

BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO. 555/2024

IN THE MATTER OF:

News item titled "India lost 2.33 million hectares of tree cover since 2000 Global Forest Watch" appearing in The Indian Express date 13.04.2024.

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Respondent No. 25

THROUGH


(Mahendra Kumar Sharma)
Working Plan Officer
Jaipur

Mr. Mahendra Kumar Sharma
Working Plan Officer, Jaipur
OIC for State of Rajasthan
through Secretary of the Department of
Environment and Climate Change.

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SHORT FACTUAL REPLY TO THE ORIGINAL APPLICATION NO. 555/2024 ON BEHALF OF THE RESPONDENT NO. 25.

MOST RESPECTFULLY SHOWETH:

1. The present Short Factual Reply is being filed on behalf of the State of Rajasthan through Secretary of the Department of Environment and Climate change i.e., Respondent No. 25 (*hereinafter referred to as 'Answering Respondent'*) to the Original Application (*hereinafter referred to as 'OA'*).
2. The present OA is an outcome of suo moto cognizance taken up by this Hon'ble Tribunal in view of the news item titled "India lost 2.33 million hectares of tree cover since 2000 Global Forest Watch" appearing in The Indian Express dated 13.04.2024.
3. It is humbly submitted that the Answering Respondent reserves the right to prefer a detailed and further reply, as and when required and/or directed by this Hon'ble Tribunal.


(Mahendra Kumar Sharma)
Working Plan Officer
Jaipur

4. It is further submitted that the new article in question raises crucial environmental concerns to be redressed by this Hon'ble Tribunal and the Answering Respondent is committed to assist this Hon'ble Tribunal for the same.

BRIEF FACTUAL SUBMISSIONS

5. The Answering Respondent after assessing the impact, in relevance of the forest area, has been actively taking various constructive steps to maintain and upkeep the forest area. It is of important consideration for the Answering Respondent to understand that the forest is lifeline for determining the social and economic impact of forest.
6. In view of the same, as per Rajasthan Forest Policy, 2023, the State of Rajasthan has Recorded Forest Area (RFA) of 32,869.69 sq. km in which 12,176.28 sq. km is Reserved Forest, 18,588.39 sq. km is Protected Forest, and 2105.03 sq. km is Unclassified Forest. According to the Indian State of Forest Report (*hereinafter referred to as 'ISFR'*), the term '**Forest Cover**' as used in the 'SFR' refers to all lands more than one hectare in area, having a tree canopy density of more than 10% and the term '**Tree Cover**' refers to the trees occurring in patches of size less than 1 hectare including scattered trees.
7. The Answering Respondent is committed towards conservation and development of forests in consonance with the socio-ecological requirements, having direct impact on the socio-economic conditions. It is highlighted that conservation ethos is well entrenched in all communities within the State, where people protect, conserve and nurture wildlife and biodiversity on their own. Further, the State of Rajasthan is well endowed


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and rich in wildlife and contains a range of prey and predator fauna which necessitates maintaining and conserving the forest areas from time immemorial.

8. It is humbly submitted that the Answering Respondent has been consistently undertaking substantial efforts over the past 20 years to enhance forest and tree cover across the State of Rajasthan. This has been achieved through the implementation of various initiatives, including Rajasthan Forestry and Biodiversity Project-1 (RFBP-1), Rajasthan Forestry and Biodiversity Project-2 (RFBP-2), CAMPA Fund, State Plan Fund, RFBDP project, Tree Outside Forest Area in Rajasthan (TOFR) and many more. The outcome of these initiatives is the increase in forest cover in the State in the last 15 to 20 years.
9. It is further highlighted that Compensatory Afforestation Fund and Compensatory Afforestation Fund Management and Planning Authority (CAMPA) were established in the year 2004. This effort helps to mitigate the impact of diversion of forest land for non-forest purposes by making sure through a well-defined institutional mechanism, that the funds are released and utilized quickly, efficiently and transparently for afforestation. It further promotes afforestation and development activities in order to compensate for forest land that is intended to be diverted to non-forest uses. Further, in the State of Rajasthan, the State CAMPA, established in 2018, formulates Annual Plan of Operation (APOs) every year to carry out its operations in the forestry sector. The activities of CAMPA include compensatory afforestation, plantations under Net Present Value scheme, maintenance of permanent nurseries, forest protection, natural forest management, biodiversity conservation, wildlife management, research,


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capacity building, strengthening and development of infrastructure for forest protection and management, information technology and communication, forest research, working plan works, awareness generation, and other allied activities etc. These activities and policies have ensured increase in the forest cover and tree cover in the State.

10. Moreover, the Answering Respondent has been working on the Rajasthan Forestry and Biodiversity Development Project (RFBDP) with a following objectives :-

- a. To protect and develop natural forests of project area.
- b. To improve the conservation status of threatened taxa.
- c. Grassland restoration/creation with the objectives of habitat management and carbon sequestration.
- d. To promote sustainable use of biological resources: preservation and restoration of habitats including wetlands and documentation of processes involved.
- e. Streamline forest administration, improve interface with communities, and create opportunities for sustainable local livelihoods both direct and indirect.
- f. Management of wildlife habitat through the use of latest advances of science and technology: species restoration and documentation of processes involved.

11. The status of Forest cover and Tree cover in the State of Rajasthan as per the Indian State of Forest Reports from year 1999 to 2023 is mentioned in the below table:


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Year	Forest Cover (sq. km)	Tree Cover (sq. km)
1999	13,871.00	5,286.00
2001	16,367.00	5,286.00
2003	15,826.00	8638.00
2005	15,850.00	8,379.00
2009	16,036.00	8,274.00
2011	16,087.00	8,272.00
2013	16,086.00	7,860.00
2015	16,171.00	8,269.00
2017	16,572.00	8,266.00
2019	16,629.51	8,112.00
2021	16,654.96	8,733.00
2023	16,548.21	10,841.12

A True Copy of Relevant extracts of the Indian State of Forest Reports depicting Forest Cover and Tree Cover in the State of Rajasthan from year 1999 to 2023 are annexed and marked as **Annexure R/1 (Colly)**.

It is evident from the ISFR that Forest and Tree Cover in the State has significantly increased from the year 1999 to 2023. Therefore, the efforts taken by the Answering Respondent over the years have shown its impact wherein the forest cover has increased from 13,871.00 sq. km to 16,548.21 sq. km and tree cover has increased from 5,286.00 sq. km to 10,841.12 sq. km.

12. Over the years, the Answering Respondent has accomplished a significant increase in its forest and tree cover, demonstrating a strong commitment to environmental sustainability and stability. This positive growth reflects the effectiveness of various afforestation initiatives, conservation programs,


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 Jalpur

and sustainable land management practices adopted by the State Government. The efforts of the State of Rajasthan in enhancing green cover, restoring degraded ecosystems, and promoting ecological balance are crucial in mitigating climate change and preserving its rich biodiversity. The continuous improvement in forest and tree cover is a testament to State's dedication to fostering a greener and more resilient environment for future generations.

13. The Answering Respondent undertakes to comply with each and every order of this Hon'ble Tribunal in its true spirit with best of its capacity at its earliest.

Respondent No. 25

THROUGH


(Mahendra Kumar Sharma)
Working Plan Officer
Jaipur


Mr. Mahendra Kumar Sharma

Working Plan Officer, Jaipur
OIC for State of Rajasthan
through Secretary of the Department of
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BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
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IN THE MATTER OF:

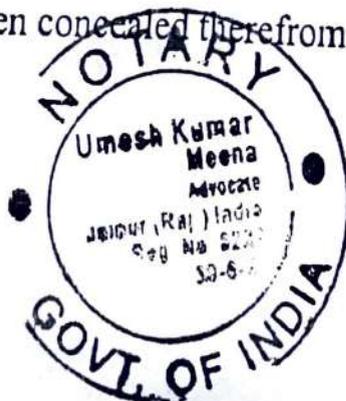
News item titled "India lost 2.33 million hectares of tree cover since 2000 Global Forest Watch" appearing in The Indian Express date 13.04.2024.

AFFIDAVIT

I, Mahendra Kumar Sharma, S/o Shri Mangal Ram Sharma, aged about 56 years, at present, working as Working Plan Officer, Jaipur, Rajasthan solemnly swear and affirm on as under:-

1. That I am the Officer in Charge (OIC) in the above captioned matter for the State of Rajasthan through Secretary of the Department of Environment and Climate Change (Respondent No. 25). I am well conversant with the facts and circumstances of the case.
2. I state that I have read and understood the contents of the accompanying Reply which has been drafted by my counsel under my instructions and the same has been explained to me. I say that the contents of the same are true and correct to the best of my knowledge and belief.
3. That the submissions made therein are believed to be true and nothing material has been concealed therefrom.


 (Mahendra Kumar Sharma)
 Working Plan Officer
 Jaipur



01 APR 2025
 ATTESTED

 NOTARY PUBLIC JAIPUR
 RAJ INDIA

4. I say that Annexures, in the instant Reply, are the true and correct copy, true and typed copy and true and translated copy of the original.

35
(Mahendra Kumar Sharma)
Working Plan Officer
DEPONENT
Jaipur

VERIFICATION

I, the Deponent above named do hereby solemnly affirm that contents of Paragraphs no. 1 to 4 of the foregoing Affidavit are true and correct to the best of my knowledge and belief. No part of it is false and nothing material has been concealed therefrom.

Verified at Jaipur on this day 1st of April 2025.

35
(Mahendra Kumar Sharma)
Working Plan Officer
DEPONENT
Jaipur



ATTESTED
[Signature]
NOTARY PUBLIC JAIPUR
(RAJ) INDIA

01 APR 2025

Table 2.1.b : Extent of Dense forest, Open forest and Mangrove in States/UTs

State/UT	Dense forest	Open forest	Mangrove	Total forest cover	(sq.km)	
					Percent of geographic area	Scrub
Andhra Pradesh	24,190	19,642	397	44,229	16.08	9,559
Arunachal Pradesh	57,756	11,091	0	68,847	82.21	104
Assam	14,517	9,171	0	23,688	30.20	324
Bihar	13,274	13,200	0	26,474	15.23	1,914
Delhi	35	53	0	88	5.93	3
Goa	995	-251	5	1,251	33.79	16
Gujarat	6,430	5,504	1,031	12,965	6.61	2,948
Haryana	449	515	0	964	2.18	191
Himachal Pradesh	9,120	3,962	0	13,082	23.50	566
Jammu & Kashmir	11,019	9,422	0	20,441	9.20	3,089
Karnataka	24,832	7,632	3	32,467	16.93	4,489
Kerala	8,429	1,894	0	10,323	26.56	91
Madhya Pradesh	81,619	50,211	0	131,830	29.73	3,853
Maharashtra	26,613	19,951	108	46,672	15.17	7,160
Manipur	5,936	11,448	0	17,384	77.86	177
Meghalaya	5,925	9,708	0	15,633	69.70	261
Mizoram	3,786	14,552	0	18,338	86.99	125
Nagaland	5,137	9,027	0	14,164	85.43	14
Orissa	26,073	20,745	215	47,033	30.21	5,439
Punjab	517	895	0	1,412	2.80	107
Rajasthan	4,309	9,562	0	13,871	4.05	6,921
Sikkim	2,363	755	0	3,118	43.94	386
Tamil Nadu	8,659	8,398	21	17,078	13.13	2,836
Tripura	2,228	3,517	0	5,745	54.79	38
Uttar Pradesh	22,902	11,114	0	34,016	11.55	1,177
West Bengal	3,565	2,672	2,125	8,362	9.42	98
Andaman & Nicobar Islands	6,515	125	966	7,606	92.21	0
Chandigarh	6	1	0	7	6.14	0
Dadra & Nagar Haveli	159	43	0	202	41.14	10
Daman & Diu	0	3	0	3	2.68	0
Lakshdweep	0	0	0	0	0	0
Pondicherry	0	0	0	0	0	0
Total	377,358	255,064	4,871	637,293	19.39	51,896

2.2 Change in Forest Cover

The change in forest cover of the country, as per the present and the preceding assessments, is given in Table 2.2.a. The net increase in the forest cover of the country is 3,896 sq.km. The dense forest has increased by 10,098 sq.km and mangrove by 44 sq.km, whereas open forest has decreased by 6,246 sq.km.

The forest cover in different states and union territories in the present and preceding assessments, along with the data period of the respective assessments, is given in Table 2.2.b. The table reveals that the states of Andhra Pradesh, Arunachal Pradesh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu,

Tripura, Uttar Pradesh and West Bengal have registered increase in the forest cover. The States and the Union Territories showing decrease in forest cover are Assam, Bihar, Goa, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Andaman & Nicobar Islands and Dadra & Nagar

Table 2.2.a: Class-wise change in forest cover

Class	Assessment		Change
	1999	1997	
Dense forest	377,358	367,260	+10,098
Open forest	255,064	261,310	-6,246
Mangrove	4,871	4,827	+44
Total	637,293	633,397	+3,896

Table 2.02 Forest cover in States/UTs in India

(Area in km²)

State/UT	Geographic Area	Forest Cover				Scrub
		Dense	Open	Total	Percent	
Andhra Pradesh	275,069	25,827	18,810	44,637	16.23	9,907
Arunachal Pradesh	83,743	53,932	14,113	68,045	81.25	141
Assam	78,438	15,830	11,884	27,714	35.33	224
Bihar	94,163	3,372	2,348	5,720	6.07	122
Chhattisgarh	135,191	37,880	18,568	56,448	41.75	200
Delhi	1,483	38	73	111	7.51	4
Goa	3,702	1,785	310	2,095	56.59	0
Gujarat	196,022	8,673	6,479	15,152	7.73	2,408
Haryana	44,212	1,139	615	1,754	3.97	88
Himachal Pradesh	55,673	10,429	3,931	14,360	25.79	566
Jammu & Kashmir	222,236	11,848	9,389	21,237	9.56	3,087
Jharkhand	79,714	11,787	10,850	22,637	28.40	976
Karnataka	191,791	26,156	10,835	36,991	19.29	3,245
Kerala	38,863	11,772	3,788	15,560	40.04	71
Madhya Pradesh	308,245	44,384	32,881	77,265	25.07	3,452
Maharashtra	307,713	30,894	16,588	47,482	15.43	6,137
Manipur	22,327	5,710	11,216	16,926	75.81	190
Meghalaya	22,429	5,681	9,903	15,584	69.48	259
Mizoram	21,081	8,936	8,558	17,494	82.98	467
Nagaland	16,579	5,393	7,952	13,345	80.49	47
Orissa	155,707	27,972	20,866	48,838	31.36	5,782
Punjab	50,362	1,549	883	2,432	4.83	30
Rajasthan	342,239	6,322	10,045	16,367	4.78	4,925
Sikkim	7,096	2,391	802	3,193	45.00	341
Tamilnadu	130,058	12,499	8,983	21,482	16.52	3,180
Tripura	10,486	3,463	3,602	7,065	67.38	44
Uttar Pradesh	240,928	8,965	4,781	13,746	5.71	678
Uttaranchal	53,483	19,023	4,915	23,938	44.76	598
West Bengal	88,752	6,346	4,347	10,693	12.05	149
Andaman & Nicobar	8,249	6,593	337	6,930	84.01	0
Chandigarh	114	5	4	9	7.51	0
Dadra & Nagar Haveli	491	151	68	219	44.60	0
Daman & Diu	112	2	4	6	5.53	0
Lakshdweep	32	27	0	27	85.91	0
Pondicherry	480	35	1	36	7.45	0
Total	3,287,263	416,809	258,729	675,538	20.55	47,318

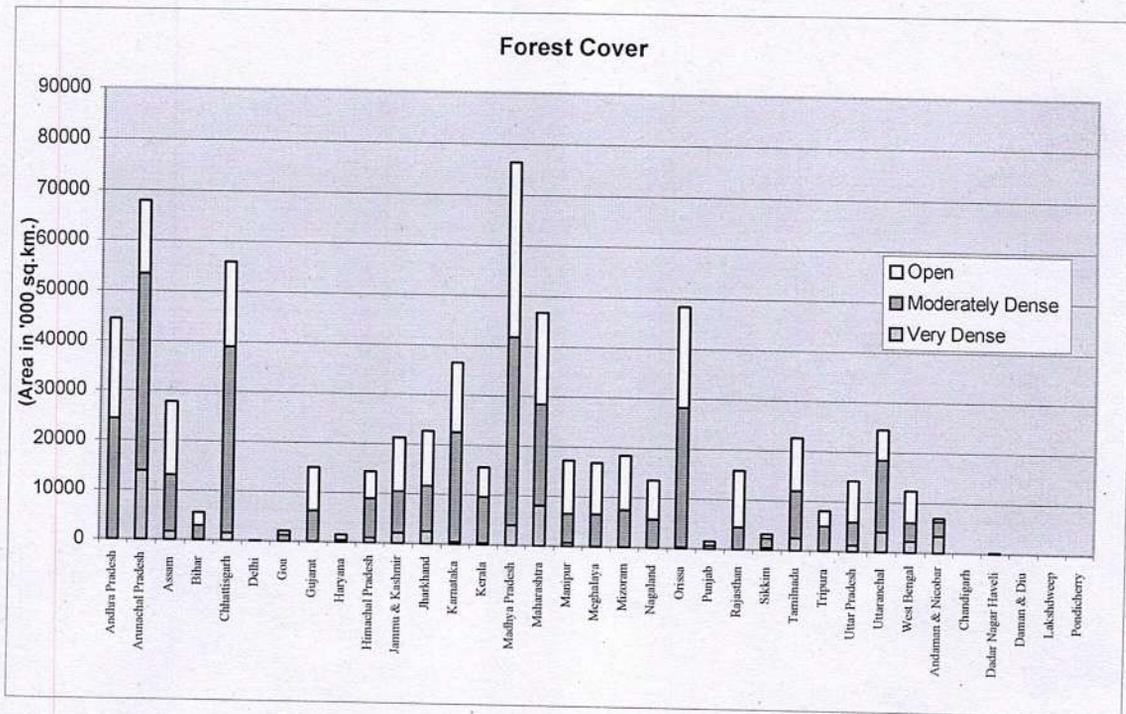


Figure 2.04: Forest Cover in States and UTs

2.06 State/UT wise Forest Cover

The State/UT wise forest cover in the country is shown in Table 2.02 and as bar chart in Figure 2.03. It shows that Madhya Pradesh with 76,429 km² has the maximum area under forest cover, followed by Arunachal Pradesh (68,019 km²) and Chhattisgarh (55,998 km²). Considering proportion of geographic area under forest cover, Mizoram has the maximum percentage (87.42 percent). It is followed by Andaman & Nicobar Islands (84.42 percent), Nagaland (82.09 percent) and Arunachal Pradesh (81.22 percent).

Table 2.02 Forest cover in States/UTs in India (Area in km²)

State/UT	Geographic Area	Forest Cover				Percent	Scrub
		VDF	MDF	OF	Total		
Andhra Pradesh	275,069	23	24,356	20,040	44,419	16.15	9,748
Arunachal Pradesh	83,743	13,907	39,604	14,508	68,019	81.22	116
Assam	78,438	1,684	11,358	14,784	27,826	35.48	219
Bihar	94,163	76	2,951	2,531	5,558	5.90	150
Chhattisgarh	135,191	1,540	37,440	17,018	55,998	41.42	88
Delhi	1,483	0	52	118	170	11.47	1
Goa	3,702	0	1,255	901	2,156	58.24	0
Gujarat	196,022	114	6,231	8,601	14,946	7.62	1,743

Haryana	44,212	2	518	997	1,517	3.43	68
Himachal Pradesh	55,673	1,093	7,883	5,377	14,353	25.78	389
Jammu & Kashmir	222,236	2,102	8,395	10,770	21,267	9.57	2,947
Jharkhand	79,714	2,544	9,137	11,035	22,716	28.50	807
Karnataka	191,791	431	22,030	13,988	36,449	19.00	3,141
Kerala	38,863	334	9,294	5,949	15,577	40.08	72
Madhya Pradesh	308,245	4,000	37,843	34,586	76,429	24.79	2,378
Maharashtra	307,713	8,070	20,317	18,478	46,865	15.23	4,175
Manipur	22,327	720	5,818	10,681	17,219	77.12	74
Meghalaya	22,429	168	6,323	10,348	16,839	75.08	169
Mizoram	21,081	84	7,404	10,942	18,430	87.42	274
Nagaland	16,579	57	5,650	7,902	13,609	82.09	231
Orissa	155,707	288	27,882	20,196	48,366	31.06	5,346
Punjab	50,362	0	743	837	1,580	3.14	22
Rajasthan	342,239	14	4,482	11,330	15,826	4.62	4,564
Sikkim	7,096	458	1,904	900	3,262	45.97	360
Tamilnadu	130,058	2,440	9,567	10,636	22,643	17.41	2,040
Tripura	10,486	58	4,988	3,047	8,093	77.18	1
Uttar Pradesh	240,928	1,297	4,699	8,122	14,118	5.86	749
Uttaranchal	53,483	4,002	14,420	6,043	24,465	45.74	320
West Bengal	88,752	2,303	3,742	6,298	12,343	13.91	75
Andaman & Nicobar	8,249	3,475	2,809	680	6,964	84.42	1
Chandigarh	114	1	8	6	15	13.16	1
Dadra & Nagar Haveli	491	0	145	80	225	45.82	-
Daman & Diu	112	0	2	6	8	7.45	-
Lakshdweep	32	0	12	11	23	71.88	-
Pondicherry	480	0	17	23	40	8.33	-
Total	3,287,263	51,285	339,279	287,769	678,333	20.64	40,269

2.07 Forest Cover in Hill Districts

The National Forest Policy (1988), aims at having a minimum of one third of geographic area of the country under forest and tree cover and enjoins maintaining two third of the area in hills under forest cover in order to prevent erosion and land degradation and also to ensure maintenance of ecological balance and environmental stability. It is therefore felt desirable to know the extent of forest cover in the hill districts in the country. With this objective FSI started assessing forest cover in the hill districts of the country since 1997.

The classification of hill districts and *talukas* is as adopted by the Planning Commission. A hill *taluka* is one where altitude is above 500 m from the mean sea level. The Planning Commission has applied this criterion for Hill Areas and Western Ghats Development Programmes. Since forest cover assessment is done taking district as a unit, only those districts have been categorised as hill districts where the total area of hill *talukas* exceeds 50 percent of the geographic area of a district. The abstract of forest

State of Forest Report 2005

Eucalyptus, Neem and Acacia species and regrowth of Anogeissus pendula & Prosopis juliflora as observed by FSI officials during field verification.

moderately dense forest, open forest and scrub, along with the changes compared to 2003 assessment, have been provided in Table 8.23c.

The district wise details of very dense forest,

Table 8.23b: Forest cover change matrix

(area in km²)

2003 Assessment(Data of Oct.-Dec. 2002)	2005 Assessment (Data of Oct.-Dec. 2004)					Total 2003
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	14	0	0	0	0	14
Moderately Dense Forest	0	4,454	0	0	0	4,454
Open Forest	0	2	11,340	0	11	11,353
Scrub	0	0	15	4,513	10	4,538
Non-Forest	0	0	25	14	321,841	321,880
Total 2005	14	4,456	11,380	4,527	321,862	342,239
Net Change	0	2	27	-11	-18	

Table 8.23c: District-wise forest cover
Number of Districts: 29*(area in km²)

District	Geographic area	2005 Assessment				Percent of G.A.	Change	Scrub
		Very dense forest	Mod. dense forest	Open forest	Total			
Ajmer	8,481	0	50	222	272	3.21	1	226
Alwar	8,380	14	369	828	1,211	14.45	1	250
Banswara ^T	5,037	0	48	322	370	7.35	1	97
Baran	6,992	0	135	948	1,083	15.49	1	143
Barmer	28,387	0	12	157	169	0.60	0	106
Bharatpur	5,066	0	38	198	236	4.66	0	83
Bhilwara	10,455	0	34	186	220	2.10	2	136
Bikaner	27,244	0	37	162	199	0.73	0	42
Bundi	5,550	0	143	302	445	8.02	2	150
Chittorgarh ^T	10,856	0	576	1,098	1,674	15.42	-4	186
Churu	16,830	0	8	80	88	0.52	-1	10
Dhaulpur	3,033	0	101	318	419	13.81	1	57
Dungarpur ^T	3,770	0	17	235	252	6.68	1	55
Ganganagar	20,634	0	34	135	169	0.82	3	3
Jaipur	14,069	0	113	510	623	4.43	2	435
Jaisalmer	38,401	0	48	108	156	0.41	8	32
Jalore	10,640	0	17	180	197	1.85	-4	179
Jhalawar	6,219	0	83	312	395	6.35	0	120
Jhunjhun	5,928	0	27	161	188	3.17	0	176
Jodhpur	22,850	0	5	87	92	0.40	0	105
Kota	5,443	0	159	454	613	11.26	2	114

Forest and Tree Resources
in States and Union Territories

..... Continued

(area in km²)

District	Geographic area	2005 Assessment				Percent of G.A.	Change	Scrub
		Very dense forest	Mod. dense forest	Open forest	Total			
Nagaur	17,718	0	11	102	113	0.64	0	105
Pali	12,387	0	209	410	619	5.00	5	251
Rajsamand	3,860	0	130	288	418	10.83	1	61
Sawai Madhopur	10,528	0	298	996	1,294	12.29	1	470
Sikar	7,732	0	37	152	189	2.44	0	177
Sirohi ^T	5,136	0	305	580	885	17.23	0	181
Tonk	7,194	0	35	132	167	2.32	0	58
Udaipur ^T	13,419	0	1,377	1,717	3,094	23.06	6	519
Total	342,239	14	4,456	11,380	15,850	4.63	29	4527

* Boundaries of three new districts (Dausa, Hanumangarh and Karauli) not available. The data is given jointly with that of the parent districts.

8.23.6 Tree Cover

Tree cover of Rajasthan has been estimated following a sampling based approach. A separate exercise was carried out where high resolution satellite data (5.8m) has been used for identification of tree patches for field inventory.

Field inventory has been carried out on 1,493 sample plots spread over nine districts of the State between 2002-06 and the estimated tree cover in the State is 8,379 km².

The forest and tree cover of the State is presented in the Table 8.23d.

Table 8.23d: Forest & tree cover

(area in km²)

Category	Area	% of Geographical Area
Tree Cover	8379	2.45
Forest Cover	15,850	4.63
Forest & Tree Cover	24,229	7.08

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Table 7.23.2: Forest cover change matrix

2005 Assessment (Data of Oct - Dec 2004)	2007 (Data of Oct - Dec 2006)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	72	0	0	0	0	72
Moderately Dense Forest	0	4,443	6	0	5	4,454
Open Forest	0	7	11,414	6	59	11,486
Scrub	0	0	19	4,298	39	4,356
Non-Forest	0	0	75	43	321,753	321,871
Total of 2007	72	4,450	11,514	4,347	321,856	342,239
Net Change	0	-4	28	-9	-15	

Table 7.23.3: District-wise forest cover in 2007

Number of districts: 29**

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Ajmer	8,481	0	39	237	276	3.25	3	218
Alwar	8,380	59	336	812	1,207	14.40	0	256
Banswara†	5,037	0	83	292	375	7.44	1	86
Baran	6,992	0	149	940	1,089	15.57	0	113
Barmar	28,387	0	3	166	169	0.60	4	104
Bharatpur	5,066	0	34	202	236	4.66	0	90
Bhilwara	10,455	0	33	189	222	2.12	0	126
Bikaner	27,244	0	28	169	197	0.72	2	39
Bundi	5,550	0	146	307	453	8.16	2	145
Chittorgarh†	10,856	0	597	1,092	1,689	15.56	-2	158
Churu	16,830	0	5	84	89	0.53	1	6
Dhaulpur	3,033	0	82	337	419	13.81	0	56
Dungarpur†	3,770	0	44	208	252	6.68	0	43
Ganganagar	20,634	0	31	146	177	0.86	3	3
Jaipur	14,069	13	114	504	631	4.49	-1	432
Jaisalmer	38,401	0	47	115	162	0.42	4	30
Jalore	10,640	0	13	195	208	1.95	4	178
Jhalawar	6,219	0	83	313	396	6.37	0	90
Jhunjhunun	5,928	0	24	169	193	3.26	1	187
Jodhpur	22,850	0	3	90	93	0.41	-4	104
Kota	5,443	0	155	460	615	11.30	3	102
Nagaur	17,718	0	11	108	119	0.67	0	99
Pali	12,387	0	214	444	658	5.31	0	273
Rajsamand	3,860	0	131	291	422	10.93	1	50
Sawai Madhopur	10,528	0	260	1,039	1,299	12.34	-1	465
Sikar	7,732	0	32	160	192	2.48	-1	185
Sirohi†	5,136	0	300	617	917	17.85	3	198
Tonk	7,194	0	33	133	166	2.31	3	56
Udaipur†	13,419	0	1,420	1,695	3,115	23.21	-2	455
Total	342,239	72	4,450	11,514	16,036	4.69	24	4,347

* Change compared to 2005 assessment (revised).

** Boundaries of three districts (Dausa, Hanumangarh and Karauli) not available. Their data are given jointly with those of the parent districts.

Forest and Tree Resources in States and Union Territories

7.23.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.23.4.

Table 7.23.4: Altitude zone wise forest cover

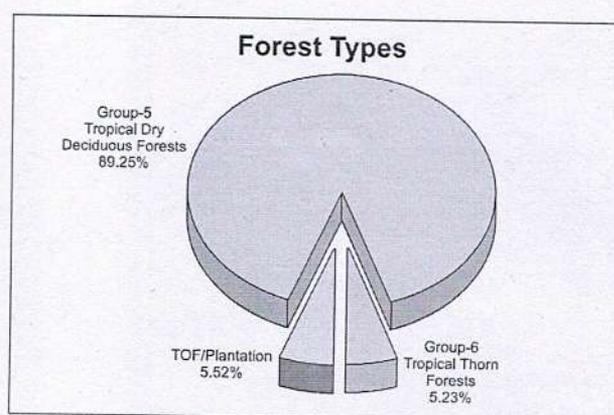
Altitude Zone	VDF	MDF	OF	Total
0-500m	15	2,680	8,874	11,569
500-1000m	57	1,646	2,588	4,291
1000-2000m	0	124	52	176
Total	72	4,450	11,514	16,036

(area in km²)

(based on SRTM Digital Elevation Model)

7.23.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 17 forest types which belong to 2 forest type groups viz Tropical Dry Deciduous and Tropical Thorn Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.



State (Alwar, Banswara, Chittorgarh, Churu, Ganganagar, Jalore, Kota, Nagaur, Pali, Sirohi and Udaipur) have been inventoried. The forest and tree cover of the State is presented in the Table 7.22.5.

7.23.8 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 8,274 km² which is 2.42% of the geographical area of the State. Eleven districts of the

Table 7.23.5: Forest & tree cover

Category	Area	% of Geographical area
Tree Cover	8,274	2.42
Forest Cover	16,036	4.69
Forest & Tree Cover	24,310	7.11

(area in km²)

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District-wise forest cover in different canopy density classes along with the changes compared to 2009 Assessment and scrub are given in Table 9.23.2.

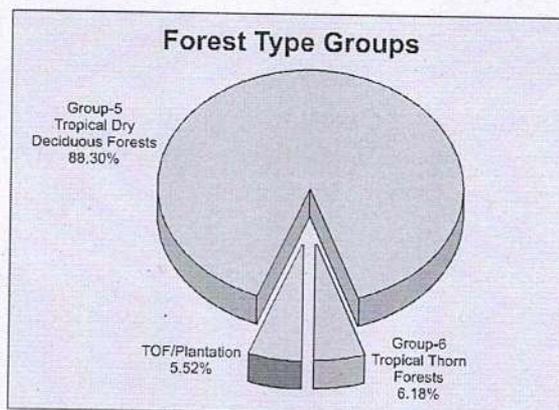
Table 9.23.2: District-wise Forest Cover

(Area in km²)

District	Geographical Area	2011 Assessment				Percent of GA	Change	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Ajmer	8,481	0	38	239	277	3.27	1	218
Alwar	8,380	59	336	810	1,205	14.38	-2	255
Banswara ^T	5,037	0	83	293	376	7.46	1	85
Baran	6,992	0	149	941	1,090	15.59	1	113
Barmer	28,387	0	3	169	172	0.61	3	106
Bharatpur	5,066	0	34	204	238	4.70	2	90
Bhilwara	10,455	0	34	191	225	2.15	3	129
Bikaner	27,244	0	28	180	208	0.76	11	39
Bundi	5,550	0	146	307	453	8.16	0	145
Chittorgarh ^T	10,856	0	595	1,092	1,687	15.54	-2	159
Churu	16,830	0	5	85	90	0.53	1	6
Dhaulpur	3,033	0	82	337	419	13.81	0	56
Dungarpur ^T	3,770	0	44	208	252	6.68	0	42
Ganganagar	20,634	0	30	160	190	0.92	13	3
Jaipur	14,069	13	114	504	631	4.49	0	431
Jaisalmer	38,401	0	47	120	167	0.43	5	34
Jalore	10,640	0	13	195	208	1.95	0	177
Jhalawar	6,219	0	83	314	397	6.38	1	91
Jhunjhunun	5,928	0	24	171	195	3.29	2	188
Jodhpur	22,850	0	3	90	93	0.41	0	104
Kota	5,443	0	154	461	615	11.30	0	103
Nagaur	17,718	0	11	108	119	0.67	0	99
Pali	12,387	0	216	446	662	5.34	4	268
Rajsamand	3,860	0	131	293	424	10.98	2	51
Sawai Madhopur	10,528	0	260	1,040	1,300	12.35	1	470
Sikar	7,732	0	32	161	193	2.50	1	184
Sirohi ^T	5,136	0	300	616	916	17.83	-1	198
Tonk	7,194	0	33	134	167	2.32	1	56
Udaipur ^T	13,419	0	1,420	1,698	3,118	23.24	3	457
Grand Total	342,239	72	4,448	11,567	16,087	4.70	51	4,357

NB: Boundaries of three districts (Dausa, Hanumangarh and Karauli) not available. Their data are given jointly with that of parent districts.

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**9.23.7 Tree Cover**

Tree cover of the state has been estimated using TOF inventory data collected over a period of six years, i.e. 2004-10. The estimated

tree cover in the state is 8,272 km² which is 2.42% of its geographical area. A total of 8 districts of the state have been inventoried. The forest and tree cover of the state is presented in Table 9.23.5.

Table 9.23.5: Forest and Tree Cover(Area in km²)

Category	Area	% of Geographical Area
Tree Cover	8,272	2.42
Forest Cover	16,087	4.70
Forest and Tree Cover	24,359	7.12

9.23.8 Growing Stock

The growing stock in the recorded forest area has been estimated on the basis of current forest cover map, forest type map and forest

inventory data. For trees outside forests (TOF), the same has been estimated using TOF inventory data. It is presented in the Table 9.23.6.

Table 9.23.6: Growing Stock

(million cum)

Forest	TOF	Total
34.385	81.560	115.945

Note: The growing stock estimate of TOF given in ISFR 2009 was an over estimation due to inclusion of entire desert area of the state with rest of the Western Plain physiographic zone in TOF inventory. In the current assessment problem has been overcome by creating a separate sub-strata for the desert areas. This has generated more precise estimation in the present assessment.

Forest Cover

mixed nature of classes to some extent on the ground. In the present assessment, considerable use of high resolution collateral data has been made and time series Google

Earth Images for minimizing the interpretational errors and ascertaining the ground features in doubtful areas. Extensive field visits by the field teams along with

Table 2.4: Change in Forest Cover of States/UTs between 2011 and 2013 (Area in km²)

States/UTs	Geographical Area	2011 Assessment				2013 Assessment				Change			
		VDF	MDF	OF	Total	VDF	MDF	OF	Total	VDF	MDF	OF	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Andhra Pradesh	275,069	850	26,242	19,297	46,389	850	26,079	19,187	46,116	0	-163	-110	-273
Arunachal Pradesh	83,743	20,868	31,519	15,023	67,410	20,828	31,414	15,079	67,321	-40	-105	56	-89
Assam	78,438	1,444	11,404	14,825	27,673	1,444	11,345	14,882	27,671	0	-59	57	-2
Bihar	94,163	231	3,280	3,334	6,845	247	3,380	3,664	7,291	16	100	330	446
Chhattisgarh	135,191	4,163	34,911	16,600	55,674	4,153	34,865	16,603	55,621	-10	-46	3	-53
Delhi	1,483	6.76	49.48	119.96	176.2	6.76	49.38	123.67	180	0.00	-0.10	3.71	3.61
Goa	3,702	543	585	1,091	2,219	543	585	1,091	2,219	0.00	0.00	0.00	0.00
Gujarat	196,022	376	5,231	9,012	14,619	376	5,220	9,057	14,653	0	-11	45	34
Haryana	44,212	27	457	1,124	1,608	27	453	1,106	1,586	0	-4	-18	-22
Himachal Pradesh	55,673	3,224	6,381	5,074	14,679	3,224	6,381	5,078	14,683	0	0	4	4
Jammu & Kashmir*	222,236	4,140	8,760	9,639	22,539	4,140	8,760	9,638	22,538	0	0	-1	-1
Jharkhand	79,714	2,590	9,917	10,470	22,977	2,587	9,667	11,219	23,473	-3	-250	749	496
Karnataka	191,791	1,777	20,179	14,238	36,194	1,777	20,179	14,176	36,132	0	0	-62	-62
Kerala	38,863	1,442	9,394	6,464	17,300	1,529	9,401	6,992	17,922	87	7	528	622
Madhya Pradesh	308,245	6,640	34,986	36,074	77,700	6,632	34,921	35,969	77,522	-8	-65	-105	-178
Maharashtra	307,713	8,736	20,815	21,095	50,646	8,720	20,770	21,142	50,632	-16	-45	47	-14
Manipur	22,327	730	6,151	10,209	17,090	728	6,094	10,168	16,990	-2	-57	-41	-100
Meghalaya	22,429	433	9,775	7,067	17,275	449	9,689	7,150	17,288	16	-86	83	13
Mizoram	21,081	134	6,086	12,897	19,117	138	5,900	13,016	19,054	4	-186	119	-63
Nagaland	16,579	1,293	4,931	7,094	13,318	1,298	4,736	7,010	13,044	5	-195	-84	-274
Odisha	155,707	7,060	21,366	20,477	48,903	7,042	21,298	22,007	50,347	-18	-68	1,530	1,444
Punjab	50,362	0	736	1,028	1,764	0	736	1,036	1,772	0	0	8	8
Rajasthan	342,239	72	4,448	11,567	16,087	72	4,424	11,590	16,086	0	-24	23	-1
Sikkim	7,096	500	2,161	698	3,359	500	2,161	697	3,358	0	0	-1	-1
Tamil Nadu	130,058	2,948	10,321	10,356	23,625	2,948	10,199	10,697	23,844	0	-122	341	219
Tripura	10,486	109	4,686	3,182	7,977	109	4,641	3,116	7,866	0	-45	-66	-111
Uttar Pradesh	240,928	1,626	4,559	8,153	14,338	1,623	4,550	8,176	14,349	-3	-9	23	11
Uttarakhand	53,483	4,762	14,167	5,567	24,496	4,785	14,111	5,612	24,508	23	-56	45	12
West Bengal	88,752	2,984	4,646	5,365	12,995	2,971	4,146	9,688	16,805	-13	-500	4,323	3,810
A&N Islands	8,249	3761	2,416	547	6,724	3,754	2,413	544	6,711	-7	-3	-3	-13
Chandigarh	114	1	10	6	17	1.36	9.66	6.24	17.26	0.36	-0.34	0.24	0.26
Dadra & Nagar Haveli	491	0	114	97	211	0	114	99	213	0	0	2	2
Daman & Diu	112	0	0.62	5.53	6.15	0	1.87	7.4	9.27	0	1.25	1.82	3.12
Lakshadweep	32	0	17.18	9.88	27.06	0	17.18	9.88	27.06	0	0	0	0
Puducherry	480	0	35.37	14.69	50.06	0	35.23	14.83	50.06	0	-0.14	0.14	0
Grand Total	3,287,263	83,471	320,736	287,820	692,027	83,502	318,745	295,651	697,898	31	-1,991	7,831	5,871

* Includes Jammu & Kashmir area outside LOC that is under illegal occupation of Pakistan and China.

Table 2.2: Forest Cover in States/UTs in India

States/UTs	Geographical Area	2015 Assessment				Total Forest	Percent of geographical area	Change in forest cover wrt ISFR 2013
		VDF	MDF	OF				
Andhra Pradesh	160,204	375	13,093	10,956	24,424	15.25	67	
Arunachal Pradesh	83,743	20,804	31,301	15,143	67,248	80.30	-73	
Assam	78,438	1,441	11,268	14,914	27,623	35.22	-48	
Bihar	94,163	248	3,376	3,664	7,288	7.74	-3	
Chhattisgarh	135,191	4,152	34,846	16,588	55,586	41.12	-35	
Delhi	1,483	6.94	57.15	124.68	188.77	12.73	8.96	
Goa	3,702	542	580	1,102	2,224	60.08	5	
Gujarat	196,022	376	5,220	9,064	14,660	7.48	7	
Haryana	44,212	27	452	1,105	1,584	3.58	-2	
Himachal Pradesh	55,673	3,224	6,381	5,091	14,696	26.40	13	
Jammu & Kashmir*	222,236	4,061	8,815	10,112	22,988	10.34	450	
Jharkhand	79,714	2,588	9,663	11,227	23,478	29.45	5	
Karnataka	191,791	1,781	20,063	14,577	36,421	18.99	289	
Kerala	38,863	1,523	9,301	8,415	19,239	49.50	1317	
Madhya Pradesh	308,245	6,629	34,902	35,931	77,462	25.13	-60	
Maharashtra	307,713	8,712	20,747	21,169	50,628	16.45	-4	
Manipur	22,327	727	5,925	10,342	16,994	76.11	4	
Meghalaya	22,429	449	9,584	7,184	17,217	76.76	-71	
Mizoram	21,081	138	5,858	12,752	18,748	88.93	-306	
Nagaland	16,579	1,296	4,695	6,975	12,966	78.21	-78	
Odisha	155,707	7,023	21,470	21,861	50,354	32.34	7	
Punjab	50,362	0	735	1,036	1,771	3.52	-1	
Rajasthan	342,239	76	4,426	11,669	16,171	4.73	85	
Sikkim	7,096	500	2,160	697	3,357	47.31	-1	
Tamil Nadu	130,058	2,993	10,469	12,883	26,345	20.26	2501	
Telangana	114,865	513	12,712	8,366	21,591	18.80	-168	
Tripura	10,486	113	4,609	3,089	7,811	74.49	-55	
Uttar Pradesh	240,928	2,195	4,060	8,206	14,461	6.00	112	
Uttarakhand	53,483	4,754	13,602	5,884	24,240	45.32	-268	
West Bengal	88,752	2,948	4,172	9,708	16,828	18.96	23	
A&N Islands	8,249	5,686	685	380	6,751	81.84	40	
Chandigarh	114	1.36	14.09	6.58	22.03	19.32	4.77	
Dadra & Nagar Haveli	491	0	80	126	206	41.96	-7	
Daman & Diu	112	1.4	5.82	12.39	19.61	17.51	10.34	
Lakshadweep	32	0	17.22	9.84	27.06	84.56	0	
Puducherry	480	0	29.68	25.70	55.38	11.54	5.32	
Grand Total	3,287,263	85,904	315,374	300,395	701,673	21.34	3,775	

*Includes Jammu and Kashmir areas outside LoC that is under illegal occupation of Pakistan and China.

Table 2.4 Forest Cover in States/UTs in India

State	Geographic Area	2017 Assessment		
		VDF	MDF	OF
Andhra Pradesh	162,968	1,957	14,051	12,139
Arunachal Pradesh	83,743	20,721	30,955	15,288
Assam	78,438	2,797	10,192	15,116
Bihar	94,163	332	3,260	3,707
Chhattisgarh	135,192	7,064	32,215	16,268
Delhi	1,483	6.72	56.24	129.45
Goa	3,702	538	576	1,115
Gujarat	196,244	378	5,200	9,179
Haryana	44,212	28	452	1,108
Himachal Pradesh	55,673	3,110	6,705	5,285
Jammu & Kashmir *	222,236	4,075	8,579	10,587
Jharkhand	79,716	2,598	9686	11269
Karnataka	191,791	4,502	20,444	12,604
Kerala	38,852	1,663	9,407	9,251
Madhya Pradesh	308,252	6,563	34,571	36,280
Maharashtra	307,713	8,736	20,652	21,294
Manipur	22,327	908	6,510	9,928
Meghalaya	22,429	453	9,386	7,307
Mizoram	21,081	131	5,861	12,194
Nagaland	16,579	1,279	4,587	6,623
Odisha	155,707	6,967	21,370	23,008
Punjab	50,362	8	806	1,023
Rajasthan	342,239	78	4,340	12,154
Sikkim	7,096	1081	1,575	688
Tamil Nadu	130,060	3,672	10,979	11,630
Telangana	112,077	1,596	8,738	10,085
Tripura	10,486	656	5,246	1,824
Uttar Pradesh	240,928	2,617	4,069	7,993
Uttarakhand	53,483	4,969	12,884	6,442
West Bengal	88,752	2,994	4,147	9,706
A&N Islands	8,249	5,678	684	380
Chandigarh	114	1.36	13.82	6.38
Dadra & Nagar Haveli	491	0	80	127
Daman & Diu	111	1.40	5.82	13.27
Lakshadweep	30	0	17.04	10.06
Puducherry	490	0	17.60	36.07
Grand Total	32,87,469	98158	308318	301797

* Includes Jammu & Kashmir area outside LoC that is under illegal occupation of Pakistan and China.



(Area in sq km)

	Percent of Geographic area	Change in forest cover wrt ISFR.2015 updated	Change Percent	Scrub
Total Forest				
28,147	17.27	2141	1.31	9,560
66,964	79.96	-190	-0.23	247
28,105	35.83	567	0.72	217
7,299	7.75	45	0.05	228
55,547	41.09	-12	-0.01	552
192.41	12.97	3.64	0.25	0.67
2,229	60.21	19	0.51	0
14,757	7.52	47	0.02	2,194
1,588	3.59	8	0.02	154
15,100	27.12	393	0.71	308
23,241	10.46	253	0.11	573
23,553	29.55	29	0.04	669
37,550	19.58	1101	0.57	4,484
20,321	52.30	1043	2.68	23
77,414	25.11	-12	0.00	6,279
50,682	16.47	-17	-0.01	4,160
17,346	77.69	263	1.18	1,111
17,146	76.45	-116	-0.52	505
18,186	86.27	-531	-2.52	0
12,489	75.33	-450	-2.71	503
51,345	32.98	885	0.57	4,306
1837	3.65	66	0.13	33
16,572	4.84	466	0.14	4,579
3,344	47.13	-9	-0.13	307
26,281	20.21	73	0.06	657
20,419	18.22	565	0.50	3,238
7,726	73.68	-164	-1.56	15
14,679	6.09	278	0.12	551
24,295	45.43	23	0.04	383
16,847	18.98	21	0.02	136
6,742	81.73	-9	-0.11	1
21.56	18.91	-0.10	-0.09	0.02
207	42.16	1	0.20	5
20.49	18.46	0.88	0.79	0.27
27.10	90.33	0.04	0.13	0
53.67	10.95	-3.28	-0.67	0
708273	21.54	6778	0.21	45979

TABLE 11.23.4 District-wise Forest Cover in Rajasthan

(in sq km)

District	Geographical Area (GA)	2019 Assessment				% of GA	Change wrt 2017 assessment	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Ajmer	8,481	0.00	43.00	262.11	305.11	3.60	6.11	204.64
Alwar	8,380	59.00	334.96	802.70	1,196.66	14.28	-0.34	245.66
Banswara ^T	4,522	0.00	38.57	229.85	268.42	5.94	7.42	63.45
Baran	6,992	0.00	154.89	856.10	1,010.99	14.46	-2.01	106.56
Barmer	28,387	0.00	3.85	285.94	289.79	1.02	16.79	234.23
Bharatpur	5,066	0.00	22.00	208.27	230.27	4.55	1.27	77.93
Bhilwara	10,455	0.00	31.00	193.19	224.19	2.14	3.19	176.39
Bikaner	30,239	0.88	27.23	227.50	255.61	0.85	8.61	51.85
Bundi	5,776	1.00	137.93	418.25	557.18	9.65	-0.82	151.62
Chittaurgarh	7,822	0.00	220.55	768.25	988.80	12.64	-0.20	100.09
Churu	13,835	0.00	3.00	79.00	82.00	0.59	0.00	22.00
Dausa	3,432	0.00	12.00	105.00	117.00	3.41	0.00	99.00
Dhaulpur	3,033	0.00	80.00	339.00	419.00	13.81	0.00	75.40
Dungarpur ^T	3,770	0.00	42.71	259.59	302.30	8.02	11.30	75.35
Ganganagar	10,978	0.00	10.00	102.92	112.92	1.03	-0.08	13.00
Hanumangarh	9,656	1.00	7.00	81.96	89.96	0.93	-0.04	1.00
Jaipur	11,143	12.00	97.11	443.65	552.76	4.96	0.76	285.39
Jaisalmer	38,401	3.93	51.13	270.71	325.77	0.85	12.77	213.27
Jalor	10,640	0.00	18.91	249.16	268.07	2.52	-6.93	250.89
Jhalawar	6,219	0.00	83.02	352.56	435.58	7.00	-3.42	102.34
Jhunjhunun	5,928	0.00	21.00	179.77	200.77	3.39	4.77	186.72
Jodhpur	22,850	0.00	4.55	103.23	107.78	0.47	2.78	172.71
Karauli	5,524	0.00	95.00	775.00	870.00	15.75	0.00	273.00
Kota	5,217	0.00	153.62	393.11	546.73	10.48	-3.27	135.17
Nagaur	17,718	0.00	15.00	132.04	147.04	0.83	4.04	102.32
Pali	12,387	0.00	209.94	464.91	674.85	5.45	0.85	323.64
Pratapgarh ^T	4,449	0.00	562.54	475.37	1,037.91	23.33	-6.09	58.73
Rajsamand	4,655	0.00	134.91	386.88	521.79	11.21	10.79	124.23
Sawai Madhopur	4,498	0.00	153.92	308.77	462.69	10.29	-3.31	119.67
Sikar	7,732	0.00	31.00	162.06	193.06	2.50	1.06	202.34
Sirohi ^T	5,136	0.00	300.74	611.17	911.91	17.76	-2.09	229.36
Tonk	7,194	0.00	26.94	138.12	165.06	2.29	0.06	57.73
Udaipur ^T	11,724	0.00	1,213.88	1,543.66	2,757.54	23.51	-6.46	224.36
Grand Total	3,42,239	77.81	4,341.90	12,209.80	16,629.51	4.86	57.51	4,760.04

13.22.1 Forest Cover

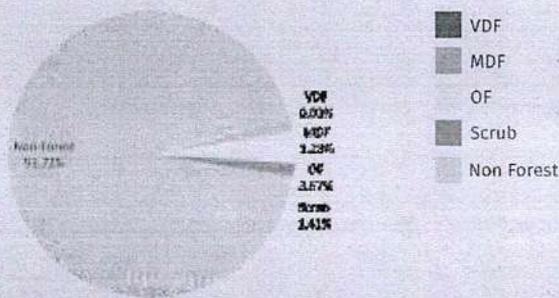


Figure 13.22.1
Forest Cover of
Rajasthan

Table 13.22.2 Forest Cover
of Rajasthan (in sq km)

Class	Area	% of GA
VDF	78.15	0.02
MDF	4,368.65	1.28
OF	12,208.16	3.57
Total	16,654.96	4.87
Scrub	4,808.51	1.41

Table 13.22.3 District- wise Forest Cover in Rajasthan

(in sq km)

District	Geo-geographical Area (GA)	2021 Assessment				%of GA	Change wrt 2019 assessment	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Ajmer	8,481	0.00	46.49	285.07	331.56	3.91	26.45	175.72
Alwar	8,380	59.70	334.65	801.56	1,195.91	14.27	-0.75	243.08
Banswara [†]	4,522	0.00	38.52	230.09	268.61	5.94	0.19	60.17
Baran	6,992	0.00	153.66	856.39	1,010.05	14.45	-0.94	98.93
Barmer	28,387	0.00	4.79	284.43	289.22	1.02	-0.57	223.18
Bharatpur	5,066	0.00	26.33	194.73	221.06	4.36	-9.21	77.15
Bhilwara	10,455	0.00	33.31	191.00	224.31	2.15	0.12	189.76
Bikaner	30,239	0.88	28.06	250.77	279.71	0.92	24.10	49.86
Bundi	5,776	1.00	138.98	424.37	564.35	9.77	7.17	172.67
Chittaurgarh	7,822	0.00	222.01	768.04	990.05	12.66	1.25	107.42
Churu	13,835	0.00	2.44	75.25	77.69	0.56	-4.31	27.48
Dausa	3,432	0.00	11.15	105.45	116.60	3.40	-0.40	94.66
Dhauipur	3,033	0.00	79.75	339.32	419.07	13.82	0.07	76.07
Dungarpur [†]	3,770	0.00	42.53	262.01	304.54	8.08	2.24	83.37
Ganganagar	10,978	0.00	9.87	105.22	115.09	1.05	2.17	15.78
Hanumangarh [†]	9,656	1.01	6.80	85.16	92.97	0.96	3.01	6.71
Jaipur	11,143	12.00	97.20	445.66	554.86	4.98	2.10	272.85
Jaisalmer	38,401	3.56	48.64	270.19	322.39	0.84	-3.38	206.14
Jalor	10,640	0.00	22.67	212.94	235.61	2.21	-32.46	221.89
Jhalawar	6,219	0.00	83.39	353.28	436.67	7.02	1.09	102.57
Jhunjhunun	5,928	0.00	20.79	180.17	200.96	3.39	0.19	179.54
Jodhpur	22,850	0.00	4.26	104.99	109.25	0.48	1.47	163.53
Karauli	5,524	0.00	96.04	747.80	843.84	15.28	-26.16	300.54
Kota	5,217	0.00	153.28	391.55	544.83	10.44	-1.90	135.83
Nagaur	17,718	0.00	14.11	155.65	169.76	0.96	22.72	87.71

RAJASTHAN

(in sq km)

District	Geo-graphical Area (GA)	2021 Assessment				%of GA	Change wrt 2019 assessment	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Pali	12,387	0.00	211.60	489.26	700.86	5.66	26.01	357.60
Pratapgarh [†]	4,449	0.00	562.97	470.80	1,033.77	23.24	-4.14	59.05
Rajsamand	4,655	0.00	129.94	386.93	516.87	11.10	-4.92	126.06
Sawai Madhopur	4,498	0.00	171.30	293.31	464.61	10.33	1.92	138.52
Sikar	7,732	0.00	31.51	170.67	202.18	2.61	9.12	198.68
Sirohi [†]	5,136	0.00	300.96	597.46	898.42	17.49	-13.49	247.50
Tonk	7,194	0.00	27.72	138.18	165.90	2.31	0.84	68.96
Udaipur [†]	11,724	0.00	1,212.93	1,540.46	2,753.39	23.49	-4.15	239.53
Grand Total	3,42,239	78.15	4,368.65	12,208.16	16,654.96	4.87	25.45	4,808.51

13.22.1.1 Forest Cover Inside and Outside Recorded Forest Area (or Green Wash)

The Forest Cover inside and outside Recorded Forest Area (RFA) has been analysed in different categories and presented in Table given below.

Table 13.22.4 Forest Cover Inside and Outside Recorded Forest Area (or Green Wash) in Rajasthan (in sq km)

Forest Cover Inside the Recorded Forest Area (or Green Wash)				Forest Cover Outside the Recorded Forest Area (or Green Wash)			
VDF	MDF	OF	Total	VDF	MDF	OF	Total
74	3,999	8,487	12,560	4	370	3,721	4,095
0.59%	31.84%	67.57%		0.10%	9.03%	90.87%	

[†]In case of Rajasthan, RFA boundaries have been used.

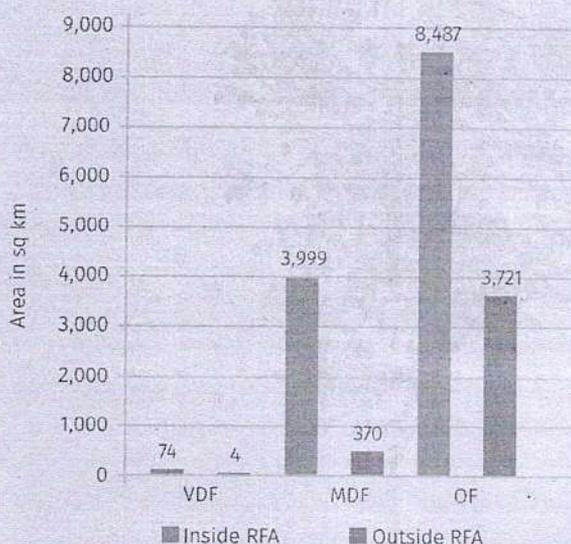


Figure 13.22.2 Forest Cover Inside and Outside of RFA in Rajasthan

10.22.1 Forest Cover

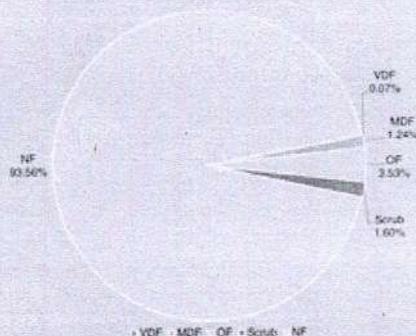


Figure 10.22.1 Forest Cover of Rajasthan

Table 10.22.2 Forest Cover of Rajasthan

Class	Area	% of Calculated Area by Sol	(km ²)
VDF	223.20	0.07	
MDF	4,237.41	1.24	
OF	12,087.60	3.53	
Total	16,548.21	4.84	
Scrub	5,476.75	1.60	

Table 10.22.3 District-wise Forest Cover in Rajasthan

District	Calculated Area by Sol	2023 Assessment				% of Calculated Area by Sol	Change w.r.t. 2021 Raster based*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Ajmer	8,474.89	0.00	45.50	287.51	333.01	3.93	-18.34	276.83
Alwar	8,383.63	61.72	335.28	801.74	1,198.74	14.30	16.39	320.99
Banswara	4,511.20	0.00	41.66	226.09	267.75	5.94	-0.38	58.28
Baran	7,004.86	0.00	153.27	821.86	975.13	13.92	-33.29	88.50
Barmer	28,387.57	0.00	12.05	297.79	309.84	1.09	19.00	223.02
Bharatpur	5,066.97	0.00	47.11	167.17	214.28	4.23	-6.40	87.93
Bhilwara	10,492.92	0.00	34.55	202.42	236.97	2.26	-0.04	248.66
Bikaner	30,343.12	0.44	24.57	234.43	259.44	0.86	-14.85	50.17
Bundi	5,777.12	1.02	140.13	417.43	558.58	9.67	0.32	177.31
Chittaurgarh	7,822.51	0.00	223.39	764.69	988.08	12.63	1.93	162.17
Churu	13,850.45	0.00	2.24	60.49	62.73	0.45	-11.74	36.36
Dausa	3,424.38	0.30	11.75	109.75	121.80	3.56	-0.23	99.85
Dhaultpur	3,034.43	0.00	77.57	322.66	400.23	13.19	-8.14	75.43
Dungarpur	3,770.52	0.00	43.19	258.80	301.99	8.01	-5.57	101.46
Hanumangarh	9,714.69	0.92	6.04	85.33	92.29	0.95	-2.25	8.92
Jaipur	11,138.09	12.78	101.19	450.61	564.58	5.07	-2.02	318.60
Jaisalmer	38,381.51	2.91	51.49	286.91	341.31	0.89	11.46	233.25
Jalor	10,643.78	0.00	21.00	201.41	222.41	2.09	-11.54	207.69
Jhalawar	6,343.15	0.00	87.83	352.21	440.04	6.94	-4.14	107.92
Jhunjhunun	5,924.19	0.00	19.29	177.54	196.83	3.32	-1.57	205.97
Jodhpur	22,681.16	0.00	5.01	106.22	111.23	0.49	2.66	166.82
Karauli	5,008.09	0.00	87.87	672.55	760.42	15.18	-3.69	269.28
Kota	5,088.30	0.00	147.12	383.79	530.91	10.43	2.25	141.92
Nagaur	17,810.78	0.00	13.25	157.67	170.92	0.96	-4.31	149.20
Pali	12,387.03	21.58	203.38	467.91	692.87	5.59	-9.65	453.45
Pratapgarh	4,433.97	0.00	537.90	458.96	996.86	22.48	-30.79	75.62
Rajsamand	4,620.71	23.22	133.17	356.97	513.36	11.11	-5.97	167.66
Sawai Madhopur	5,026.04	37.04	151.98	328.40	517.42	10.29	-2.91	158.85
Shriganga Nagar	10,904.04	0.00	11.42	102.04	113.46	1.04	2.85	16.38

Table 10.22.3 District- wise Forest Cover in Rajasthan

District	Calculated Area by Sol	2023 Assessment				% of Calculated Area by Sol	Change w.r.t. 2021 Raster based*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Sikar	7,730.98	0.00	30.78	187.77	218.55	2.83	19.14	233.55
Sirohi	5,138.45	0.00	282.86	616.59	899.45	17.50	0.70	223.68
Tonk	7,197.79	0.00	29.85	140.58	170.43	2.37	4.86	71.41
Udaipur	11,721.67	61.27	1,123.72	1,581.31	2,766.30	23.60	12.46	259.62
Grand Total	3,42,238.99	223.20	4,237.41	12,087.60	16,548.21	4.84	-83.80	5,476.75

*Area figure calculated without normalization factor.

Table 10.22.4 Division-wise Forest Cover in Rajasthan

Division	Digitized Division Boundary Area*	2023 Assessment				% of Digitized Division Boundary Area	Change w.r.t. 2021 Raster based*	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Ajmer	8,418.73	0.00	17.99	253.97	271.96	3.23	-17.27	273.15
Alwar	7,209.51	4.20	60.14	390.60	454.94	6.31	8.33	286.11
Banswara	4,476.06	0.00	41.65	224.67	266.32	5.95	-0.34	58.09
Baran	6,905.87	0.00	135.70	772.81	908.51	13.16	-34.98	85.51
Barmer	27,233.70	0.00	11.19	289.29	300.48	1.10	15.63	218.07
Bharatpur	4,859.03	0.00	34.70	98.05	132.75	2.73	-4.42	69.50
Bhilwara	10,487.10	0.00	34.50	202.34	236.84	2.26	-0.03	247.91
Bikaner	18,158.30	0.00	6.08	72.08	78.16	0.43	0.08	16.63
Bikaner IGNP-II	6,754.27	0.43	16.24	109.58	126.25	1.87	-13.32	29.40
Bundi	4,937.80	1.02	36.25	180.79	218.06	4.42	-0.45	113.62
Chhatargarh-IGNP-I	5,384.60	0.00	2.25	52.80	55.05	1.02	-1.62	4.30
Chittaurgarh	6,982.12	0.00	78.55	543.30	621.85	8.91	1.42	137.38
Churu	13,835.70	0.00	2.22	60.39	62.61	0.45	-11.62	36.37
Dausa	3,955.92	0.41	20.38	201.75	222.54	5.63	-2.01	121.51
DCF & DFD I RTR SWM, DCF & DFD II RTR Karoli	2,087.77	36.63	193.53	556.32	786.48	37.67	-2.04	142.86
DCF Bharatpur WL	29.17	0.00	4.74	11.62	16.36	56.09	-0.13	1.16
DCF Chittaurgarh WL	558.53	0.00	313.41	105.40	418.81	74.98	-2.76	3.62
DCF Churu	8.32	0.00	0.02	0.11	0.13	1.56	-0.12	0.00
DCF Jaipur WL	364.51	5.68	44.08	136.77	186.53	51.17	-0.20	31.19
DCF Jaisalmer DNP	3,170.48	0.00	1.05	12.00	13.05	0.41	3.89	9.00
DCF Kota WL	422.43	0.00	94.16	157.38	251.54	59.55	2.17	20.43
DCF Mt. Abu WL	345.51	0.00	182.06	87.36	269.42	77.98	-3.47	4.88
DCF NCS	794.20	0.00	15.40	124.50	139.90	17.62	0.14	63.18
DCF Rajsamand WL	1,161.53	49.84	350.48	389.77	790.09	68.02	-2.10	62.89
DCF Sariska WL	1,182.30	57.87	275.90	410.23	744.00	62.93	7.70	34.34
DCF Udaipur WL	570.23	35.53	357.56	96.34	489.43	85.83	-14.94	3.75

Tree cover constitutes largest area in Andhra Pradesh (9,011 km²) followed by Maharashtra (8,269 km²), Uttar Pradesh (7,545 km²) and Karnataka (7,446 km²). Considering the percent of geographical area of the State/UT under tree cover, the highest rank goes to Pondicherry (7.19 percent) followed by Dadra & Nagar Haveli (5.54 percent), Tamil Nadu (4.65 percent), Bihar (3.92 percent), Karnataka (3.88 percent) and West Bengal (3.68 percent).

Considering the percentage of tree cover with respect to CNFA, which indicates the actual potential different

States/UTs have for increasing area under tree cover, it is found that Lakshdweep, Dadra & Nagar Haveli, Pondicherry and Andaman & Nicobar Islands cover more than 7 percent of their CNFA's. The states of Tamil Nadu, Bihar, Karnataka, and Kerala follow with over 5 percent CNFA under tree cover. Analysing these figures in combination with the extent of forest cover outside recorded forest areas in different States/UTs, the concerned governments can determine where and how much scope is there to enhance tree-growing activities.

Table 4.04 State/UT wise Tree Cover Estimates

State/UT	Geographic Area (Km ²)	CNFA (Km ²)	Trees per ha	Number of Trees ('000)	Tree Cover		
					Area (Km ²)	% of Geog. Area	% of CNFA
Andhra Pradesh	275,069	205,673	11.2	230,923	9,011	3.28	4.38
Arunachal Pradesh	83,743	14,792	11.1	16,432	478	0.57	3.23
Assam	78,438	40,827	15.1	61,804	1,942	2.48	4.76
Bihar	94,163	73,556	14.8	109,004	3,693	3.92	5.02
Chhatisgarh	135,191	73,464	8.8	64,981	3,535	2.62	4.81
Delhi	1,483	1,353	12.5	1,688	40	2.69	2.95
Goa	3,702	1,559	18.0	2,801	62	1.68	3.98
Gujarat	196,022	172,915	8.1	139,396	4,036	2.06	2.33
Haryana	44,212	42,049	15.6	65,598	1,526	3.45	3.63
Himachal Pradesh	55,673	12,091	14.8	17,850	397	0.71	3.28
Jammu & Kashmir	222,236	68,258	14.7	100,287	2,217	1.00	3.25
Jharkhand	79,714	54,339	9.1	49,669	2,694	3.38	4.96
Karnataka	191,791	147,993	11.8	174,997	7,446	3.88	5.03
Kerala	38,863	22,731	18.8	42,652	1,146	2.95	5.04
Madhya Pradesh	308,245	208,981	8.6	179,304	5,751	1.87	2.75
Maharashtra	307,713	236,441	11.4	269,356	8,269	2.69	3.50
Manipur	22,327	4,517	14.1	6,365	95	0.43	2.11
Meghalaya	22,429	6,756	14.1	9,523	140	0.62	2.07
Mizoram	21,081	3,576	14.1	5,030	95	0.45	2.66
Nagaland	16,579	3,214	14.1	4,529	70	0.42	2.19
Orissa	155,707	94,359	10.5	98,873	4,364	2.80	4.62
Punjab	50,362	45,204	15.6	70,402	1,634	3.24	3.61
Rajasthan	342,239	306,523	4.6	140,446	5,286	1.54	1.72
Sikkim	7,096	443	14.7	651	14	0.20	3.25
Tamil Nadu	130,058	103,768	15.2	157,418	6,054	4.65	5.83
Tripura	10,486	3,376	14.1	4,759	68	0.65	2.03
Uttar Pradesh	240,928	216,864	14.6	317,561	7,545	3.13	3.48
Uttaranchal	53,483	13,180	15.0	19,798	448	0.84	3.40
West Bengal	88,752	64,690	14.8	95,723	3,264	3.68	5.05

3.4 STATE OF FOREST REPORT 2001

Tree cover constitutes largest area in Andhra Pradesh (9,011 km²) followed by Maharashtra (8,269 km²), Uttar Pradesh (7,545 km²) and Karnataka (7,446 km²). Considering the percent of geographical area of the State/UT under tree cover, the highest rank goes to Pondicherry (7.19 percent) followed by Dadra & Nagar Haveli (5.54 percent), Tamil Nadu (4.65 percent), Bihar (3.92 percent), Karnataka (3.88 percent) and West Bengal (3.68 percent).

Considering the percentage of tree cover with respect to CNFA, which indicates the actual potential different

States/UTs have for increasing area under tree cover, it is found that Lakshdweep, Dadra & Nagar Haveli, Pondicherry and Andaman & Nicobar Islands cover more than 7 percent of their CNFA's. The states of Tamil Nadu, Bihar, Karnataka, and Kerala follow with over 5 percent CNFA under tree cover. Analysing these figures in combination with the extent of forest cover outside recorded forest areas in different States/UTs, the concerned governments can determine where and how much scope is there to enhance tree-growing activities.

Table 4.04 State/UT wise Tree Cover Estimates

State/UT	Geographic Area (Km ²)	CNFA (Km ²)	Trees per ha	Number of Trees ('000)	Tree Cover		
					Area (Km ²)	% of Geog. Area	% of CNFA
Andhra Pradesh	275,069	205,673	11.2	230,923	9,011	3.28	4.38
Arunachal Pradesh	83,743	14,792	11.1	16,432	478	0.57	3.23
Assam	78,438	40,827	15.1	61,804	1,942	2.48	4.76
Bihar	94,163	73,556	14.8	109,004	3,693	3.92	5.02
Chhatisgarh	135,191	73,464	8.8	64,981	3,535	2.62	4.81
Delhi	1,483	1,353	12.5	1,688	40	2.69	2.95
Goa	3,702	1,559	18.0	2,801	62	1.68	3.98
Gujarat	196,022	172,915	8.1	139,396	4,036	2.06	2.33
Haryana	44,212	42,049	15.6	65,598	1,526	3.45	3.63
Himachal Pradesh	55,673	12,091	14.8	17,850	397	0.71	3.28
Jammu & Kashmir	222,236	68,258	14.7	100,287	2,217	1.00	3.25
Jharkhand	79,714	54,339	9.1	49,669	2,694	3.38	4.96
Karnataka	191,791	147,993	11.8	174,997	7,446	3.88	5.03
Kerala	38,863	22,731	18.8	42,652	1,146	2.95	5.04
Madhya Pradesh	308,245	208,981	8.6	179,304	5,751	1.87	2.75
Maharashtra	307,713	236,441	11.4	269,356	8,269	2.69	3.50
Manipur	22,327	4,517	14.1	6,365	95	0.43	2.11
Meghalaya	22,429	6,756	14.1	9,523	140	0.62	2.07
Mizoram	21,081	3,576	14.1	5,030	95	0.45	2.66
Nagaland	16,579	3,214	14.1	4,529	70	0.42	2.19
Orissa	155,707	94,359	10.5	98,873	4,364	2.80	4.62
Punjab	50,362	45,204	15.6	70,402	1,634	3.24	3.61
Rajasthan	342,239	306,523	4.6	140,446	5,286	1.54	1.72
Sikkim	7,096	443	14.7	651	14	0.20	3.25
Tamil Nadu	130,058	103,768	15.2	157,418	6,054	4.65	5.83
Tripura	10,486	3,376	14.1	4,759	68	0.65	2.03
Uttar Pradesh	240,928	216,864	14.6	317,561	7,545	3.13	3.48
Uttaranchal	53,483	13,180	15.0	19,798	448	0.84	3.40
West Bengal	88,752	64,690	14.8	95,723	3,264	3.68	5.05

Table 5.04: State/UT wise Tree Cover Estimates

State/UT	Geog. Area (km ²)	CNFA (km ²)	Trees per ha	Number of Trees ('000)	Tree Cover		
					Area (km ²)	% of GA	% of CNFA
Andhra Pradesh	275,069	204,084	16.9	345,355	12,120	4.41	5.94
Arunachal Pradesh	83,743	12,504	10.8	13,470	363	0.43	2.90
Assam	78,438	42,315	14.1	59,473	935	1.19	2.21
Bihar	94,163	79,442	13.8	109,971	1,620	1.72	2.04
Chhattisgarh	135,191	69,594	10.2	71,326	6,723	4.97	9.66
Delhi	1,483	1,278	24.9	3,176	98	6.61	7.67
Goa	3,702	1,411	15.2	2,137	136	3.67	9.62
Gujarat	196,022	151,926	14.1	213,829	10,586	5.40	6.97
Haryana	44,212	40,751	12.3	50,055	1,415	3.20	3.47
Himachal Pradesh	55,673	12,366	15.5	19,127	491	0.88	3.97
Jammu & Kashmir	222,236	65,296	18.7	122,309	3,826	1.72	5.86
Jharkhand	79,714	51,555	10.4	53,858	5,012	6.29	9.72
Karnataka	191,791	140,680	11.6	162,718	5,371	2.80	3.82
Kerala	38,863	21,922	13.6	29,904	1,903	4.90	8.68
Madhya Pradesh	308,245	206,462	10.2	211,456	7,250	2.35	3.51
Maharashtra	307,713	232,567	11.5	267,733	9,320	3.03	4.01
Manipur	22,327	2,864	13.6	3,901	136	0.61	4.73
Meghalaya	22,429	7,543	13.6	10,241	352	1.57	4.67
Mizoram	21,081	2,449	14.0	3,440	130	0.62	5.31
Nagaland	16,579	4,637	13.6	6,297	217	1.31	4.67
Orissa	155,707	90,297	11.0	98,919	6,381	4.10	7.07
Punjab	50,362	45,290	12.6	57,285	1,608	3.19	3.55
Rajasthan	342,239	303,157	8.0	241,255	8,638	2.52	2.85
Sikkim	7,096	322	20.3	653	22	0.31	6.77
Tamil Nadu	130,058	98,851	13.7	135,131	4,991	3.84	5.05
Tripura	10,486	2,446	13.6	3,336	116	1.11	4.76
Uttar Pradesh	240,928	214,390	12.3	263,875	7,715	3.20	3.60
Uttaranchal	53,483	13,090	15.4	20,164	571	1.07	4.36
West Bengal	88,752	67,350	14.4	96,888	1,731	1.95	2.57
Andaman & Nicobar	8,249	973	12.1	1,178	33	0.40	3.42
Chandigarh	114	76	33.6	257	8	7.09	10.53
Dadra Nagar Haveli	491	233	21.0	489	35	7.10	15.02
Daman & Diu	112	96	10.6	102	6	5.23	6.10
Lakshadweep	32	25	13.7	35	2	7.24	9.01
Pondicherry	480	426	18.8	804	35	7.19	8.09
Total	3,287,263	2,188,668	12.25	2,680,147	99,896	3.04	4.56

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Table 5.2: State/UT wise tree cover estimates

Sl. No.	State/U.T	Geographic Area	Trees per ha of CNFA	Tree Cover	
				Area(km ²)	% of geog. Area
1	Andhra Pradesh	275,069	12.76	7,640	2.78
2	Arunachal Pradesh	83,743	11.07	446	0.53
3	Assam	78,438	11.91	1,484	1.89
4	Bihar	94,163	10.80	2,522	2.68
5	Chhattisgarh	135,191	10.43	4,492	3.32
6	Delhi	1,483	26.44	107	7.20
7	Goa	3,702	25.29	268	7.24
8	Gujarat	196,022	13.41	7,621	3.89
9	Haryana	44,212	13.15	1,565	3.54
10	Himachal Pradesh	55,673	19.02	709	1.27
11	Jammu & Kashmir	222,236	22.54	5,633	2.53
12	Jharkhand	79,714	11.01	3,080	3.86
13	Karnataka	191,791	11.09	5,467	2.85
14	Kerala	38,863	16.50	2,632	6.77
15	Madhya Pradesh	308,245	9.68	6,267	2.03
16	Maharashtra	307,713	11.16	8,978	2.92
17	Manipur	22,327	15.31	142	0.63
18	Meghalaya	22,429	15.32	405	1.80
19	Mizoram	21,081	15.65	122	0.58
20	Nagaland	16,579	15.26	238	1.43
21	Orissa	155,707	12.42	4,589	2.95
22	Punjab	50,362	13.61	1,823	3.62
23	Rajasthan	342,239	9.54	8,379	2.45
24	Sikkim	7,096	22.62	27	0.38
25	Tamil Nadu	130,058	16.40	5,621	4.32
26	Tripura	10,486	15.31	134	1.28
27	Uttar Pradesh	240,928	12.71	8,203	3.40
28	Uttarakhand	53,483	17.38	658	1.23
29	West Bengal	88,752	11.43	2,269	2.56
30	Andaman & Nicobar Islands	8,249	17.16	53	0.65
31	Chandigarh	114	37.11	9	7.61
32	Dadra & Nagar Haveli	491	18.98	28	5.66
33	Daman & Diu	112	13.08	9	7.76
34	Lakshadweep	32	15.20	4	13.33
35	Pondicherry	480	21.80	42	8.66
	Total	3,287,263	12.14	91,663	2.79

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S.No.	State/UT	Geographical Area (G.A.) (km ²)	Tree Cover	
			Area (km ²)	% of G.A.
15	Madhya Pradesh	308,245	6,871	2.23
16	Maharashtra	307,713	9,466	3.08
17	Manipur	22,327	197	0.88
18	Meghalaya	22,429	542	2.42
19	Mizoram	21,081	172	0.82
20	Nagaland	16,579	300	1.81
21	Orissa	155,707	4,435	2.85
22	Punjab	50,362	1,699	3.37
23	Rajasthan	342,239	8,274	2.42
24	Sikkim	7,096	20	0.28
25	Tamil Nadu	130,058	4,968	3.82
26	Tripura	10,486	171	1.63
27	Uttar Pradesh	240,928	7,381	3.06
28	Uttarakhand	53,483	665	1.24
29	West Bengal	88,752	2,458	2.77
30	Andaman & Nicobar Islands	8,249	44	0.53
31	Chandigarh	114	11	9.65
32	Dadra & Nagar Haveli	491	27	5.50
33	Daman & Diu	112	9	8.04
34	Lakshadweep	32	4	12.50
35	Puducherry	480	34	7.08
	Total	3,287,263	92,769	2.82

noted that in some of the States/UTs, estimates for tree cover are only indicative in nature and may have lower levels of precision since the sample size in such States/UTs is small. The estimates of tree cover in the States and UTs are given in Table 4.5.1 and in Fig 4.2.

Tree cover in the country has been estimated to be 92,769 km² in 2007, which is 2.82% of the geographical area. Tree cover estimate of the country

as per the SFR 2005 was 91,663 km² (2.80%). Tree cover constitutes the largest area in Maharashtra (9,466 km²) followed by Gujarat (8,390 km²), Rajasthan (8,274 km²) and Uttar Pradesh (7,381 km²). Considering the percentage of geographical area under tree cover, the highest rank goes to Lakshadweep (12.50%) followed by Chandigarh (9.65%), Delhi (8.29%), Daman & Diu (8.04%), Goa (7.73%) and Kerala (7.21%).

Forest and Tree Resources in States and Union Territories

7.23.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.23.4.

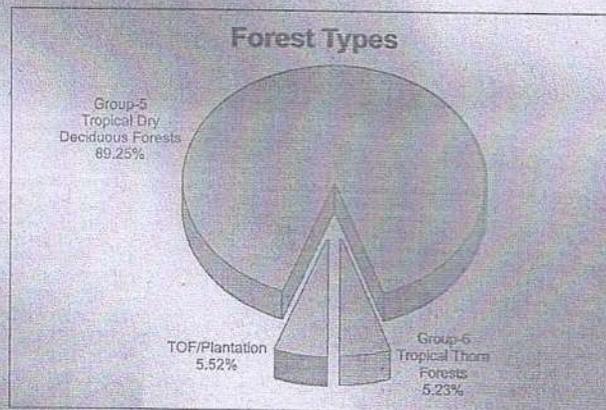
Table 7.23.4: Altitude zone wise forest cover

Altitude Zone	VDF	MDF	OF	Total
0-500m	15	2,680	8,874	11,569
500-1000m	57	1,646	2,588	4,291
1000-2000m	0	124	52	176
Total	72	4,450	11,514	16,036

(based on SRTM Digital Elevation Model)

7.23.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 17 forest types which belong to 2 forest type groups viz Tropical Dry Deciduous and Tropical Thorn Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.



7.23.8 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 8,274 km² which is 2.42% of the geographical area of the State. Eleven districts of the

State (Alwar, Banswara, Chittorgarh, Churu, Ganganagar, Jalore, Kota, Nagaur, Pali, Sirohi and Udaipur) have been inventoried. The forest and tree cover of the State is presented in the Table 7.22.5.

Table 7.23.5: Forest & tree cover

Category	Area	% of Geographical area
Tree Cover	8,274	2.42
Forest Cover	16,036	4.69
Forest & Tree Cover	24,310	7.11

4.6 Tree Cover in the States and Union Territories

Tree cover data of the physiographic zones has been processed further using small area estimation technique, viz. synthetic estimates to estimate tree cover of each state and union territory. One state may fall in one or more physiographic zones. To estimate the tree cover of the state, culturable non-forest cover area falling in different physiographic zones of different states/UTs was calculated. The estimates of tree cover of block, linear, scattered and urban strata of sampled districts has been used to estimate the total tree cover of that physiographic zone using

CNF cover area. To estimate tree cover of the state, the un-inventoried districts of the state falling in a particular zone are estimated using average value of that physiographic zone. The same exercise was repeated for different physiographic zones falling in that state. Adding tree cover of different physiographic zones, tree cover for the respective states has been estimated. However, it may be noted that in some of the states/UTs, estimates for tree cover are only indicative in nature and may have lower levels of precision since the sample size in such states/UTs was small. The estimates of tree cover in the states and UTs are given in Table 4.6.1 and depicted in Fig 4.6.1.

Table 4.6.1: State/ UT-wise Tree Cover Estimates

Sl. No.	State/U.T.	Geographical Area (km ²)	Tree Cover	
			Area (km ²)	% of Geo. Area
1	Andhra Pradesh	275,069	7,152	2.60
2	Arunachal Pradesh	83,743	549	0.66
3	Assam	78,438	1,564	1.99
4	Bihar	94,163	2,369	2.52
5	Chhattisgarh	135,191	3,866	2.86
6	Delhi	1,483	120	8.07
7	Goa	3,702	286	7.73
8	Gujarat	196,022	7,837	4.00
9	Haryana	44,212	1,395	3.15
10	Himachal Pradesh	55,673	623	1.12
11	Jammu & Kashmir	222,236	6,550	2.95
12	Jharkhand	79,714	2,914	3.66
13	Karnataka	191,791	5,733	2.99
14	Kerala	38,863	2,755	7.09
15	Madhya Pradesh	308,245	7,090	2.30
16	Maharashtra	307,713	9,079	2.95
17	Manipur	22,327	193	0.86
18	Meghalaya	22,429	578	2.58
19	Mizoram	21,081	190	0.90
20	Nagaland	16,579	322	1.94
21	Orissa	155,707	4,301	2.76
22	Punjab	50,362	1,699	3.37
23	Rajasthan	342,239	8,272	2.42
24	Sikkim	7,096	25	0.35
25	Tamil Nadu	130,058	4,718	3.63

Tree Cover

Table 4.2: States/ UTs-wise Tree Cover Estimate

(Area in Km²)

States/UTs	Geographical Area	Tree Cover	
		Area	Per cent of G A
Andhra Pradesh	275,069	7,187	2.61
Arunachal Pradesh	83,743	660	0.79
Assam	78,438	1,582	2.02
Bihar	94,163	2,164	2.30
Chhattisgarh	135,191	3,463	2.56
Delhi	1,483	118	7.94
Goa	3,702	334	9.03
Gujarat	196,022	8,358	4.26
Haryana	44,212	1,282	2.90
Himachal Pradesh	55,673	697	1.25
Jammu & Kashmir	222,236	7,664	3.45
Jharkhand	79,714	2,629	3.30
Karnataka	191,791	5,920	3.09
Kerala	38,863	3,146	8.09
Madhya Pradesh	308,245	7,087	2.30
Maharashtra	307,713	9,142	2.97
Manipur	22,327	224	1.00
Meghalaya	22,429	668	2.98
Mizoram	21,081	223	1.06
Nagaland	16,579	372	2.24
Odisha	155,707	4,013	2.58
Punjab	50,362	1,499	2.98
Rajasthan	342,239	7,860	2.30
Sikkim	7,096	31	0.44
Tamil Nadu	130,058	4,866	3.74
Tripura	10,486	213	2.03
Uttar Pradesh	240,928	6,895	2.86
Uttarakhand	53,483	703	1.32
West Bengal	88,752	2,144	2.42
A & N Islands	8,249	41	0.50
Chandigarh	114	10	8.51
Dadra & Nagar Haveli	491	29	5.95
Daman & Diu	112	9	8.46
Lakshadweep	32	5	16.69
Puducherry	480	29	6.07
TOTAL	3,287,263	91,266	2.78

Table 4.2: States/UTs wise tree cover estimates

(Area in km²)

Sl. No	States/UTs	Geographical Area	Tree Cover	
			Area	percent of GA
1	Andhra Pradesh	160,204	3,965	2.48
2	Arunachal Pradesh	83,743	761	0.91
3	Assam	78,438	1,613	2.06
4	Bihar	94,163	2,182	2.32
5	Chhattisgarh	135,191	3,629	2.68
6	Delhi	1,483	111	7.49
7	Goa	3,702	325	8.78
8	Gujarat	196,022	7,914	4.04
9	Haryana	44,212	1,355	3.07
10	Himachal Pradesh	55,673	757	1.36
11	Jammu & Kashmir	222,236	8,354	3.76
12	Jharkhand	79,714	2,783	3.49
13	Karnataka	191,791	5,552	2.89
14	Kerala	38,863	2,951	7.59
15	Madhya Pradesh	308,245	7,773	2.52
16	Maharashtra	307,713	9,558	3.11
17	Manipur	22,327	243	1.09
18	Meghalaya	22,429	710	3.17
19	Mizoram	21,081	535	2.54
20	Nagaland	16,579	381	2.30
21	Odisha	155,707	3,986	2.56
22	Punjab	50,362	1,544	3.07
23	Rajasthan	342,239	8,269	2.42
24	Sikkim	7,096	35	0.50
25	Tamil Nadu	130,058	4,505	3.46
26	Telangana	114,865	2,549	2.22
27	Tripura	10,486	233	2.22
28	Uttar Pradesh	240,928	7,044	2.92
29	Uttarakhand	53,483	752	1.41
30	West Bengal	88,752	2,088	2.35
31	A & N Islands	8,249	37	0.44
32	Chandigarh	114	9	7.80
33	Dadra & Nagar Haveli	491	28	5.72
34	Daman & Diu	112	10	9.18
35	Lakshadweep	32	4	12.50
36	Puducherry	480	27	5.63
	TOTAL	3,287,263	92,572	2.82

The State having maximum tree cover area is Maharashtra (9,558 sq km) followed by J & K (8,354 sq km), Rajasthan (8,269 sq km) and Gujarat (7,914 sq km). Considering the percentage of geographical area of States/ UTs, the Union Territory of Lakshadweep shows highest percentage of tree cover (12.50 percent) followed by Daman & diu (9.18 percent), Goa (8.78 percent), and Chandigarh (7.80 percent).

zone. The same exercise was repeated for different physiographic zones falling in that state. Adding tree cover of different physiographic zones, tree cover for the respective states has been estimated. However, it may be noted that in some of the States/UTs, estimates for tree cover are only indicative in nature and may have lower levels of precision since the sample size in such States/UTs were small. The estimates of tree cover in the States and UTs are given in Table 5.2.

Table 5.2: State/UT wise Tree Cover estimates

Sl.No	State/UT	Geographical Area(sq km)	Tree Cover	
			Area (sq km)	Percent of GA
1	Andhra Pradesh	162,968	3,753	2.30
2	Arunachal Pradesh	83,743	807	0.96
3	Assam	78,438	1,496	1.91
4	Bihar	94,163	2,263	2.40
5	Chhattisgarh	135,192	3,833	2.84
6	Delhi	1,483	113	7.62
7	Goa	3,702	323	8.73
8	Gujarat	196,244	8024	4.09
9	Haryana	44,212	1,415	3.20
10	Himachal Pradesh	55,673	822	1.48
11	Jammu & Kashmir*	222,236	7,815	3.52
12	Jharkhand	79,716	2,922	3.67
13	Karnataka	191,791	5,713	2.98
14	Kerala	38,852	2,959	7.62
15	Madhya Pradesh	308,252	8,073	2.62
16	Maharashtra	307,713	9,831	3.19
17	Manipur	22,327	220	0.99
18	Meghalaya	22,429	657	2.93
19	Mizoram	21,081	467	2.22
20	Nagaland	16,579	379	2.29
21	Odisha	155,707	3,993	2.56
22	Punjab	50,362	1,622	3.22
23	Rajasthan	342,239	8,266	2.42
24	Sikkim	7,096	35	0.49
25	Tamil Nadu	130,060	4,671	3.59
26	Telangana	112,077	2,669	2.38
27	Tripura	10,486	215	2.05
28	Uttar Pradesh	240,928	7,442	3.09
29	Uttarakhand	53,483	767	1.43
30	West Bengal	88,752	2,136	2.41
31	A & N Islands	8,249	35	0.42
32	Chandigarh	114	10	8.77
33	Dadra & Nagar Haveli	491	30	6.11
34	Daman & Diu	111	10	9.01
35	Lakshadweep	30	2	6.67
36	Puducherry	490	27	5.51
	TOTAL	3,287,469	93,815	2.85

* Includes Jammu & Kashmir area outside LoC that is under illegal occupation of Pakistan and China.

11.23.5 Tree Cover

Forest cover presented in the section 11.23.2 accounts for tree patches of size 1 ha and more having canopy density more than 10%. However, trees occurring in patches of size less than 1 ha including scattered trees are assessed through sampling based methodology. Tree cover in Rajasthan has been estimated as given in table 11.23.12.

TABLE 11.23.13 Tree Cover in Rajasthan (in sq km)

Tree Cover	Area
	8,112

Tree cover of Rajasthan has decreased by 154 sq km as compared to the previous assessment reported in ISFR 2017.

11.23.6 Extent of Trees Outside Forest (TOF)

Trees outside Forests (TOF) refer to tree resources found outside the forests as defined in the Government records. FSI maps forest cover using satellite data and assesses tree cover outside forests using sampling based method. Forest Cover outside the recorded forest area is derived using boundaries of RFA or Green Wash. Extent of TOF therefore may be estimated as the sum of extent of forest cover outside the recorded forest areas (RFA) and tree cover as given in the preceding section.

TABLE 11.23.14 Extent of TOF in Rajasthan (in sq km)

Forest Cover outside the RFA/GW	Tree Cover	Extent of TOF
4,348	8,112	12,460

11.23.7 Growing Stock in Forest

Growing stock in the recorded forest areas (RFA) in Rajasthan is given in the table 11.23.15. Diameter class-wise distribution of top 5 species in numbers derived from the forest inventory data is presented in the table 11.23.16

TABLE 11.23.15 Growing Stock in Rajasthan (in m cum)

Growing Stock (GS)		% of Country's GS
Growing Stock in Recorded Forest Area	24.39	0.57
Growing Stock in TOF	89.07	5.42

TABLE 11.23.16 Diameter class distribution of top five species inside RFA in Rajasthan (in '000)

Sl.No.	Species	Dia class (cm)		
		10-30	30-60	>60
1.	<i>Butea monosperma</i>	19,371	1,795	120
2.	<i>Acacia catechu</i>	10,355	268	0
3.	<i>Boswellia serrata</i>	7,289	2,773	0
4.	<i>Anogeissus pendula</i>	55,799	780	60
5.	<i>Tectona grandis</i>	8,075	0	0

11.23.8 Carbon Stock in Forest

The total Carbon stock of forests in the State including the TOF patches which are more than 1 ha in size is 108.36 million tonnes (397.32 million tonnes of CO₂ equivalent) which is 1.52% of total forest carbon of the country. Pool wise forest carbon in Rajasthan is given in the following table

RAJASTHAN



Figure 13.22.4 Fire prone forest areas under different fire prone classes

LEGEND

- Extremely Fire Prone
- Very Highly Fire Prone
- Highly Fire Prone
- Moderately Fire Prone
- Less Fire Prone
- Water-bodies
- International Boundary
- State Boundary
- District Boundary
- Capital

13.22.4 Tree Cover

Tree cover is defined as all tree patches of size less than 1 ha occurring outside the recorded forest area. Tree cover includes trees in all formations including scattered trees. Tree cover in Rajasthan has been estimated as given in following table.

Table 13.22.10 Tree Cover in Rajasthan

(In sq km)

2019 Assessment	2021 Assessment	Change wrt 2019 Assessment
8,112	8,733	621

13.22.5 Extent of Trees Outside Forest (TOF)

Trees outside Forests (TOF) refer to tree resources found outside the forests as defined in the Government records. Forest Cover outside the recorded forest area is derived using boundaries of RFA or Green Wash. Extent of TOF therefore may be estimated as the sum of extent of forest cover outside the recorded forest areas (RFA) and tree cover as given in following table.

Table 13.22.11 Extent of TOF in Rajasthan

(In sq km)

Forest Cover outside the RFA/GW	Tree Cover	Extent of TOF
4,095	8,733	12,828

- The current assessment shows an increase of 156.41 km² in the Forest Cover at national level as compared to the previous assessment.
- The total forest and tree cover of the country has increased by 1445.81 km² as compared to the last assessment of 2021.
- The maximum increase in forest and tree cover has been observed in the States of Chhattisgarh (683.62 km²) followed by Uttar Pradesh (559.19 km²), Odisha (558.57 km²) and Rajasthan (394.46 km²). The maximum decrease in forest and tree cover has been noticed in the state of Madhya Pradesh (612.41 km²) followed by Karnataka (459.36 km²), Ladakh (159.26 km²) and Nagaland (125.22 km²).
- The States showing maximum increase of Forest Cover inside the RFA/GW are Mizoram (192.92 km²) followed by Odisha (118.17 km²), Karnataka (93.14 km²), West Bengal (64.79 km²) and Jharkhand (52.72 km²), whereas the States showing the maximum decrease of Forest Cover inside the RFA/GW are Tripura (116.90 km²) followed by Telangana (105.87 km²), Assam (86.66 km²), Andhra Pradesh (83.47 km²) and Gujarat (61.22 km²).
- The forest cover outside RFA has been shown maximum increase in the state of Gujarat (241.29 km²) followed by Bihar (106.85 km²), Kerala (95.19 km²), Uttar Pradesh (79.27 km²) and Assam (74.90 km²). The states showing decrease in the forest cover outside RFA are Madhya Pradesh (344.77 km²) followed by Rajasthan (110.65 km²), Andhra Pradesh (55.19 km²), Arunachal Pradesh (45.32 km²) and Maharashtra (41.07 km²).
- The extent of TOF (forest cover outside the RFA & GW and tree cover) has been found to be 30.70 M ha, which is 37.11% of the total forest and tree cover in the country.
- The maximum tree cover has been found in the State of Maharashtra (14,524.88 km²) followed by Rajasthan (10,841.12 km²) and Uttar Pradesh (8,950.92 km²). The maximum positive change as compared to ISFR 2021 has been observed in Chhattisgarh (702.75 km²) followed by Rajasthan (478.26 km²) and Uttar Pradesh (440.76 km²). In general, twenty-one States and UTs have shown an increasing trend in tree cover, which indicates that agroforestry, is being promoted in these States
- Western Ghats Eco-Sensitive Areas (WGESA) occupies an area of approximately 60,285.61 km² based on the digital boundary provided by MoEF & CC. Forest cover in all districts under WGESA has been estimated as 44,043.99 km² (73%).
- FSI has carried out a decadal changes analysis of forest cover of WGESA and observed that there has been an overall loss of 58.22 km² in forest cover during the



VAKALATNAMA
BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO. 555/2024

IN THE MATTER OF:

News item titled "India lost 2.33 million hectares of tree cover since 2000 Global Forest Watch" appearing in The Indian Express date 13.04.2024.

know All whom these presents shall come that I, Mahendra Kumar Sharma, aged about 56 years, at present working as Working Plan Officer, Jaipur and Officer in Charge (OIC) for Respondent No. 25, State of Rajasthan through Secretary of the Department of Environment and Climate Change, Government of Rajasthan do hereby appoint:

Prachi Mishra (D/2176/1999), Chaitanya (D/2594/2015); Archita Yadav (D/6295/2024), Vanshika Jhamb (D/4753/2024)
 C-45, Nizamuddin East, IInd Floor, New Delhi-110013
 Ph: +91 9818488187, +91 8800269661, +91 8077139708, +91 8630034654

hereinafter called the Advocate/s to be my/our Advocate/s in the abovementioned Original Application and authorize him/them:

To act, appear and plead in the above noted case in this Court or in any other Court in which the same may be tried or heard and also in the Appellate Court.

To sign, file, verify and present pleadings, applications, appeals, cross-objections, or Petitions for execution, review, revision, withdrawal, compromise or other petitions replies, objections affidavits or other documents as may be deemed necessary or proper for the prosecution of the said case in all its stages.

To file and take back documents.

To withdraw or compromise the said case or submit to arbitration any differences or disputes that may arise touching or in any manner relating to the said case.

To deposit, draw and receive monies, cheques and grant receipts therefore and to do all other acts and things which may be necessary to be done for the progress and in the course of the prosecution of the said case.

To appoint and instruct any other Legal Practitioner authorizing him to exercise the powers and authorities hereby conferred upon the Advocate whenever he may thing fit to do so and to sign the power of attorney on my/our behalf.

And I/we the undersigned do hereby agree to ratify and confirm acts done by the Advocate or his substitute in the matters as if done by me/us to all intents and purposes.

And I/we the undersigned do hereby agree not to hold the Advocate or his substitute responsible for the result of the said case in consequence of his absence from the Court when the said case is called up for hearing, or for, any negligence of the said Advocate or his substitute.

And I/we the undersigned do hereby agree that in the event of the whole or any part of the fee agreed by me/us to be paid to the Advocate remaining unpaid, he shall be entitled to withdraw from the prosecution of the said case until the same is paid. If any costs are allowed for an adjournment, the Advocate would be entitled to the same.

IN WITNESS WHEREOF I/We do hereunto set my/our hand to these presents the contents of which have been understood by me/us this 1st day of March, 2025.
 Accepted and Identified.

Mishra
 ADVOCATES
Archita Yadav
Chaitanya
Vanshika

CLIENT

[Signature]
 कार्य आयोजना अधिकारी
 वन विभाग, जयपुर