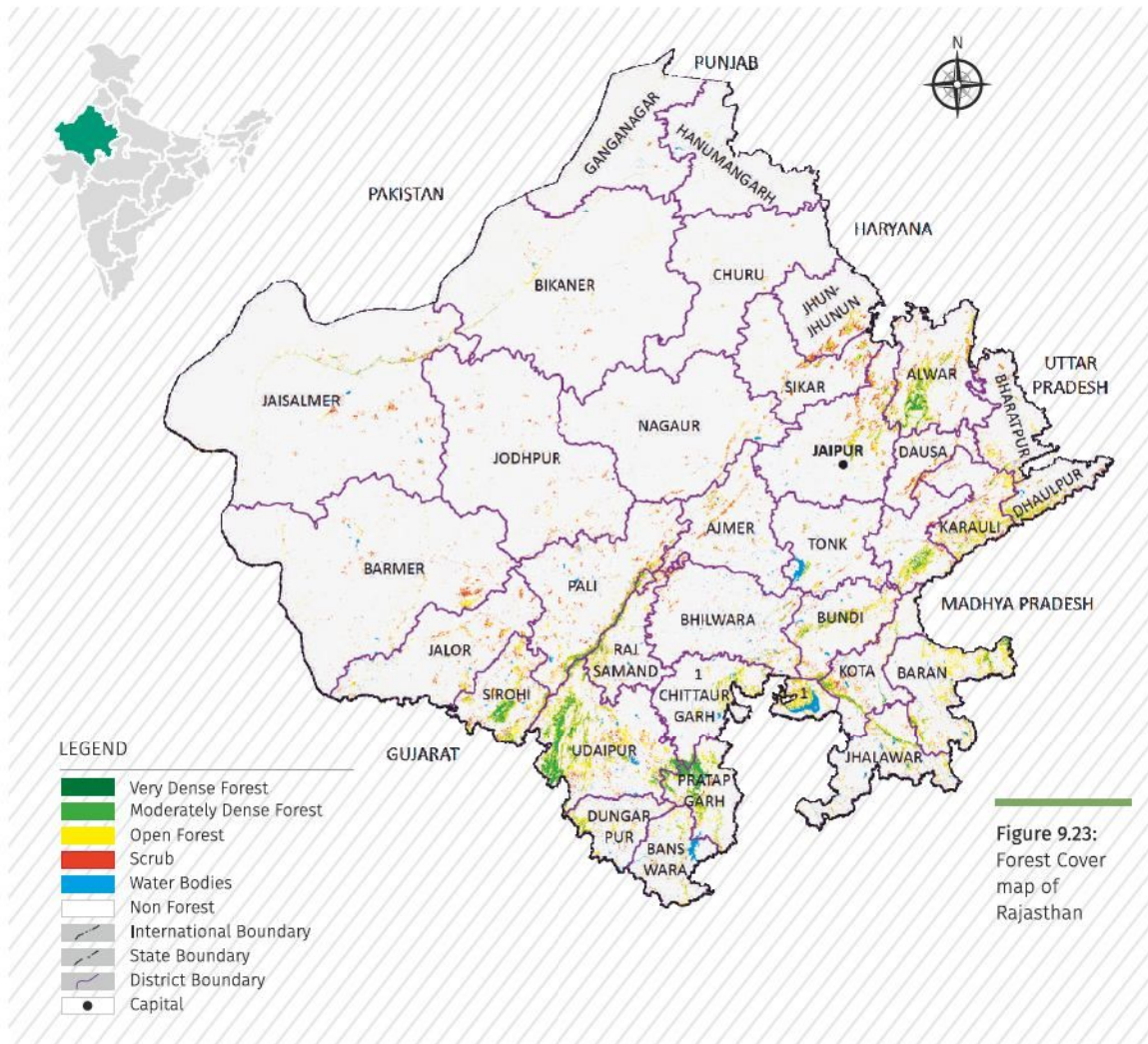


Figure 9.23:  
Forest Cover  
map of  
Rajasthan

Table 9.23.7 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	
Ajmer	8,481	0	43	256	299	3.53	13	202	
Alwar	8,380	59	335	803	1,197	14.28	-2	246	
Banswara <sup>T</sup>	4,522	0	39	222	261	5.77	2	53	
Baran	6,992	0	155	858	1013	14.49	-44	103	
Barmer	2,8387	0	4	269	273	0.96	86	205	
Bharatpur	5,066	0	22	207	229	4.52	13	79	
Bhilwara	10,455	0	31	190	221	2.11	-1	158	
Bikaner	30,239	1	27	219	247	0.82	28	47	
Bundi	5,776	1	138	419	558	9.66	82	151	
Chittaurgarh	7,822	0	220	769	989	12.64	-40	86	

District	Geographical Area	2017 Assessment			Total	% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest				
Churu	13,835	0	3	79	82	0.59	-4	22
Dausa	3,432	0	12	105	117	3.41	2	99
Dhaulpur	3,033	0	80	339	419	13.81	-7	70
Dungarpur <sup>T</sup>	3,770	0	43	248	291	7.72	41	61
Ganganagar	10,978	0	10	103	113	1.03	33	13
Hanumangarh	9,656	1	7	82	90	0.93	-12	1
Jaipur	11,143	12	97	443	552	4.95	49	286
Jaisalmer	38,401	4	53	256	313	0.82	88	227
Jalor	10,640	0	18	257	275	2.58	77	209
Jhalawar	6,219	0	83	356	439	7.06	34	102
Jhunjhunun	5,928	0	21	175	196	3.31	3	188
Jodhpur	22,850	0	4	101	105	0.46	10	167
Karauli	5,524	0	95	775	870	15.75	-7	273
Kota	5,217	0	154	396	550	10.54	-29	135
Nagaur	17,718	0	15	128	143	0.81	22	103
Pali	12,387	0	210	464	674	5.44	-9	308
Pratapgarh <sup>T</sup>	4,449	0	560	484	1,044	23.47	-48	44
Rajsamand	4,655	0	135	376	511	10.98	30	108
Sawai Madhopur	4,498	0	154	312	466	10.36	30	114
Sikar	7,732	0	31	161	192	2.48	1	187
Sirohi <sup>T</sup>	5,136	0	302	612	914	17.80	3	206
Tonk	7,194	0	27	138	165	2.29	-4	56
Udaipur <sup>T</sup>	11,724	0	1,212	1,552	2,764	23.58	26	270
<b>Total</b>	<b>3,42,239</b>	<b>78</b>	<b>4,340</b>	<b>12,154</b>	<b>16,572</b>	<b>4.84</b>	<b>466</b>	<b>4,579</b>

\*Change compared to updated 2015 assessment.

Table 9.23.8 Forest Cover Change Matrix

(area in sq km)

Class	2017 Assessment				Total ISFR 2015 updated
	VDF	MDF	OF	Scrub	
Very Dense Forest	75	1	0	0	77
Moderately Dense Forest	3	3,788	500	7	4,414
Open Forest	0	474	9,505	217	11,615
Scrub	0	9	432	3,032	4,280
Non Forest	0	68	1717	1323	3,18,745
<b>Total ISFR 2017</b>	<b>78</b>	<b>4,340</b>	<b>12,154</b>	<b>4,579</b>	<b>3,21,088</b>
Net Change	1	-74	539	299	-765

### 9.23.6

## Reasons for change detected in 2017 assessment

A net gain of 466 sq km has been observed in forest cover of the State which can be attributed to plantations, regeneration of fast growing species and conservation efforts.