BEFORE THE NATIONAL GREEN TRIBUNAL,

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 555 OF 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.

NDOH: 09.05.**2025**

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PLACE: DELHI
DATE: 25.04.2025.

BEFORE THE NATIONAL GREEN TRIBUNAL,

PRINCIPAL BENCH, NEW DELHI

ORIGINAL APPLICATION NO. 555 OF 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 dated 13.04.2024.

AFFIDAVIT FILED ON BEHALF OF THE RESPONDENT NO.38/ UNION TERRITORY OF PUDUCHERRY.

I, Dr. Sharat Chauhan, I.A.S., son of Shri. DPS Chauhan, aged about 56 years, Chief Secretary to Government, Government of Puducherry and having my office in the complex of the Chief Secretariat, Puducherry, do hereby solemnly affirm and sincerely state as under: -

1. I am the Chief Secretary to the Government of the Union Territory of Puducherry and 38th Respondent herein. I am fully conversant with the facts and circumstances of the above captioned matter and am duly competent to file the present Affidavit on behalf of the Government of the Union Territory of Puducherry.

Dr. SHARAT CHAUHAN, IAS
CHIEF SECRETARY TO GOVERNMENT
PUDUCHERRY

2. That the answering 38th Respondent is on receipt of the Notice of this Hon'ble Tribunal issued vide Order dated 18.11.2024, in response to which, this Affidavit is being filed in terms of the aforesaid Order.

3. That the aforesaid Original Application has been registered *Suo-motu* based on the news item titled "India lost 2.33 million hectares of tree cover since 2000 Global Forest Watch" that appeared in the Indian Express newspaper dated 13.04.2024.

4. The answering 38th Respondent humbly submits that there is no loss of green cover in the Union Territory of Puducherry.

5. That as per the INDIA-STATE OF FOREST REPORT, 2023 as prepared by the Forest Survey of India, Dehradun, the Total Forest Cover (Inside and Outside Recorded Forest Area) in the Union Territory of Puducherry is 44.31 Sq. Km.

A true copy of the INDIA-STATE OF FOREST REPORT 2023 is annexed herewith as **Annexure R-1 @ page** 7-8.

6. That as per the INDIA-STATE OF FOREST REPORT, 2023 as prepared by the Forest Survey of India, Dehradun, the Forest Cover in the Union Territory of Puducherry, increased from 2001 to 2015. However, between the years 2017 to 2019, a decreased trend of **forest cover** has been shown. By the year 2021, an increasing trend of forest cover was against witnessed. The data is furnished in the table below:

Dr. SHARAT CHAUHAN, IAS
CHIEF SECRETARY TO GOVERNMENT
PUDUCHERRY

Year	Forest Cover in km^2	*Change (km^2) wrt previous assessment*	Tree Cover in km^2	*Change (km^2) wrt previous assessment*
2001	36.00	+0.00	35.00	+0.00
2003	40.00	+4.00	35.00	+0.00
2005	42.00	+2.00	42.00	+7.00
2007	44.00	+2.00	34.00	-8.00
2009	50.00	+6.00	34.00	-8.00
2011	50.00	+0.00	31.00	-3.00
2013	50.06	+0.06	29.00	-2.00
2015	55.38	+5.32	27.00	-2.00
2017	53.67	-1.71	27.00	+0.00
2019	52.41	-1.26	23.00	-4.00
2021	53.30	+0.89	23.00	+0.00

A true copy of the INDIA-STATE OF FOREST REPORT 2001-2021 is annexed herewith as **Annexure R-2 @ pgs.** 9 **to** 33 .

7. That the INDIA-STATE OF FOREST REPORT, 2023 prepared by the FOREST SURVEY OF INDIA, DEHRADUN, shows that the **Tree Cover** of the Union Territory of Puducherry is in increasing trend from 2001 to 2005 whereas it's in decreasing trend from 2007 to 2019.

A true copy of the INDIA-STATE OF FOREST REPORT, 2001 - 2021 is annexed herewith as **Annexure R-2 @ pgs.** 34 **to** 37 .

Dr. SHARAT CHAUHAN, IAS
CHIEF SECRETARY TO GOVERNMENT
PUDUCHERRY

8. That for the ready reference of this Hon'ble Tribunal, a tabular representation depicting gradual increase in the total percentage of green cover in the Union Territory of Puducherry between the year 2001 to 2021 is furnished as in para 6 hereinabove.

9. The Probable factors responsible for reduction/ fluctuation of forest cover, and tree cover are climatic changes, including periodic cyclone, urbanization and pollution. The factors lead to biotic and abiotic changes which influence or impact forest/tree cover. For instance, biotic agents such as invasive alien flora and fauna entering the eco-system lead to either loss of the native species or to reduction in their number and distribution over a period. Abiotic agents like Green House Gasses (GHGs), pollutants like plastics, construction waste dump, industrial waste based effluents may also lead to habitat loss which aggravates the loss of forest or tree cover. Periodic cyclones have also played a devastating role uprooting and damaging the trees and reducing the forest coverage.

10. Plantation of indigenous tree species in the urban and rural areas is being taken up for the conservation of forest eco-system and management of forests and tree cover in the UT of Puducherry. Awareness programmes are another way to enhance people participation in and community ownership of greening activities.

Dr. SHARAT CHAUHAN, IAS
CHIEF SECRETARY TO GOVERNMENT
PUDUCHERRY

Some of the activities are depicted in the form of pictures as **Annexure R-3 @ pgs. C29 to C32.**

11. That Respondent No.38 through its various Agencies is taking all possible measures to conserve and manage the forest and tree cover in the context of the Union Territory of Puducherry.

12. That the contents of the foregoing Affidavit are true and correct to the best of my knowledge, no part of it is false and nothing material has been concealed therefrom.

DEPONENT

Dr. SHARAT CHAUHAN, IAS
CHIEF SECRETARY TO GOVERNMENT
PUDUCHERRY

VERIFICATION

I, Dr. Sharat Chauhan, I.A.S., the deponent above-named, do hereby verify and declare that the facts stated in the above Affidavit from para Nos.1 to 12 are true to my knowledge and belief.

Verified at Puducherry on this the 22nd day of April, 2025.

DEPONENT

Dr. SHARAT CHAUHAN, IAS
CHIEF SECRETARY TO GOVERNMENT
PUDUCHERRY

SIGNED BEFORE ME
BEFORE ME

A. KARTHIKEYAN, B.A., L.L.
ADVOCATE & NOTARY PUBLIC
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ANNEXURE - R1

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Forest and Tree Cover

	Forest Cover Outside RFA/GW 2023				Forest Cover Change Outside RFA / GW	Total Forest Cover 2021*	Total Forest Cover 2023	Total Forest Cover Change	Tree Cover 2021*	Total Forest Cover including Tree Cover 2021	Tree Cover 2023	Total Forest Cover including Tree Cover 2023	Change in Tree Cover	Net Change in Forest Cover and Tree Cover	Percentage of Forest Cover and Tree Cover*
Total	VDF	MDF	OF	Total											
(D)				(E)	(F-D)	(G=B+D)	(T= C+E)	(T-S)*	(F)	(X=S+F)	(G)	(Y=T+G)	(G-F)	(Y-X)	(X*100/
6,272.39	70.39	1,256.05	4,890.76	6,217.20	-55.19	30,223.62	30,084.96	-138.66	5,247.36	35,470.98	5,340.02	35,424.98	92.66	-46.00	21.74
7,752.93	1,348.27	2,915.15	3,444.19	7,707.61	-45.32	65,972.74	65,881.57	-91.17	1,162.95	67,135.69	1,201.63	67,083.20	38.68	-52.49	80.11
8,541.92	356.40	1,430.76	6,829.66	8,616.82	74.90	28,325.31	28,313.55	-11.76	2,173.62	30,498.93	2,101.46	30,415.01	-72.16	-83.92	38.78
2,559.86	11.21	838.96	1,816.54	2,666.71	106.85	7,403.26	7,532.45	129.19	2,623.38	10,026.64	2,370.21	9,902.66	-253.17	-123.98	10.52
13,397.08	1,620.49	5,912.95	5,857.92	13,391.36	-5.72	55,830.88	55,811.75	-19.13	5,835.95	61,666.83	6,538.70	62,350.45	702.75	683.62	46.12
124.90	2.45	35.31	85.32	123.08	-1.82	195.36	195.28	-0.08	171.06	366.42	176.03	371.31	4.97	4.89	25.04
1,043.15	22.85	249.12	769.82	1,041.79	-1.36	2,267.22	2,265.72	-1.50	260.08	2,527.30	257.82	2,523.54	-2.26	-3.76	68.17
5,385.48	19.40	954.03	4,653.34	5,626.77	241.29	14,836.57	15,016.64	180.07	6,648.28	21,484.85	6,632.29	21,648.93	-15.99	164.08	11.03
896.52	3.18	182.41	699.74	885.33	-11.19	1,628.22	1,614.26	-13.96	1,551.85	3,180.07	1,693.02	3,307.28	141.17	127.21	7.48
4,853.72	325.78	1,848.41	2,699.19	4,873.38	19.66	15,525.62	15,580.35	54.73	813.35	16,338.97	855.07	16,435.42	41.72	96.45	29.52
11,257.16	1,187.82	4,379.94	5,695.49	11,263.25	6.09	23,706.97	23,765.78	58.81	3,409.40	27,116.37	3,637.55	27,403.33	228.15	286.96	34.38
16,185.81	799.89	8,274.78	7,165.70	16,240.37	54.56	39,106.57	39,254.27	147.70	8,386.21	47,492.78	7,779.15	47,033.42	-607.06	-459.36	24.52
12,038.33	163.56	3,901.46	8,068.48	12,133.52	95.19	21,925.94	22,059.36	133.42	3,025.60	24,951.54	2,905.94	24,965.30	-119.66	13.76	64.26
9,647.71	135.10	2,141.67	7,026.17	9,302.94	-344.77	77,444.98	77,073.44	-371.54	8,891.01	86,335.99	8,650.14	85,723.58	-240.87	-612.41	27.81
14,788.67	326.63	5,750.40	8,670.57	14,747.60	-41.07	50,913.00	50,858.53	-54.47	14,413.67	65,326.67	14,524.88	65,383.41	111.21	56.74	21.25
1,802.01	10.53	472.69	1,311.43	1,794.65	-7.36	16,640.29	16,585.46	-54.83	217.19	16,857.48	209.82	16,795.28	-7.37	-62.20	75.22
2,313.18	46.91	1,521.76	747.32	2,315.99	2.81	16,996.84	16,966.84	-30.00	774.63	17,771.47	720.56	17,687.40	-54.07	-84.07	78.96
312.05	1.69	197.23	161.94	360.86	48.81	17,748.73	17,990.46	241.73	631.11	18,379.84	567.80	18,558.26	-63.31	178.42	88.03
3,723.41	100.25	1,293.51	2,308.68	3,702.44	-20.97	12,274.36	12,222.47	-51.89	467.35	12,741.71	394.02	12,616.49	-73.33	-125.22	76.10
19,359.37	1,515.26	6,231.04	11,646.79	19,393.09	33.72	52,281.67	52,433.56	151.89	5,756.77	58,038.44	6,163.45	58,597.01	406.68	558.57	37.63
1,069.74	0.72	334.68	734.93	1,070.33	0.59	1,846.54	1,846.09	-0.45	1,297.93	3,144.47	1,475.15	3,321.24	177.22	176.77	6.59
3,952.72	6.28	344.68	3,491.11	3,842.07	-110.65	16,632.01	16,548.21	-83.80	10,362.86	26,994.87	10,841.12	27,389.33	478.26	394.46	8.00
1,295.50	272.23	676.13	349.41	1,297.77	2.27	3,353.21	3,358.40	5.19	50.64	3,403.85	48.33	3,406.73	-2.31	2.88	48.01
8,753.88	242.06	2,345.43	6,128.43	8,715.92	-37.96	26,511.18	26,450.22	-60.96	5,323.73	31,834.91	5,370.72	31,820.94	46.99	-13.97	24.47
2,717.48	68.51	388.93	2,265.49	2,722.93	5.45	21,279.46	21,179.04	-100.42	3,478.88	24,758.34	3,517.66	24,696.70	38.78	-61.64	22.03
2,206.99	220.66	1,210.15	797.77	2,228.58	21.59	7,680.08	7,584.77	-95.31	252.95	7,933.03	247.56	7,832.33	-5.39	-100.70	74.69
5,627.77	150.92	959.92	4,596.20	5,707.04	79.27	14,927.37	15,045.80	118.43	8,510.16	23,437.53	8,950.92	23,996.72	440.76	559.19	9.96
7,413.09	746.50	3,407.78	3,250.27	7,404.55	-8.54	24,326.81	24,303.83	-22.98	1,201.59	25,528.40	1,231.14	25,534.97	29.55	6.57	47.74
9,158.34	255.99	1,521.11	7,366.67	9,143.77	-14.57	16,782.11	16,832.33	50.22	2,962.61	19,744.72	2,938.12	19,770.45	-24.49	25.73	22.28
564.14	308.88	127.71	125.82	562.41	-1.73	6,736.94	6,732.92	-4.02	24.51	6,761.45	26.97	6,759.89	2.46	-1.56	81.95
15.09	0.08	8.48	7.50	16.06	0.97	23.80	25.00	1.20	16.72	40.52	21.18	46.18	4.46	5.66	40.51
65.92	1.36	10.74	55.01	67.11	1.19	225.94	225.62	-0.32	34.87	260.81	36.83	262.45	1.96	1.64	43.60
8,185.59	1,134.93	2,653.83	4,445.60	8,234.36	48.77	21,262.84	21,346.39	83.55	3,659.27	24,922.11	3,666.97	25,013.36	7.70	91.25	12.69
1,478.07	0.07	325.54	1,165.73	1,491.34	13.27	2,278.55	2,285.92	7.37	1,059.65	3,338.20	893.02	3,178.94	-166.63	-159.26	
27.06	0.00	16.97	10.09	27.06	0.00	27.06	27.06	0.00	0.05	27.11	0.20	27.26	0.15	0.15	92.00
41.13	0.00	9.72	31.51	41.23	0.10	44.15	44.31	0.16	27.70	71.85	28.89	73.20	1.19	1.35	14.94
1,94,828.16	**11,477.27**	**64,129.43**	**1,19,370.59**	**1,94,977.29**	**149.13**	**7,15,186.20**	**7,15,342.61**	**156.41**	**1,10,724.94**	**8,25,911.14**	**1,12,014.34**	**8,27,356.95**	**1,289.40**	**1,445.81**	**25.17**

Table 2.4 State/UT wise Forest Cover inside and outside Recorded Forest Area (RFA)/Green Wash (GW)

State/UT	Geographical Area	Forest Cover Inside RFA/GW 2021*				Forest Cover Inside RFA/GW 2023				Forest Cover Change Inside RFA/GW	Forest Cover Outside RFA/GW 2021*		
		VDF	MDF	OF	Total	VDF	MDF	OF	Total		VDF	MDF	OF
	(A)				(B)				(C)	(C-B)			
Andhra Pradesh	1,62,922.57	1,925.22	12,588.26	9,437.75	23,951.23	1,925.32	12,469.70	9,472.74	23,867.76	-83.47	72.45	1,324.76	4,875.18
Arunachal Pradesh	83,743.22	19,633.01	26,867.22	11,719.58	58,219.81	19,637.05	26,699.94	11,836.97	58,173.96	-45.85	1,372.87	2,971.29	3,408.77
Assam	78,438.00	2,789.68	8,468.10	8,525.61	19,783.39	2,833.31	8,333.78	8,529.64	19,696.73	-86.66	357.15	1,431.29	6,753.48
Bihar	94,163.00	319.32	2,477.28	2,046.80	4,843.40	375.79	2,445.25	2,044.70	4,865.74	22.34	11.61	819.02	1,729.23
Chhattisgarh	1,35,192.00	5,449.44	26,367.76	10,616.60	42,433.80	5,796.08	26,070.85	10,553.46	42,420.39	-13.41	1,605.33	5,935.11	5,856.64
Delhi	1,483.00	4.06	18.75	47.65	70.46	4.02	18.24	49.94	72.20	1.74	2.66	37.74	84.50
Goa	3,702.00	518.19	325.85	380.03	1,224.07	532.61	340.31	351.01	1,223.93	-0.14	22.56	237.61	782.98
Gujarat	1,96,244.00	356.23	3,961.48	5,133.38	9,451.09	400.31	3,948.17	5,041.39	9,389.87	-61.22	18.62	955.52	4,411.34
Haryana	44,212.00	23.99	259.08	448.63	731.70	23.99	258.77	446.17	728.93	-2.77	3.18	185.98	707.36
Himachal Pradesh	55,673.00	2,835.93	5,395.79	2,440.18	10,671.90	2,791.82	5,431.88	2,483.27	10,706.97	35.07	361.75	1,828.56	2,663.41
Jharkhand	79,716.00	1,444.93	5,260.88	5,744.00	12,449.81	1,447.53	5,261.05	5,793.95	12,502.53	52.72	1,183.38	4,380.88	5,692.90
Karnataka	1,91,791.00	3,735.18	12,885.56	6,300.02	22,920.76	3,737.90	12,876.97	6,399.03	23,013.90	93.14	799.82	8,294.93	7,091.06
Kerala	38,852.00	1,878.93	5,429.89	2,578.79	9,887.61	1,877.59	5,420.36	2,627.89	9,925.84	38.23	164.00	3,923.79	7,950.54
Madhya Pradesh	3,08,252.11	6,468.74	31,676.75	29,651.78	67,797.27	6,886.21	31,366.97	29,517.32	67,770.50	-26.77	189.37	2,462.26	6,996.08
Maharashtra	3,07,713.00	8,497.78	15,103.73	12,522.82	36,124.33	9,538.99	15,827.39	10,744.55	36,110.93	-13.40	303.75	5,516.60	8,968.32
Manipur	22,327.00	893.87	5,776.36	8,168.05	14,838.28	893.52	5,744.86	8,152.43	14,790.81	-47.47	10.68	484.15	1,307.18
Meghalaya	22,429.00	508.98	7,599.66	6,575.02	14,683.66	547.93	7,502.05	6,600.87	14,650.85	-32.81	46.47	1,537.75	728.96
Mizoram	21,081.00	193.73	8,648.64	8,594.31	17,436.68	259.83	8,438.53	8,931.24	17,629.60	192.92	0.36	190.89	120.80
Nagaland	16,579.00	1,159.01	3,172.73	4,219.21	8,550.95	1,156.13	3,168.30	4,195.60	8,520.03	-30.92	102.24	1,312.73	2,308.44
Odisha	1,55,707.00	5,706.07	14,800.09	12,416.14	32,922.30	5,709.16	14,834.51	12,496.80	33,040.47	118.17	1,521.14	6,227.68	11,610.55
Punjab	50,362.00	9.20	450.57	317.03	776.80	8.72	450.21	316.83	775.76	-1.04	0.72	335.03	733.99
Rajasthan	3,42,238.99	74.96	4,021.11	8,583.22	12,679.29	216.92	3,892.73	8,596.49	12,706.14	26.85	3.87	353.94	3,594.91
Sikkim	7,096.00	831.81	880.77	345.13	2,057.71	831.08	879.76	349.79	2,060.63	2.92	272.24	676.05	347.21
Tamil Nadu	1,30,060.00	3,346.49	8,689.97	5,720.84	17,757.30	3,344.13	8,681.60	5,708.57	17,734.30	-23.00	242.47	2,383.64	6,127.77
Telangana	1,12,122.44	1,548.47	8,632.59	8,380.92	18,561.98	1,544.81	8,520.97	8,390.33	18,456.11	-105.87	71.11	440.24	2,206.13
Tripura	10,486.00	408.31	3,885.15	1,179.63	5,473.09	393.77	3,719.84	1,242.58	5,356.19	-116.90	225.33	1,258.32	723.34
Uttar Pradesh	2,40,927.56	2,504.56	3,049.96	3,745.08	9,299.60	2,557.81	3,041.49	3,759.46	9,338.76	39.16	150.73	945.57	4,531.47
Uttarakhand	53,483.36	4,314.25	9,306.92	3,292.55	16,913.72	4,520.08	9,109.85	3,269.35	16,899.28	-14.44	726.93	3,439.86	3,246.30
West Bengal	88,752.00	2,763.59	2,623.20	2,236.98	7,623.77	2,781.11	2,654.27	2,253.18	7,688.56	64.79	253.67	1,506.87	7,397.80
A & N Islands	8,249.00	5,373.00	549.13	250.67	6,172.80	5,393.99	525.49	251.03	6,170.51	-2.29	309.80	127.93	126.41
Chandigarh	114.00	1.29	5.07	2.35	8.71	1.36	5.04	2.54	8.94	0.23	0.07	8.68	6.34
Dadra & Nagar Haveli and Daman & Diu	602.00	0.00	69.38	90.64	160.02	0.00	67.85	90.66	158.51	-1.51	1.36	11.62	52.94
Jammu & Kashmir**	2,22,236.00	3,073.01	5,351.35	4,652.89	13,077.25	3,073.86	5,352.73	4,685.44	13,112.03	34.78	1,133.39	2,639.37	4,412.83
Ladakh**		2.20	179.16	619.12	800.48	2.20	183.53	608.85	794.58	-5.90	0.07	333.12	1,144.88
Lakshadweep	29.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	16.97	10.09
Puducherry	490.00	0.00	0.61	2.41	3.02	0.00	0.61	2.47	3.08	0.06	0.00	10.15	30.98
Total	**32,87,468.88**	**88,593.43**	**2,44,778.80**	**1,86,985.81**	**5,20,358.04**	**91,024.93**	**2,43,543.85**	**1,85,796.54**	**5,20,365.32**	**7.28**	**11,541.15**	**64,545.90**	**1,18,741.11**

*Revised area figures calculated without normalization factor.

** Area for individual UTs of Jammu & Kashmir and Ladakh have not been received from SoI. The geographical area reported for the unified J&K in Census 2011 is 2,22,236 km². The States/UTs which have provided RFA boundaries are shown in light green colour while the other States/ UTs where GW have been used are shown in dark green colour.

#Tree cover also includes all bamboo clumps and trees of dbh of 5-10 cm which were not included in published figures reported in ISFR 2021. Therefore, Tree cover figures of 2021 have also been revised.

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(Area in Km²)

State/UT	1999 Assessment			2001 Assessment			Net Difference
	Dense*	Open	Total a	Dense*	Open	Total b	(b-a)
Maharashtra	26,721	19,951	46,672	30,894	16,588	47,482	+810
Manipur	5,936	11,448	17,384	5,710	11,216	16,926	-458
Meghalaya	5,925	9,708	15,633	5,681	9,903	15,584	-49
Mizoram	3,786	14,552	18,338	8,936	8,558	17,494	-844
Nagaland	5,137	9,027	14,164	5,393	7,952	13,345	-819
Orissa	26,288	20,745	47,033	27,972	20,866	48,838	+1,805
Punjab	517	895	1,412	1,549	883	2,432	+1,020
Rajasthan	4,309	9,562	13,871	6,322	10,045	16,367	+2,496
Sikkim	2,363	755	3,118	2,391	802	3,193	+75
Tamilnadu	8,680	8,398	17,078	12,499	8,983	21,482	+4,404
Tripura	2,228	3,517	5,745	3,463	3,602	7,065	+1,320
Uttar Pradesh	5,053	5,703	10,756	8,965	4,781	13,746	+2,990
Uttaranchal	17,849	5,411	23,260	19,023	4,915	23,938	+678
West Bengal	5,690	2,672	8,362	6,346	4,347	10,693	+2,331
Andaman & Nicobar	7,481	125	7,606	6,593	337	6,930	-676
Chandigarh	6	1	7	5	4	9	+2
Dadar & Nagar Haveli	159	43	202	151	68	219	+17
Daman & Diu	0	3	3	2	4	6	+3
Lakshdweep	0	0	0	27	0	27	+27
Pondicherry	0	0	0	35	1	36	+36
Total	**382,229**	**255,064**	**637,293**	**416,809**	**258,729**	**675,538**	**+38,245**

* including mangroves

3.03 Explanatory Notes

The net difference in forest cover between 2001 and 1999 assessments shown in Table 3.01 is composed of two entities: (i) difference due to technical factors and (ii) the real change in the forest cover during the intervening period between the two assessments. However, it is not practically possible to determine the real change in forest cover during the periods between 1999 and 2001 assessments.

For example, within the geographical area of forest cover delineated during 1999 assessment, small gaps or blanks or additional forest patches noticed during 2001 assessment may have been created during the intervening period or might have been there even earlier but were not discernible due to coarser resolution of interpretation. Similarly, the additional forest cover captured outside the above area delineated as non-forest during 1999 assessment may be due to new plantations becoming visible or because of a number of small patches of older tree crops now getting captured. Any exercise to divide the total change in forest cover into; (a) change due to technical factors and (b) real change since 1999 assessment, would entail detailed ground verification at a very large number of sites showing change in forest cover. This would require enormous amount of time, manpower and financial resource.

Remotely sensed digital data of a given landscape when assessed with different techniques at different scales usually produces somewhat different outputs

State/UT	Geographic Area (Km²)	CNFA (Km²)	Trees per ha	Number of Trees ('000)	Tree Cover		
					Area (Km²)	% of Geog. Area	% of CNFA
Andaman & Nicobar	8,249	1,060	19.7	2,092	83	1.01	7.87
Chandigarh	114	81	9.4	76	2	1.63	2.29
Dadra Nagar Haveli	491	261	24.2	631	27	5.54	10.42
Daman & Diu	112	105	13.4	141	4	3.29	3.50
Lakshadweep	32	3	13.5	4	0	0.27	2.76
Pondicherry	480	431	19.3	830	35	7.19	8.01
Total	**3,287,263**	**2,245,431**	**11.0**	**2,461,593**	**81,472**	**2.48**	**3.63**

4.11 Some Remarks

The assessment of tree cover for the whole country requires a huge volume of latest data. In the present assessment, the sample size, especially for survey of tree cover in urban areas, was quite small. In the future assessments, endeavour would be made to increase sampling intensity in urban areas and in those physiographic zones where the estimated error is over 15 percent. Information on State and UT wise tree cover is more meaningful for planning purposes. Sufficient data would be collected from each State/UT to compute such information with greater accuracy.

An interesting piece of information that can be obtained from Tables 4.03 and 4.04 is about the average number of trees in different zones or States/UTs that constitute a unit area of tree cover. This information can be obtained by dividing the number of trees estimated in CNFA of a given region with the tree cover assessed for that region. For example, the average for the whole country is just over 300 trees per ha, which means that the distribution of size and species of trees in the country is such that on an average 300 trees cover an area of one hectare at 70 percent canopy density. The corresponding average is as high as 659 for North East (NE) and as low as 184 for East Deccan (ED). It implies that tree cover in NE Zone largely consist of small and young trees while in ED Zone the trees are mostly old, large sized and with big crown. An idea about approximate nature of trees constituting tree cover in different States and UTs can also be acquired by using this exercise.

Since tree cover assessment was merely a statistical task (no maps showing locations of tree cover can be drawn), monitoring changes in these over a period in the future will also be a statistical exercise. Given the standard errors associated with each assessment, one can only conclude if the difference noted in tree covers within any region in the two periods is significant or not. Although, non-spatial data on changes in tree cover can be provided, it will not be possible, with the method of assessment used at present, to locate on a map where the changes have taken place in the tree cover within a physiographic zone or a State/UT.

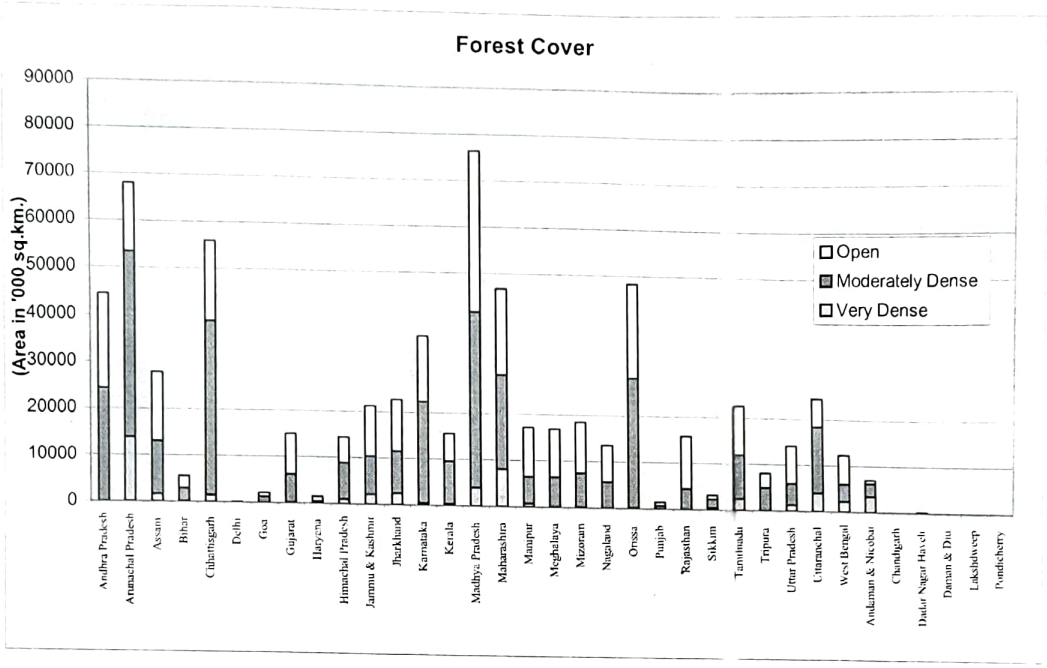


Figure 2.04: Forest Cover in States and UTs

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 (82.09percent) 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

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**

Forest Cover

at maintaining two thirds of the geographical area in hills of the country under forest and tree cover.

Forest Survey of India (FSI) has been assessing forest cover in the hill districts of the country since 1997. The hill districts identified for the forest cover analysis are the same as the ones identified by the Planning Commission for Hill Areas and Western Ghats Development Programme. As per the Planning Commission's criterion, a hill taluka is the one with altitude more than 500 m from the mean sea level. A hill district is one whose total area of hill talukas is more than half of the geographic area of the district.

Based on this criterion, there are 124 hill districts (marked 'H' in district-wise tables of forest cover in Chapter 8)

Table 2.2: Forest cover in States/UTs in India

(area in km²)

State / UT	Geographic Area	Forest Cover					
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total	Percent of G.A.	Scrub
Andhra Pradesh	275,069	130	24,199	20,043	44,372	16.13	9,862
Arunachal Pradesh	83,743	14,411	37,977	15,389	67,777	80.93	128
Assam	78,438	1,444	11,387	14,814	27,645	35.24	146
Bihar	94,163	110	3,004	2,465	5,579	5.92	129
Chhattisgarh	135,191	2,256	36,472	17,135	55,863	41.32	91
Delhi	1,483	0	54	122	176	11.87	0.62
Goa	3,702	55	1,095	1,014	2,164	58.45	2
Gujarat	196,022	114	6,024	8,577	14,715	7.51	1,495
Haryana	44,212	3	523	1,061	1,587	3.59	165
Himachal Pradesh	55,673	1,097	7,831	5,441	14,369	25.81	383
Jammu & Kashmir	222,236	2,135	8,394	10,744	21,273	9.57	2,821
Jharkhand	79,714	2,544	9,078	10,969	22,591	28.34	733
Karnataka	191,791	464	21,634	13,153	35,251	18.38	3,151
Kerala	38,863	1,024	8,636	5,935	15,595	40.13	70
Madhya Pradesh	308,245	4,239	36,843	34,931	76,013	24.66	2,172
Maharashtra	307,713	8,191	20,193	19,092	47,476	15.43	4,248
Manipur	22,327	923	5,541	10,622	17,086	76.53	39
Meghalaya	22,429	338	6,808	9,842	16,988	75.74	181
Mizoram	21,081	133	6,173	12,378	18,684	88.63	0
Nagaland	16,579	236	5,602	7,881	13,719	82.75	13
Orissa	155,707	538	27,656	20,180	48,374	31.07	4,743
Punjab	50,362	0	723	835	1,558	3.09	15
Rajasthan	342,239	14	4,456	11,380	15,850	4.63	4,527
Sikkim	7,096	498	1,912	852	3,262	45.97	363
Tamil Nadu	130,058	2,650	9,790	10,604	23,044	17.72	1,808
Tripura	10,486	61	4,969	3,125	8,155	77.77	59
Uttar Pradesh	240,928	1,297	4,682	8,148	14,127	5.86	748
Uttarakhand	53,483	4,002	14,396	6,044	24,442	45.7	320
West Bengal	88,752	2,302	3,777	6,334	12,413	13.99	68
Andaman & Nicobar	8,249	3,359	2,646	624	6,629	80.36	3
Chandigarh	114	1	8	6	15	13.16	1
Dadra & Nagar Haveli	491	0	130	91	221	45.01	0
Daman & Diu	112	0	2	6	8	7.14	0
Lakshadweep	32	0	15	10	25	78.13	0
Pondicherry	480	0	17	25	42	8.75	0
Total	**3,287,263**	**54,569**	**332,647**	**289,872**	**677,088**	**20.60**	**38,475**

Table 5.2: State/UT wise tree cover estimates

Sl. No.	State/U.T	Geographic Area	Trees per ha of CNFA	Tree Cover Area(km²)	% 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**

2007

Table 2.7.1: Forest cover in States/UTs in India in 2007

(area in km²)

State / UT	Geographical Area	Forest Cover				% of G.A.	Change* in forest cover	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest	Total			
Andhra Pradesh	275,069	820	24,757	19,525	45,102	16.40	-129	10,372
Arunachal Pradesh	83,743	20,858	31,556	14,939	67,353	80.43	-119	111
Assam	78,438	1,461	11,558	14,673	27,692	35.30	-66	179
Bihar	94,163	231	3,248	3,325	6,804	7.23	-3	134
Chhattisgarh	135,191	4,162	35,038	16,670	55,870	41.33	-59	107
Delhi	1,483	7	50	120	177	11.94	0	1
Goa	3,702	511	624	1,016	2,151	58.10	-5	1
Gujarat	196,022	376	5,249	8,995	14,620	7.46	16	1,463
Haryana	44,212	27	463	1,104	1,594	3.61	-10	145
Himachal Pradesh	55,673	3,224	6,383	5,061	14,668	26.35	2	327
Jammu & Kashmir	222,236	4,298	8,977	9,411	22,686	10.21	-3	2,036
Jharkhand	79,714	2,590	9,899	10,405	22,894	28.72	172	683
Karnataka	191,791	1,777	20,181	14,232	36,190	18.87	-10	3,176
Kerala	38,863	1,443	9,410	6,471	17,324	44.58	40	58
Madhya Pradesh	308,245	6,647	35,007	36,046	77,700	25.21	-39	6,401
Maharashtra	307,713	8,739	20,834	21,077	50,650	16.46	-11	4,157
Manipur	22,327	701	5,474	11,105	17,280	77.40	328	1
Meghalaya	22,429	410	9,501	7,410	17,321	77.23	116	211
Mizoram	21,081	134	6,251	12,855	19,240	91.27	640	1
Nagaland	16,579	1,274	4,897	7,293	13,464	81.21	-201	2
Orissa	155,707	7,073	21,394	20,388	48,855	31.38	100	4,852
Punjab	50,362	0	733	931	1,664	3.30	4	20
Rajasthan	342,239	72	4,450	11,514	16,036	4.69	24	4,347
Sikkim	7,096	500	2,161	696	3,357	47.31	0	356
Tamil Nadu	130,058	2,926	10,216	10,196	23,338	17 94	24	1,206
Tripura	10,486	111	4,770	3,192	8,073	76.95	-100	75
Uttar Pradesh	240,928	1,626	4,563	8,152	14,341	5.95	-5	745
Uttarakhand	53,483	4,762	14,165	5,568	24,495	45.80	2	271
West Bengal	88,752	2,987	4,644	5,363	12,994	14.64	24	29
Andaman & Nicobar	8,249	3,762	2,405	495	6,662	80.76	-1	53
Chandigarh	114	1	10	6	17	14.91	0	1
Dadra & Nagar Haveli	491	0	114	97	211	42.97	-5	1
Daman & Diu	112	0	1	5	6	5.04	0	3.0
Lakshadweep	32	0	16	10	26	82.75	0	0
Puducherry	480	0	13	31	44	9.14	2	0
Grand Total	**3,287,263**	**83,510**	**319,012**	**288,377**	**690,899**	**21.02**	**728**	**41,525**

*The change in the above table refers to change in the area with respect to revised assessment for 2005.

2.9 Forest Cover in Tribal Districts

Forests are central to the cultural and economic life of tribal people, who have lived in forests in harmony since ages. It is important to monitor and analyse the forest cover situation in the tribal areas. The tribal districts for purpose of this section are those as identified by the Government of India under the Integrated Tribal Development Programme.

In all, there are 188 tribal districts in 26 States/UTs in the country (marked 'T' in district-wise

Table 7.35.3: District-wise forest cover in 2007
Number of districts:4

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Karaikal	161	0	0.56	4.48	5.04	3.13	0	0
Mahe	9	0	1.36	1.54	2.9	32.22	0	0
Puducherry	293	0	11.02	21.91	32.93	11.24	1.52	0
Yanam	17	0	0	3	3	17.65	0	0
Total	**480**	**0**	**12.94**	**30.93**	**43.87**	**9.14**	**1.52**	**0**

* Change compared to 2005 assessment (revised).

7.35.5 Altitude Zone wise Forest Cover

Forest cover of the UT in different altitude zones is given in Table 7.35.4.

Table 7.35.4: Altitude zone wise forest cover

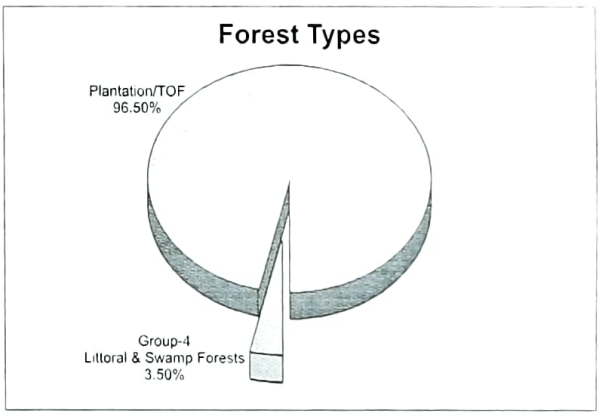
(area in km²)

Altitude Zone	VDF	MDF	OF	Total
0-500m	0	12.94	30.93	43.87
Total	**0**	**12.94**	**30.93**	**43.87**

(based on SRTM Digital Elevation Model)

7.35.6 Forest Cover in Different Forest Types

As per Champion & Seth Classification (1968), the UT has all its forest cover belonging to Littoral & Swamp Forests type group. Distribution of forest cover in the above forest type group and plantation/TOF is given in the pie diagram.



7.35.7 Tree Cover

Tree cover of the UT 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 UT is 34 km² which is 7.08% of the geographical area of the UT. Karaikal district of the UT has been inventoried .

The forest and tree cover of the UT is presented in the Table 7.35.5.

Table 7.35.5: Forest & tree cover

(area in km²)

Category	Area	% of Geographical area
Tree Cover	34	7.08
Forest Cover	43.87	9.14
Forest & Tree Cover	**77.87**	**16.22**

(Area in

Andhra Pradesh	275069	850	26242	19297	46389	45102	1568	46670	-281
Arunachal Pradesh	83743	20868	31519	15023	67410	67353	131	67484	-74
Assam	78438	1444	11404	14825	27673	27692	0	27692	-19
Bihar	94163	231	3280	3334	6845	6804	0	6804	41
Chhattisgarh	135191	4163	34911	16600	55674	55870	-192	55678	-4
Delhi	1483	7	49	120	176	177	0	177	0
Goa	3702	543	585	1091	2219	2151	61	2212	7
Gujarat	196022	376	5231	9012	14619	14620	0	14620	-1
Haryana	44212	27	457	1124	1608	1594	0	1594	14
Himachal Pradesh	55673	3224	6381	5074	14679	14668	0	14668	11
Jammu & Kashmir	222236	4140	8760	9639	22539	22686	-149	22537	2
Jharkhand	79714	2590	9917	10470	22977	22894	0	2894	83
Karnataka	191791	1777	20179	14238	36194	36190	0	36190	4
Kerala	38863	1442	9394	6464	17300	17324	0	17324	-24
Madhya Pradesh	308245	6640	34986	36074	77700	77700	0	77700	0
Maharashtra	307713	8736	20815	21095	50646	50650	0	50650	-4
Manipur	22327	730	6151	10209	17090	17280	0	17280	-190
Meghalaya	22429	433	9775	7067	17275	17321	0	17321	-46
Mizoram	21081	134	6086	12897	19117	19240	-57	19183	-66
Nagaland	16579	1293	4931	7094	13318	13464	0	13464	-146
Orissa	155707	7060	21366	20477	48903	48855	0	48855	48
Punjab	50362	0	736	1028	1764	1664	0	1664	100
Rajasthan	342239	72	4448	11567	16087	16036	0	16036	51
Sikkim	7096	500	2161	698	3359	3357	2	3359	0
Tamil Nadu	130058	2948	10321	10356	23625	23338	213	23551	74
Tripura	10486	109	4686	3182	7977	8073	-88	7985	-8
Uttar Pradesh	240928	1626	4559	8153	14338	14341	0	14341	-3
Uttarakhand	53483	4762	14167	5567	24496	24495	0	24495	1
West Bengal	88752	2984	4646	5365	12995	12994	0	12994	1
A & N Islands	8249	3761	2416	547	6724	6662	0	6662	62
Chandigarh	114	1	10	6	17	17	0	17	0
Dadra & Nagar Haveli	491	0	114	97	211	211	0	211	0
Daman & Diu	112	0	0.62	5.53	6	6	0	6	0
Lakshadweep	32	0	17.18	9.88	27	26	0	26	1
Puducherry	480	0	35.37	14.69	50	44	6	50	0
	3287263	**83471**	**320736**	**287820**	**692027**	**690899**	**1495**	**692394**	**-367**

* *Change in the above Table refers to change in the area with respect to 2009 assessment after incorporating interpretational changes.*

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 km^2 in 2007, which is 2.82% of the geographical area. Tree cover estimate of the country as per the SFR 2005 was 91,663 km^2 (2.80%). Tree cover constitutes the largest area in Maharashtra (9,466 km^2) followed by Gujarat (8,390 km^2), Rajasthan (8,274 km^2) and Uttar Pradesh (7,381 km^2). 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%).

Table 2.6 [illegible] States/UTs in India (Area in km²)

Andhra Pradesh	275069	850	26242	19297	46389	45102	1568	46670	-281
Arunachal Pradesh	83743	20868	31519	15023	67410	67353	131	67484	-74
Assam	78438	1444	11404	14825	27673	27692	0	27692	-19
Bihar	94163	231	3280	3334	6845	6804	0	6804	41
Chhattisgarh	135191	4163	34911	16600	55674	55870	-192	55678	-4
Delhi	1483	7	49	120	176	177	0	177	0
Goa	3702	543	585	1091	2219	2151	61	2212	7
Gujarat	196022	376	5231	9012	14619	14620	0	14620	-1
Haryana	44212	27	457	1124	1608	1594	0	1594	14
Himachal Pradesh	55673	3224	6381	5074	14679	14668	0	14668	11
Jammu & Kashmir	222236	4140	8760	9639	22539	22686	-149	22537	2
Jharkhand	79714	2590	9917	10470	22977	22894	0	2894	83
Karnataka	191791	1777	20179	14238	36194	36190	0	36190	4
Kerala	38863	1442	9394	6464	17300	17324	0	17324	-24
Madhya Pradesh	308245	6640	34986	36074	77700	77700	0	77700	0
Maharashtra	307713	8736	20815	21095	50646	50650	0	50650	-4
Manipur	22327	730	6151	10209	17090	17280	0	17280	-190
Meghalaya	22429	433	9775	7067	17275	17321	0	17321	-46
Mizoram	21081	134	6086	12897	19117	19240	-57	19183	-66
Nagaland	16579	1293	4931	7094	13318	13464	0	13464	-146
Orissa	155707	7060	21366	20477	48903	48855	0	48855	48
Punjab	50362	0	736	1028	1764	1664	0	1664	100
Rajasthan	342239	72	4448	11567	16087	16036	0	16036	51
Sikkim	7096	500	2161	698	3359	3357	2	3359	0
Tamil Nadu	130058	2948	10321	10356	23625	23338	213	23551	74
Tripura	10486	109	4686	3182	7977	8073	-88	7985	-8
Uttar Pradesh	240928	1626	4559	8153	14338	14341	0	14341	-3
Uttarakhand	53483	4762	14167	5567	24496	24495	0	24495	1
West Bengal	88752	2984	4646	5365	12995	12994	0	12994	1
A & N Islands	8249	3761	2416	547	6724	6662	0	6662	62
Chandigarh	114	1	10	6	17	17	0	17	0
Dadra & Nagar Haveli	491	0	114	97	211	211	0	211	0
Daman & Diu	112	0	0.62	5.53	6	6	0	6	0
Lakshadweep	32	0	17.18	9.88	27	26	0	26	1
Puducherry	480	0	35.37	14.69	50	44	6	50	0
	3287263	**83471**	**320736**	**287820**	**692027**	**690899**	**1495**	**692394**	**-367**

* *Change in the above Table refers to change in the area with respect to 2009 assessment after incorporating interpretational changes.*

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.

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

Sl. No.	State/U.T.	Geographical Area (km²)	Tree Cover	
			Area (km²)	% of Geo. Area
26	Tripura	10,486	184	1.75
27	Uttar Pradesh	240,928	7,382	3.06
28	Uttarakhand	53,483	642	1.20
29	West Bengal	88,752	2,335	2.63
30	Andaman & Nicobar Islands	8,249	39	0.47
31	Chandigarh	114	10	8.93
32	Dadra & Nagar Haveli	491	29	5.91
33	Daman & Diu	112	9	7.65
34	Lakshadweep	32	5	14.23
35	Puducherry	480	31	6.44
	TOTAL	**3,287,263**	**90,844**	**2.76**

The state having maximum tree cover area is Maharashtra (9,079 km²) followed by Rajasthan (8,272 km²) and Gujarat (7,837 km²). Considering the tree cover percentage to geographical area of state/UT, the Union Territory of Lakshadweep shows highest percentage of tree cover (14.23 %) followed by Chandigarh (8.93 %) and Delhi (8.09 %).

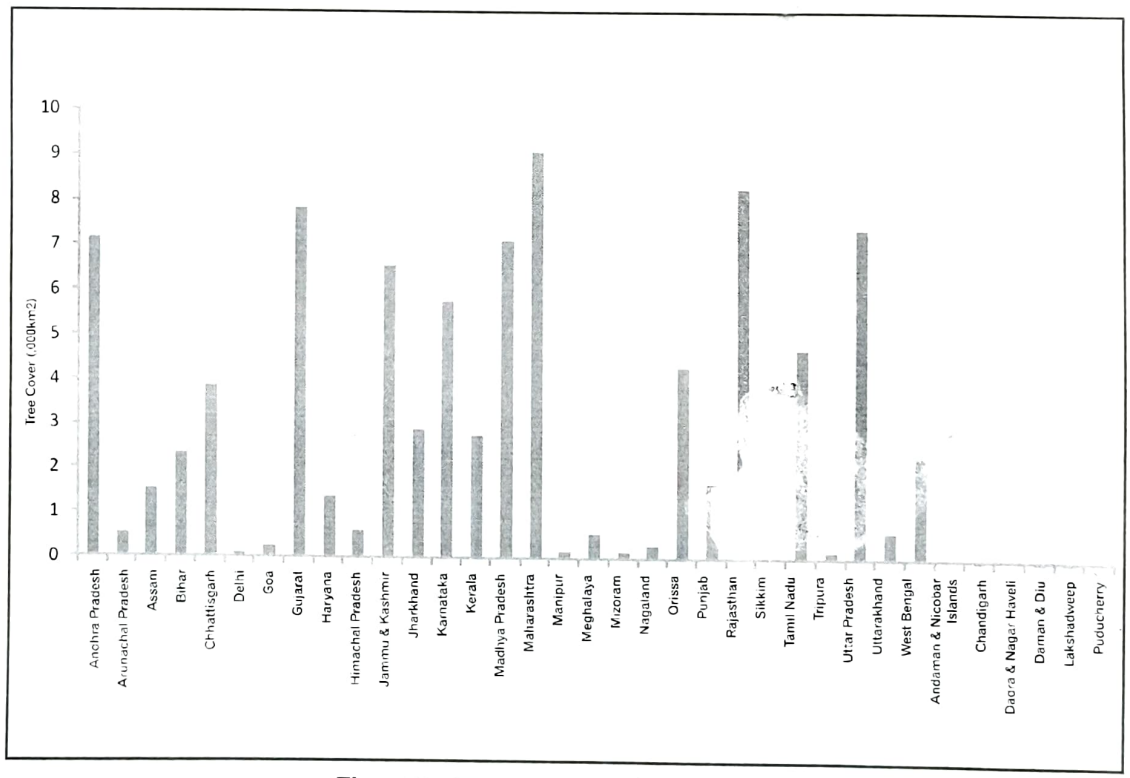


Fig 4.6.1: Tree cover in States and UTs

Table 2.2: Forest Cover in States/UTs in India (Area in km²)

States/UTs	Geographical Area	Very Dense Forest	Moderate Dense Forest	Open Forest	Total Forest Forest	Percent of Geographical Area	Change in Forest Cover wrt ISFR 2011	Change Percent	Scrub
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	275,069	850	26,079	19,187	46,116	16.77	-273	-0.10	10,465
Arunachal Pradesh	83,743	20,828	31,414	15,079	67,321	80.39	-89	-0.11	121
Assam	78,438	1,444	11,345	14,882	27,671	35.28	-2	0.00	182
Bihar	94,163	247	3,380	3,664	7,291	7.74	446	0.47	115
Chhattisgarh	135,191	4,153	34,865	16,603	55,621	41.14	-53	-0.04	117
Delhi	1,483	6.76	49.38	123.67	179.81	12.12	3.61	0.24	2.24
Goa	3,702	543	585	1091	2219	59.94	0	0.00	0
Gujarat	196,022	376	5,220	9,057	14,653	7.48	34	0.02	1,492
Haryana	44,212	27	453	1,106	1,586	3.59	-22	-0.05	150
Himachal Pradesh	55,673	3,224	6,381	5,078	14,683	26.37	4	0.01	298
Jammu & Kashmir*	222,236	4,140	8,760	9,638	22,538	10.14	-1	0.00	2,105
Jharkhand	79,714	2,587	9,667	11,219	23,473	29.45	496	0.62	670
Karnataka	191,791	1,777	20,179	14,176	36,132	18.84	-62	-0.03	3,216
Kerala	38,863	1,529	9,401	6,992	17,922	46.12	622	1.60	29
Madhya Pradesh	308,245	6,632	34,921	35,969	77,522	25.15	-178#	-0.06	6,389
Maharashtra	307,713	8,720	20,770	21,142	50,632	16.45	-14	0.00	4,157
Manipur	22,327	728	6,094	10,168	16,990	76.10	-100	-0.45	1
Meghalaya	22,429	449	9,689	7,150	17,288	77.08	13	0.06	372
Mizoram	21,081	138	5,900	13,016	19,054	90.38	-63	-0.30	0
Nagaland	16,579	1,298	4,736	7,010	13,044	78.68	-274	-1.65	2
Odisha	155,707	7,042	21,298	22,007	50,347	32.33	1444	0.93	4,424
Punjab	50,362	0	736	1,036	1,772	3.52	8	0.02	37
Rajasthan	342,239	72	4,424	11,590	16,086	4.70	-1	0.00	4,211
Sikkim	7,096	500	2,161	697	3,358	47.32	-1	-0.01	311
Tamil Nadu	130,058	2,948	10,199	10,697	23,844	18.33	219	0.17	1,212
Tripura	10,486	109	4,641	3,116	7,866	75.01	-111	-1.06	66
Uttar Pradesh	240,928	1,623	4,550	8,176	14,349	5.96	11	0.00	806
Uttarakhand	53,483	4,785	14,111	5,612	24,508	45.82	12	0.02	262
West Bengal	88,752	2,971	4,146	9,688	16,805	18.93	3810#	4.29	111
A&N Islands	8,249	3,754	2,413	544	6,711	81.36	-13	-0.16	57
Chandigarh	114	1.36	9.66	6.24	17.26	15.14	0.26	0.23	0.56
Dadra & Nagar Haveli	491	0	114	99	213	43.38	2	0.41	1
Daman & Diu	12	0	1.87	7.4	9.27	8.28	3.27	2.92	0.96
Lakshadweep	32	0	17.18	9.88	27.06	84.56	0.06	0.19	0
Puducherry	480	0	35.23	14.83	50.06	10.43	0.06	0.01	0
Grand Total	**3,287,263**	**83,502**	**318,745**	**295,651**	**697,898**	**21.23**	**5871**	**0.18**	**41,383**

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

The negative change in forest cover of Madhya Pradesh as compared to previous assessment is mainly attributed due to inclusion of some non forest area as forest cover. Similarly in West Bengal the change in forest cover in present assessment is due to exclusion of some areas as forest cover in the previous assessment due to poor quality satellite data.

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 2.2: Forest Cover in States/UTs in India

States/UTs	Geographical Area	2015 Assessment VDF	MDF	OF	Total Forest	Percent of geographical area	Change in forest cover wrt ISFR 2013
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

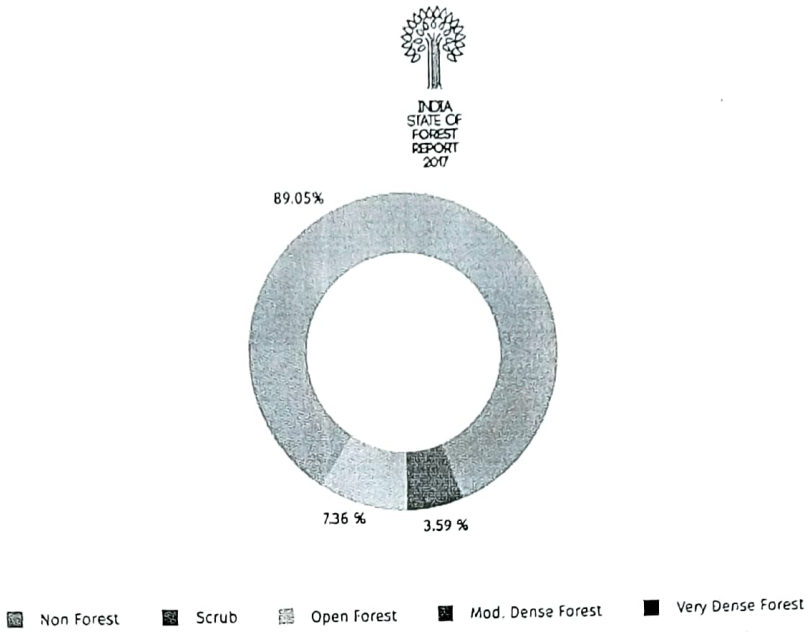
*Includes Jammu and Kashmir areas outside LoC that is under illegal occupation of Pakistan and China.

Table 4.2: States/UTs wise tree cover estimates

(Area in km²)

Sl. No	States/UTs	Geographical Area	Tree Cover Area	Tree Cover 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).



Forest cover of Puducherry

Pie Chart showing forest cover of Puducherry

9.36.3

Forest Cover within and outside Green Wash Area

The recorded forest area of the UT is 13 sq km which is 2.65% of its geographical area. The Protected and Unclassed Forests are 15.38% and 84.62% respectively of the recorded forest area. Due to non-availability of digitized boundary of recorded forest area from the UT, the updated green wash area which is 3.05 sq km has been used and the analysis of forest cover within this area is depicted below.

Table 9.36.2 Forest Cover within and outside Green Wash Area

Forest Cover within Green Wash (Area in sq km)	
Very Dense Forest (VDF)	0
Moderately Dense Forest (MDF)	0
Open Forest (OF)	1.02
Total	**1.02**
Forest Cover outside Green Wash	
Very Dense Forest	0
Moderately Dense Forest	17.60
Open Forest	35.05
Total	**52.65**
Total Forest Cover	53.67
Tree Cover	27
Total Forest & Tree Cover	**80.67**
Of UT's Geographical Area	16.46%
Of India's Forest & Tree Cover	0.01%
Per capita Forest & Tree Cover	0.006 ha

TABLE 2.4 Forest Cover in the States/UTs in India

(area in sq km)

S. No.	State/UT	Geo. Area (GA)	2019 Assessment				% of GA	Change in forest cover w.r.t ISFR 2017	Change % w.r.t ISFR 2017	Scrub
			VDF	MDF	OF	Total Forest Cover				
1.	Andhra Pradesh	1,62,968	1,994	13,938	13,205	29,137	17.88	990	3.52	8,255
2.	Arunachal Pradesh	83,743	21,095	30,557	15,036	66,688	79.63	-276	-0.41	229
3.	Assam	78,438	2,795	10,279	15,253	28,327	36.11	222	0.79	173
4.	Bihar	94,163	333	3,280	3,693	7,306	7.76	7	0.10	250
5.	Chhattisgarh	1,35,192	7,068	32,198	16,345	55,611	41.13	64	0.12	610
6.	Delhi	1,483	6.72	56.42	132.30	195.44	13.18	3.03	1.57	0.30
7.	Goa	3,702	538	576	1,123	2,237	60.43	8	0.36	0
8.	Gujarat	1,96,244	378	5,092	9,387	14,857	7.57	100	0.68	2,994
9.	Haryana	44,212	28	451	1,123	1,602	3.62	14	0.88	154
10.	Himachal Pradesh	55,673	3,113	7,126	5,195	15,434	27.72	334	2.21	315
11.	UT of J&K	53,258*	4,203	7,952	8,967	21,122	39.66	348	1.68	250
	Jammu & Kashmir# UT of Ladakh	1,69,421*	78	660	1,752	2,490	1.47	23	0.93	298
	Total	2,22,236	4,281	8,612	10,719	23,612	10.62	371	1.60	548
12.	Jharkhand	79,716	2,603	9,687	11,321	23,611	29.62	58	0.25	688
13.	Karnataka	1,91,791	4,501	21,048	13,026	38,575	20.11	1,025	2.73	4,484
14.	Kerala	38,852	1,935	9,508	9,701	21,144	54.42	823	4.05	13
15.	Madhya Pradesh	3,08,252	6,676	34,341	36,465	77,482	25.14	68	0.09	6,002
16.	Maharashtra	3,07,713	8,721	20,572	21,485	50,778	16.50	96	0.19	4,256
17.	Manipur	22,327	905	6,386	9,556	16,847	75.46	-499	-2.88	1,181
18.	Meghalaya	22,429	489	9,267	7,363	17,119	76.33	-27	-0.16	600
19.	Mizoram	21,081	157	5,801	12,048	18,006	85.41	-180	-0.99	1
20.	Nagaland	16,579	1,273	4,534	6,679	12,486	75.31	-3	-0.02	635
21.	Odisha	1,55,707	6,970	21,552	23,097	51,619	33.15	274	0.53	4,327
22.	Punjab	50,362	8	801	1,040	1,849	3.67	12	0.65	33
23.	Rajasthan	3,42,239	78	4,342	12,210	16,630	4.86	58	0.35	4,760
24.	Sikkim	7,096	1,102	1,552	688	3,342	47.10	-2	-0.06	307
25.	Tamil Nadu	1,30,060	3,605	11,030	11,729	26,364	20.27	83	0.32	715
26.	Telangana	1,12,077	1,608	8,787	10,187	20,582	18.36	163	0.80	3,615
27.	Tripura	10,486	654	5,236	1,836	7,726	73.68	0	0.00	29
28.	Uttar Pradesh	2,40,928	2,617	4,080	8,109	14,806	6.15	127	0.87	587
29.	Uttarakhand	53,483	5,047	12,805	6,451	24,303	45.44	8	0.03	383
30.	West Bengal	88,752	3,019	4,160	9,723	16,902	19.04	55	0.33	146
31.	A & N Islands	8,249	5,678	684	381	6,743	81.74	1	0.01	1
32.	Chandigarh	114	1.36	14.24	6.43	22.03	19.32	0.47	2.18	0.10
33.	Dadra & Nagar Haveli	491	0	80	127	207	42.16	0	0.00	5
34.	Daman & Diu	111	1.40	5.69	13.40	20.49	18.46	0	0.00	0.19
35.	Lakshadweep	30	0	16.09	11.01	27.10	90.33	0	0.00	0.00
36.	Puducherry	490	0	17.66	34.75	52.41	10.70	-1.26	-2.35	0.00
Total		**32,87,469**	**99,278**	**3,08,472**	**3,04,499**	**7,12,249**	**21.67**	**3,976**	**0.56**	**46,297**

* Area of shape file provided by Survey of India (December, 2019). Notified geographical area from SOI awaited.

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

TABLE 6.1 State/ UT wise Tree Cover estimates

(in sq km)

S. No	State/UTs	Geographical Area (GA)	Tree Cover	Percent of GA
1.	Andhra Pradesh	162,968	3,914	2.40
2.	Arunachal Pradesh	83,743	848	1.01
3.	Assam	78,438	1,408	1.80
4.	Bihar	94,163	2,003	2.13
5.	Chhattisgarh	135,192	4,248	3.14
6.	Delhi	1,483	129	8.73
7.	Goa	3,702	272	7.34
8.	Gujarat	196,244	6,912	3.52
9.	Haryana	44,212	1,565	3.54
10.	Himachal Pradesh	55,673	829	1.49
11.	Jammu & Kashmir*	222,236	7,944	3.57
12.	Jharkhand	79,716	2,657	3.33
13.	Karnataka	191,791	6,257	3.26
14.	Kerala	38,852	2,936	7.56
15.	Madhya Pradesh	308,252	8,339	2.71
16.	Maharashtra	307,713	10,806	3.51
17.	Manipur	22,327	173	0.77
18.	Meghalaya	22,429	710	3.17
19.	Mizoram	21,081	441	2.09
20.	Nagaland	16,579	362	2.19
21.	Odisha	155,707	4,648	2.98
22.	Punjab	50,362	1,592	3.16
23.	Rajasthan	342,239	8,112	2.37
24.	Sikkim	7,096	36	0.51
25.	Tamil Nadu	130,060	4,830	3.71
26.	Telangana	112,077	2,514	2.24
27.	Tripura	10,486	231	2.20
28.	Uttar Pradesh	240,928	7,342	3.05
29.	Uttarakhand	53,483	841	1.57
30.	West Bengal	88,752	2,006	2.26
31.	A & N Islands	8,249	41	0.50
32.	Chandigarh	114	25	22.34
33.	Dadra & Nagar Haveli	491	28	5.75
34.	Daman & Diu	111	5	4.87
35.	Lakshadweep	30	0.29	0.97
36.	Puducherry	490	23	4.66
Total		**3,287,469**	**95,027**	**2.89**

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

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2.9 State/UT wise Forest Cover

Forest Cover in the States & UTs of the country as per the 2021 assessment and change therein with respect to the previous assessment (2019) has been presented in the Table 2.4

Table 2.4 Forest Cover in the States/UTs in India

State/UT	Geo-graphical Area (GA)	2021 Assessment			
		VDF	MDF	OF	
Andhra Pradesh	1,62,968	1,994	13,929	13,861	
Arunachal Pradesh	83,743	21,058	30,176	15,197	
Assam	78,438	3,017	9,991	15,304	
Bihar	94,163	333	3,286	3,762	
Chhattisgarh	1,35,192	7,068	32,279	16,370	
Delhi	1,483	6.72	56.60	131.68	
Goa	3,702	538	576	1,130	
Gujarat	1,96,244	378	5,032	9,516	
Haryana	44,212	28	445	1,130	
Himachal Pradesh	55,673	3,163	7,100	5,180	
Jharkhand	79,716	2,601	9,689	11,431	
Karnataka	1,91,791	4,533	20,985	13,212	
Kerala	38,852	1,944	9,472	9,837	
Madhya Pradesh	3,08,252	6,665	34,209	36,619	
Maharashtra	3,07,713	8,734	20,589	21,475	
Manipur	22,327	905	6,228	9,465	
Meghalaya	22,429	560	9,160	7,326	
Mizoram	21,081	157	5,715	11,948	
Nagaland	16,579	1,272	4,449	6,530	
Odisha	1,55,707	7,213	20,995	23,948	
Punjab	50,362	11	793	1,043	
Rajasthan	3,42,239	78	4,369	12,208	
Sikkim	7,096	1,102	1,551	688	
Tamil Nadu	1,30,060	3,593	11,034	11,792	
Telangana	1,12,077	1,624	9,119	10,471	
Tripura	10,486	647	5,212	1,863	
Uttar Pradesh	2,40,928	2,627	4,029	8,162	
Uttarakhand	53,483	5,055	12,768	6,482	
West Bengal	88,752	3,037	4,208	9,587	
A & N Islands	8,249	5,678	683	383	
Chandigarh	114	1.36	13.51	8.01	
Dadra & Nagar Haveli and Daman & Diu	602	1.40	85.56	140.79	
Jammu & Kashmir Shapefile Area* (54,624)	2,22,236	4,155	8,117	9,115	
Ladakh Shapefile Area* (1,68,055)		2	512	1,758	
Lakshadweep	30	0.00	16.09	11.01	
Puducherry	490	0.00	17.53	35.77	53.30
Total	**32,87,469**	**99,779**	**3,06,890**	**3,07,120**	

** Area of shapefile provided by Survey of India (August, 2021). Notified geographical areas for individual UTs from SoI are awaited*

(in sq km)

Total Forest Cover	Percentage of Geographical area	Change in Forest Cover w.r.t ISFR 2019	Change Percentage w.r.t. 2019 assessment	Scrub
29,784	18.28	647	2.22	8,276
66,431	79.33	-257	-0.39	797
28,312	36.09	-15	-0.05	228
7,381	7.84	75	1.03	236
55,717	41.21	106	0.19	615
195.00	13.15	-0.44	-0.23	0.38
2,244	60.62	7	0.31	0
14,926	7.61	69	0.46	2,828
1,603	3.63	1	0.06	159
15,443	27.73	9	0.06	322
23,721	29.76	110	0.47	584
38,730	20.19	155	0.40	4,611
21,253	54.70	109	0.52	30
77,493	25.14	11	0.01	5,457
50,798	16.51	20	0.04	4,247
16,598	74.34	-249	-1.48	1,215
17,046	76.00	-73	-0.43	663
17,820	84.53	-186	-1.03	1
12,251	73.90	-235	-1.88	824
52,156	33.50	537	1.04	4,924
1,847	3.67	-2	-0.11	34
16,655	4.87	25	0.15	4,809
3,341	47.08	-1	-0.03	296
26,419	20.31	55	0.21	758
21,214	18.93	632	3.07	2,911
7,722	73.64	-4	-0.05	33
14,818	6.15	12	0.08	563
24,305	45.44	2	0.01	392
16,832	18.96	-70	-0.41	156
6,744	81.75	1	0.01	1
22.88	20.07	0.85	3.86	0.38
227.75	37.83	0.10	0.04	4.85
21,387	39.15	29	0.14	284
2,272	1.35	18	0.80	279
27.10	90.33	0.00	0.00	0.00
53.30	10.88	0.89	1.70	0.00
7,13,789	**21.71**	**1,540**	**0.22**	**46,539**

6.4 State-wise estimates of Tree Cover

The total tree cover of the country has been estimated 95,748 sq km. There is an increase of 721 sq km in the extent of tree cover as compared to the previous assessment of 2019. The standard error of the tree cover estimate at the national level has been assessed at 4.01%. The State wise estimates of tree cover is given in Table 6.1. The standard error at the State level varies from 2.23% to 16.49%. As per Table 6.1, the State having maximum tree cover is Maharashtra (12,108 sq km) followed by Rajasthan (8,733 sq km), Madhya Pradesh (8,054 sq km), Karnataka (7,494 sq km) and Uttar Pradesh (7,421 sq km). Considering the percentage of geographical area of State/UTs, the UT of Chandigarh shows highest percentage of tree cover (13.16%) followed by Delhi (9.91%), Kerala (7.26%), and Goa (6.59%).

Table 6.1 State/ UT wise Tree Cover Estimates

(in sq km)

S. No.	Name of the State/UT	Geographical area	Tree cover	Percentage of geographical area
1.	Andhra Pradesh	162,968	4,679	2.87
2.	Arunachal Pradesh	83,743	1,001	1.20
3.	Assam	78,438	1,630	2.08
4.	Bihar	94,163	2,341	2.49
5.	Chhattisgarh	135,192	5,355	3.96
6.	Delhi	1,483	147	9.91
7.	Goa	3,702	244	6.59
8.	Gujarat	196,244	5,489	2.80
9.	Haryana	44,212	1,425	3.22
10.	Himachal Pradesh	55,673	675	1.21
11.	Jharkhand	79,716	2,867	3.60
12.	Karnataka	191,791	7,494	3.91
13.	Kerala	38,852	2,820	7.26
14.	Madhya Pradesh	308,252	8,054	2.61
15.	Maharashtra	307,713	12,108	3.93
16.	Manipur	22,327	169	0.76
17.	Meghalaya	22,429	698	3.11
18.	Mizoram	21,081	444	2.11
19.	Nagaland	16,579	365	2.20
20.	Odisha	155,707	5,004	3.21
21.	Punjab	50,362	1,138	2.26
22.	Rajasthan	342,239	8,733	2.55
23.	Sikkim	7,096	39	0.55
24.	Tamil Nadu	130,060	4,424	3.40
25.	Telangana	112,077	2,848	2.54
26.	Tripura	10,486	228	2.17
27.	Uttar Pradesh	240,928	7,421	3.08
28.	Uttarakhand	53,483	1,001	1.87
29.	West Bengal	88,752	2,349	2.65
30.	Andaman & Nicobar Islands	8,249	23	0.28
31.	Chandigarh	114	15	13.16

(in sq km)

S. No.	Name of the State/UT	Geographical area	Tree cover	Percentage of geographical area
32.	Dadra & Nagar Haveli and Daman & Diu	602	32	5.48
33.	Jammu & Kashmir (Shape file area = 54,624) * #	222,236	3,511	6.43
34.	Ladakh (Shape file area = 1,68,055) #		954	0.57
35.	Lakshadweep	30	0.05	0.17
36.	Puducherry	490	23	4.69
	Total	**3,287,469**	**95,748**	**2.91**

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

\# *Area of shapefile provided by Survey of India (August 2021). Notified geographical areas for individual UTs from SOI awaited.*

Trees Outside Forests 6.5

TOF refers to all trees growing outside recorded forest areas, irrespective of the patch size. The remote sensing based forest cover mapping includes all patches of more than one hectare within and outside the RFA. Sampling approach based tree cover estimates include tree patches between 0.1 to 1.0 hectare outside the RFA. Tree cover outside the forests is estimated by using the sampling based approach. Therefore, the patches of 1 ha and above outside the RFA and Tree Cover, both constitute the TOF.

During recent years, there has been a growing recognition of the importance of the Trees outside forests being a major source of forest produce in the country and timber, firewood and small wood supply coming from outside the forest areas is significant. They are one of the important renewable resources that contribute to climate change mitigation, as every patch of forest around the world is absorbing carbon. Currently, TOF is the main source of wood produced in the country, particularly from the agroforestry sector. As per an FAO Report[1], about 1.6 billion people or 25% of the global population worldwide depend directly or indirectly on forests for food, shelter, energy, medicines, income and from the perspective of their ecological, socio-economic and cultural significance.

[1] *FAO (2014): The State of the world's forest genetic resources. FAO commission on genetic resources for food & agriculture. Rome.*

//TRUE COPY//

ANNEXURE - R3

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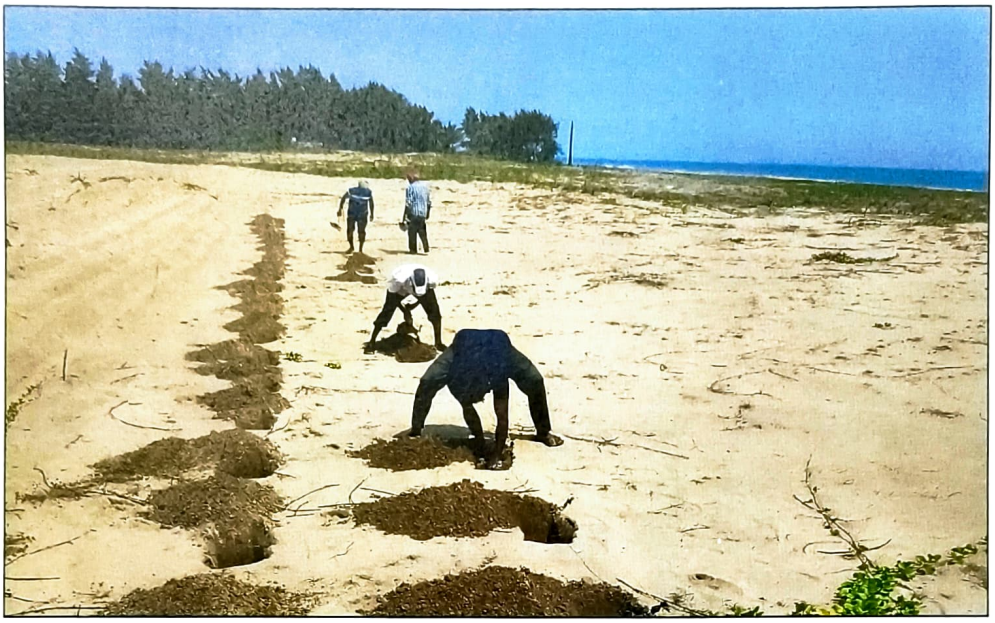
Initiatives to improve the Forest cover and Tree Cover in the UT of Puducherry

Tree plantation & Awareness program

Coastal Tree Plantation



Urban Tree Plantation

//TRUE COPY//

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Outlook

Service : OA/555/2024 - Affidavit on behalf of Respondent No.38/Chief Secretary to Government, Puducherry.

From Shubham Bhalla <shubhambhalla@hotmail.com>

Date Fri 4/25/2025 4:20 PM

To adarshchamoli93@gmail.com <adarshchamoli93@gmail.com>; dcft-dnh@nic.in <dcft-dnh@nic.in>; advrajkumar@gmail.com <advrajkumar@gmail.com>; mscb.cpcb@nic.in <mscb.cpcb@nic.in>; secy-moef@nic.in <secy-moef@nic.in>; mriw.madc.soi@gov.in <mriw.madc.soi@gov.in>; sgo.conf.soi@gov.in <sgo.conf.soi@gov.in>; dgfsi@fsi.nic.in <dgfsi@fsi.nic.in>; jdtfi@fsi.nic.in <jdtfi@fsi.nic.in>; abhidec27@yahoo.com <abhidec27@yahoo.com>; roghaziabad@uppcb.in <roghaziabad@uppcb.in>; ropune@mpcb.gov.in <ropune@mpcb.gov.in>

1 attachment (15 MB)

Affidavit with Annexure.pdf;

Sir,

Please find attached with this email affidavit on behalf of Respondent No.38/Chief Secretary to Government, Puducherry in OA/555/2024 titled as **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. VS**.

Please acknowledge receipt. Thank you.

Regards

SHUBHAM BHALLA
Advocate-on-Record

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