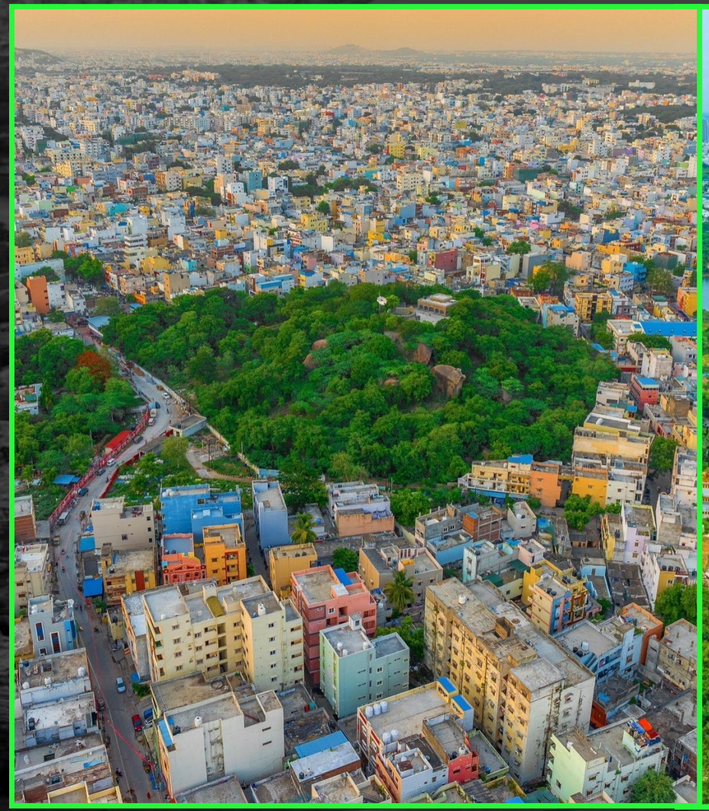
Urban & Rural Forestry In Telangana

(Ref to Issues & Initiatives in Hyderabad City)



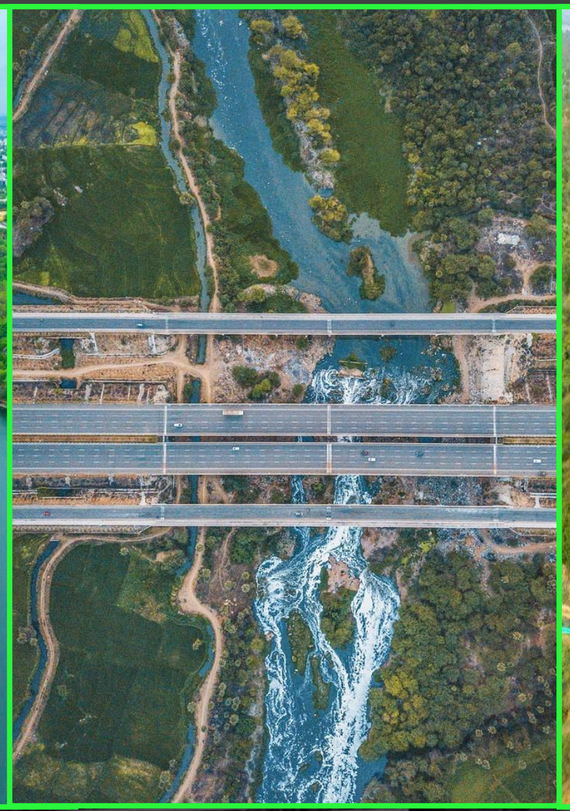



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Table: Forest and Tree Cover of India

in km²

Class	Area	Percentage of GA
Forest Cover	7,15,342.61	21.76
Tree Cover	1,12,014.34	3.41
Total Forest and Tree Cover	**8,27,356.95**	**25.17**
Scrub	43,622.64	1.33
Non Forest	24,16,489.29	73.50
Geographical Area of the country	**32,87,468.88**	**100.00**

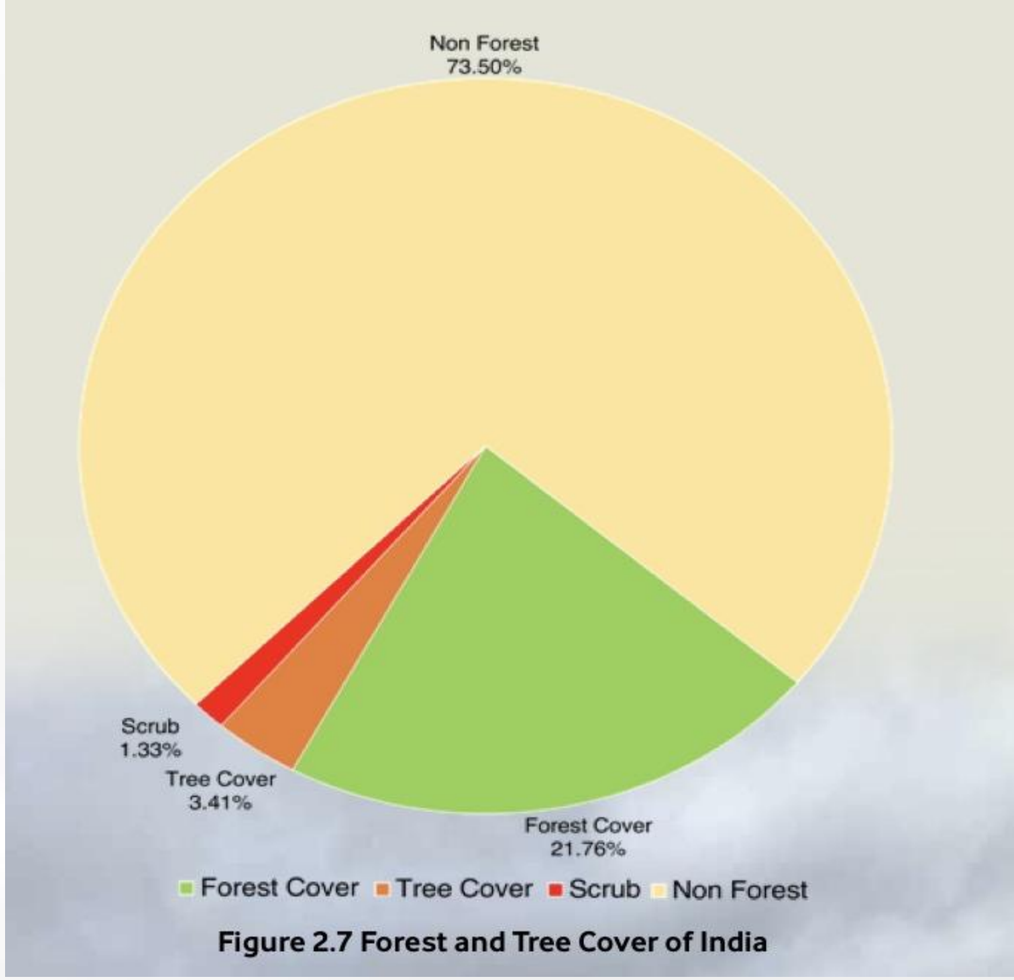

Figure 2.7 Forest and Tree Cover of India

Table 1.2 Land Use Pattern of India

Land Use Type	Area (in '000 ha)	Percentage
Geographical Area	328747	
Reporting area for land utilization	306486	93.23
Forests	72000	21.9
Not available for land cultivation	44093	13.41
Permanent pastures and other grazing lands	10281	3.13
Land under miscellaneous tree crops and groves	3013	0.92
Culturable waste land	11920	3.63
Fallow land other than current fallows	10917	3.32
Current fallows	13255	4.03
Net sown area	141007	42.89

Source: *Land Use Statistics – At a Glance | Official website of Directorate of Economics and Statistics, Department of Agriculture and Farmer's Welfare, Ministry of Agriculture and Farmer's Welfare, Government of India (desagri.gov.in)*

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1.5.1 Forest Cover

The report uses the term 'forest cover' extensively. 'Forest cover' refers to all lands, more than or equal to one hectare in area, with a tree canopy of more than or equal to 10%, irrespective of ownership and legal status; and includes orchards, bamboo, and palm. Thus, 'Forest cover' indicates presence of trees on any land, irrespective of ownership of land; and irrespective of the fact whether the land is notified as a forest land or not. It is not possible for FSI to distinguish a tree clad area on the basis of legal status of land using the remote sensing techniques. Hence, the 'forest cover' data, as captured and analysed using satellite imageries, is reported as such.

1.5.2 Recorded Forest Area

The 'recorded forest area' (RFA) (or forest area) refers to all the geographic area recorded as 'forest' in government records. The 'recorded forest area' largely consists of the 'Reserved Forests' (RF) and the 'Protected Forests' (PF), constituted under the provisions of the Indian Forest Act, 1927. Besides the RFs and PFs, the recorded forest area may also include all such areas which have been recorded as 'Unclassed Forests', 'Village Forests', or by any other nomenclature of such description, and all such areas which have been recorded as forest in the revenue records, or have been constituted so under any State Act or local law. A recorded forest area may, or may not, have tree cover. Besides being richly forested, recorded forest areas may have less than 10% canopy cover, pastures, desert lands, blanks, wetland, rivers, riverbeds, creeks, snow clad areas, etc. FSI obtains the information about the RFA from the respective State/ UT Governments, as they are the custodians of this information.

1.5.3 Tree Cover

For the purpose of this report, 'tree cover' refers to the area covered by trees outside recorded forest areas. These areas range from that covered by a single tree to patches of trees less than 1 ha, as areas more than 1 ha are already covered in the Forest cover. Such small patches may comprise of bock plantations, linear plantations, and scattered trees not delineated as forest cover during interpretation of satellite data.

Table 1.3 Recorded Forest Areas (RFAs) in States and UTs

Sl. No	State/ UTs	Notified Geographical Area (GA) (km²)	RFA (in different categories)			Total RFA (2023)	% of GA
			RF	PF	Unclassed Forests*		
1	Andhra Pradesh	1,62,923	31,959	5,069	230	37,258	22.87
2	Arunachal Pradesh	83,743	12,371	11,857	27,312	51,540	61.55
3	Assam	78,438	17,864	0	8,972	26,836	34.21
4	Bihar	94,163	693	6,183	566	7,442	7.90
5	Chhattisgarh	1,35,192	25,899	24,554	9,363	59,816	44.25
6	Delhi	1,483	85	13	6	104	7.01
7	Goa	3,702	119	755	397	1,271	34.33
8	Gujarat	1,96,244	14,574	2,898	4,398	21,870	11.14
9	Haryana	44,212	249	1,158	152	1,559	3.53
10	Himachal Pradesh	55,673	1,883	28,887	7,178	37,948	68.16
11	Jharkhand	79,716	4,500	18,922	1,696	25,118	31.51
12	Karnataka	1,91,791	28,690	3,931	5,663	38,284	19.96
13	Kerala	38,852	11,522	0	0	11,522	29.66
14	Madhya Pradesh	3,08,252	61,886	31,098	1,705	94,689	30.72
15	Maharashtra	3,07,713	50,865	6,433	4,654	61,952	20.13
16	Manipur	22,327	1,926	3,254	12,238	17,418	78.01
17	Meghalaya	22,429	1,125	12	8,371	9,508	42.39
18	Mizoram	21,081	4,499	1,823	1,157	7,479	35.48
19	Nagaland	16,579	234	9	8,389	8,632	52.07
20	Odisha	1,55,707	36,049	25,133	22	61,204	39.31
21	Punjab	50,362	44	1,137	1,903	3,084	6.12
22	Rajasthan	3,42,239	12,176	18,588	2,105	32,869	9.60
23	Sikkim	7,096	5,452	389	0	5,841	82.31
24	Tamil Nadu	1,30,060	20,523	1,053	1,612	23,188	17.83
25	Telangana	1,12,122	25,800	1,592	296	27,688	24.69
26	Tripura	10,486	3,588	2	2,705	6,295	60.03
27	Uttar Pradesh**	2,40,928	11,571	330	5,534	17,435	7.24
28	Uttarakhand	53,483	26,547	9,885	1,568	38,000	71.05
29	West Bengal	88,752	7,054	3,778	1,053	11,885	13.39
30	A & N Islands	8,249	5,613	1,558	0	7,171	86.93
31	Chandigarh	114	32	0	3	35	30.70
32	Dadra & Nagar Haveli and Daman & Diu	602	206	5	6	217	36.05
33	Jammu & Kashmir (Shapefile Area*** (54,633))	2,22,236	17,648	2,551	0	20,199	9.09
34	Ladakh (Shapefile Area*** (1,68,055))		7	0	0	7	-
35	Lakshadweep	30	0	0	0	0	-
36	Puducherry	490	0	2	11	13	2.65
	Total	**32,87,469**	**4,43,253**	**2,12,859**	**1,19,265**	**7,75,377**	**23.59**

Feature	Forest Cover	Tree Cover	Green Cover
Area Size	Minimum 1 hectare (10,000 sq m).	Patches less than 1 hectare, including scattered trees.	Total of both forest and tree cover.
Canopy Density	More than 10% tree canopy density.	Not defined by a specific density threshold, but estimated via sampling.	N/A (aggregate measure).
Location	Irrespective of ownership or legal status (can be inside or outside a Recorded Forest Area - RFA).	Occurs *outside* Recorded Forest Areas (RFA).	N/A (aggregate measure).
Mapping	Mapped using satellite imagery (remote sensing).	Estimated using sampling techniques and field inventory; not mapped wall-to-wall.	Calculated as the sum of the other two.
Includes	Plantations, orchards, bamboo, and palm groves if criteria are met.	Trees along roadsides, canals, in small woodlots, or settlements.	All wooded areas.

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*			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 and Tree Cover
		VDF	MDF	OF	Total	VDF	MDF	OF	Total		VDF	MDF	OF	Total	VDF	MDF	OF	Total										
	(A)				(B)				(C)	(C-B)				(D)				(E)	(E-D)	(S=B+D)	(T= C+E)	(T-S)	(F)	(X=S+F)	(G)	(Y=T+G)	(G-F)	(Y-X)	Y*100/A
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	12,038.33	163.58	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
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	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
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	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
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	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
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	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	78.86
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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
Uttar Pradesh	2,40,927.56	2,504.56	3,049.96	3,745.08	9,299.60	2,537.81	3,041.49	3,759.46	9,338.76	39.16	150.73	945.57	4,531.47	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
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	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
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	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
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	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
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	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
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	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
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	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
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	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	
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	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
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	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
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**	**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**

Status of Forest Cover,Tree Cover & Green Cover in Telangana

Details of FC/TC/GC	2021	2023	Change	
Total Geographical Area of Telanagana				1,12,122
Forest Cover inside RFA	18561.98	18456.11	- 105.87	
Forest Cover outside RFA	2717.48	2722.93	5.45	
Total Forest Cover	21279.46	21179.04	- 100.42	
Tree Cover	3478.88	3517.66	38.78	
Total Forest Cover + Tree cover	24758.54	24696.70	- 61.64	24696.70
Percentage of Total Forest Cover + Tree cover				22.03%

Note: All areas in Sq.Kms
Data as per ISFR report 2023

Forest and Tree Cover

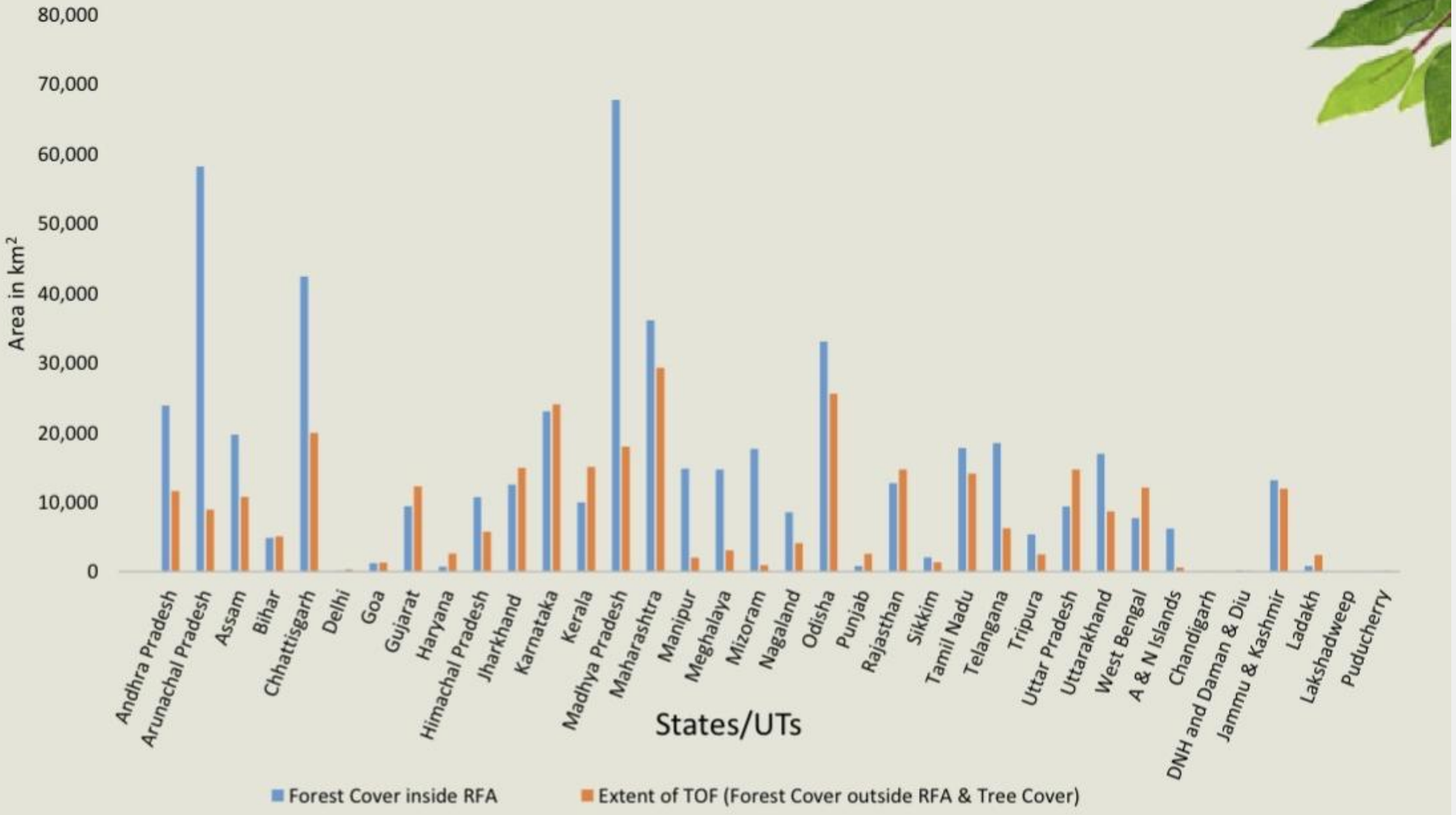


Figure 2.9 State/UT wise Forest Cover (inside RFA) & Extent of TOF

Telangana Forests Status

- Total Geographical Area of the State : 112.10 lakh Ha
- Total Forest Area of the State : 26.90 lakh Ha
- Percentage Forest Cover : 24%
- There is a gap of 9% to achieve the target set by National Forest Policy i.e.33%
- Forestry in Telangana has evolved from a traditional focus on **reserved forests** to a broader concept of **landscape-level greening**, integrating **urban forestry, rural forestry, and trees outside forests (TOF)**. With rapid urbanization, climate stress, and land degradation, the state has adopted a proactive approach through large-scale afforestation programs.

Importance of Trees Outside Forests (TOF)

- Trees outside forests represent the **future of greening in Telangana**. With limited scope for expanding traditional forests, TOF provides a scalable solution.

- These include trees on:
- Agricultural lands ,Roadsides, Institutional campuses ,Urban areas

- TOF contributes to:
- Climate change mitigation
- Livelihood enhancement (agroforestry)
- Reduction in urban heat
- Ecological connectivity

Assessment & Planning includes

- Tasks:
- 1. To protect existing greens & to increase the tree cover
- 2. Protection, Conservation & Restoration of Water bodies

Plan for nature based solutions to make cities more sustainable and resilient

Plantations & improving greenery in GHMC

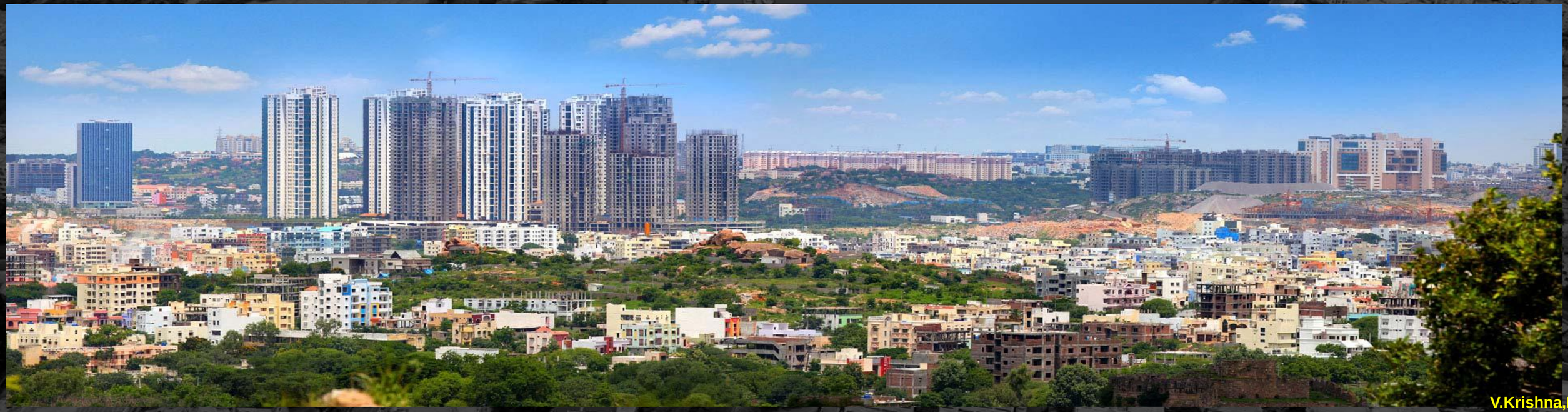
- Massive afforestation is best practice in Urban/ Rural greenery
- Transform and convert urban/rural Govt. lands as tree grooves, parks
- Convert urban/rural waste lands as green lung spaces
- Dedicated tree line along all the roads- Streetscaping
- Development of Parks & Involvement of CWAs in maintenance
- Developing Tiny Forests on Miyawaki method

The action Plan also includes…

- Identification of the surplus lands available with institutions, PSUs etc for plantations
- Green Roofs- Roof top gardens in Hyderabad city
- Fly over greenery and Vertical Gardens
- Rejuvenation of Rivers & Streams.
- Restoration of water bodies
- Natural drain clearance to mitigate urban flooding. Plantations along all the feeder channels and nalahs
- Rain Water Harvesting
- Improving Urban Transport (Public transport).
- Solid waste Disposal
- Sanitation Management

Demography

- Hyderabad City (GHMC) area is 250 Sq miles.
- In 1950, the population of Hyderabad was 1.00 million.
- The population has grown from 3.6 million(2001) to 7.7 million (2011)
- Hyderabad's 2022 population is now estimated at 11.00 millions.
- 4th Most Populous City of India
- Average Decadal population growth rate is- 40%
- Hyderabad Metropolitan Region (HMDA) area – 2802 Sq miles



Magnitude of Biodiversity of Hyderabad

- First city in India to have a City Biodiversity Index in 2012
- In spite of rapid urbanization of the city, the biodiversity is well preserved
- Contrary to the general belief about urbanized cities, Hyderabad has the distribution of **Wild** & **insectivorous plants**
- Three National parks located within and adjoining limits of the city
- Plant surveys initiated in 2007 recorded c.1500 species

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Biodiversity of Greater Hyderabad

- **FLORA:** estimated as 1370 species belonging to 161 families in which 980 species of 114 families are identified as Dicots and the rest of 390 of 47 families as Monocots.
- **FAUNA:** constitutes 705 species from 141 families.
- **AQUATIC FAUNA:** The major species of this class constitute Fishes (62) and Amphibians (19) etc
- **BIRDS** are the dominant category with a total of 332 species followed by butterflies with 127 species
- The findings for flora of Hyderabad under various categories (similar to that of people's biodiversity register method) are followed

Sl. No	Category Of Species (Taxa)	Number of Families	Number of Species
FLORA			
1	Vascular Plants (Dicots)	114	980
2	Vascular Plants (Monocots)	47	390
	TOTAL	161	1370
FAUNA			
1	Odonates / Dragon Flies	6	37
2	Butter Flies	5	127
3	Spiders	11	43
4	Fishes	14	62
5	Amphibians	4	19
6	Reptiles	16	45
7	Birds	67	332
8	Mammals	25	60
	TOTAL	148	705

Green Spaces

- **As per Urban Development Plans Formulation and Implementation(URDPFI) guidelines – Green space requirement per person in India is 10 to 12 Sq.mts.**
- Minimum area of each parcel- 670 Sq mts & within 800 mts walkable distance

- Major metros have *much lower per-capita green space* than URDPFI standards — for example, Mumbai ~1.24 sq m, Ahmedabad ~0.37 sq m — while Bengaluru has one of the higher values among big cities (~17 sq m), and Delhi ~21.5 sq m per person.

- A recent UN-Habitat statistical annex 2024 provides a *global comparison estimate*:
It lists **"green area per capita"** for Hyderabad around **~7.5–9.5 sq m** (varies by assessment method/year).

Repositories of City Biodiversity

- The city of Greater Hyderabad has 185 lakes- Wetland related biodiversity in the city. **2858 lakes in HMDA area**.
- Musi Riverine System-254 kms length-24 Kilometers through core city and provides grasslands eco-system.
- 1.60 lakh acres of Reserve Forest land inside and within the radius of 25 kms from city
- About 3000 Urban public places and man-made Parks
- Land banks and Institutional areas under green cover

Details of ULBs in Telangana

Sl. No.	Corporation / ULBs	Area in Sq. Kms	Population as per 2011 Census
1.	GHMC	625.00	6739158
2.	Other (13) Corporations	869.59	2465016
3.	Other (128) ULBs	3344.35	5336544
	TOTAL FOR 142 (ULBs)	**4838.94**	**14540718**
	For Telangana State	**112077**	**35193978**
	% Area & Population in ULBs w.r.t State	**4.31%**	**41.31%**
	% GHMC wrt State	**0.56%**	**19.14%**

- **MCH with 173 Sq Kms area transformed as GHMC with 626 Sq Kms area in 2007**
- **HUDA with 1348 Sq Kms area transformed as HMDA with 7100 Sq Kms area in 2008**

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Urban Land Scape

Three categories Broadly:

- Green Infrastructure

  (Plantations, Orchards, Parks, Forest etc)

- Blue Infrastructure

  (Lakes, Rivers, Reservoirs etc)

- Grey infrastructure

  (Buildings, Roads, Bridges, Dams etc)

- Urbanization process converts natural landscape into an anthropogenic urban landscape

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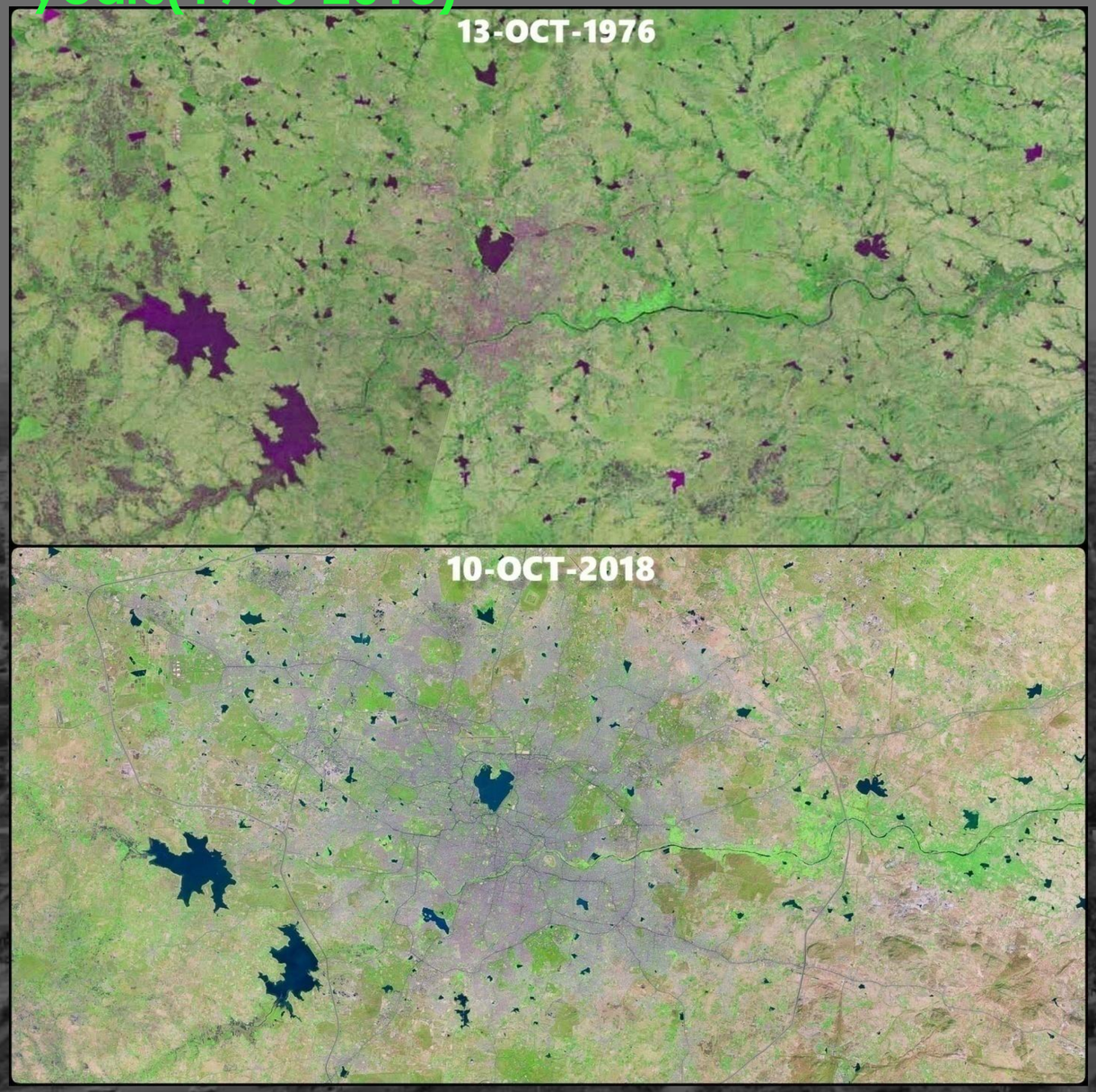
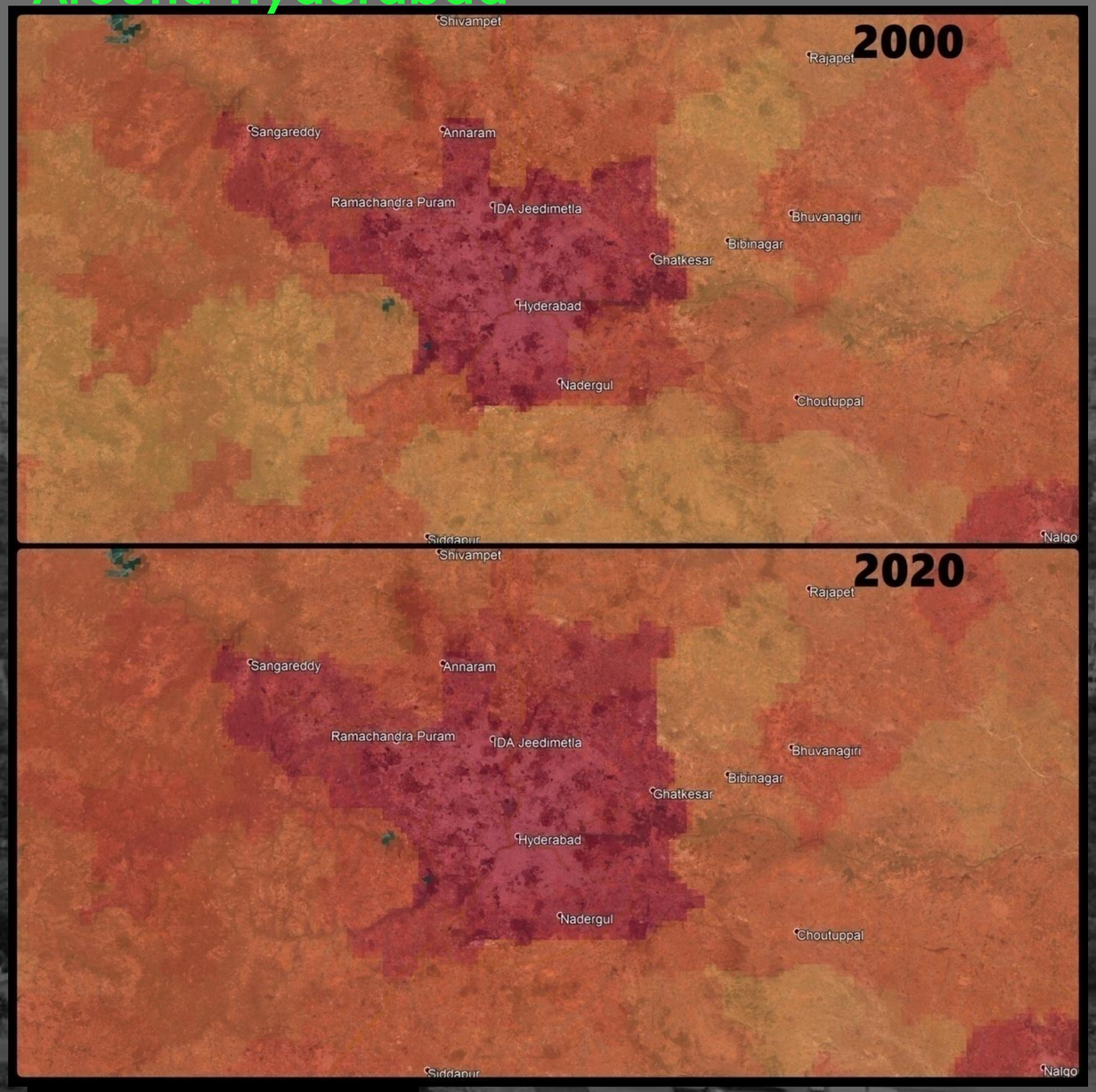
Hyderabad transformation in last 42 years(1976-2018)



Data: Mod Landsat 1-7

Population Expansion Between 2000-2020 Around Hyderabad



< 1 person to > 1000 persons Per Sq Km

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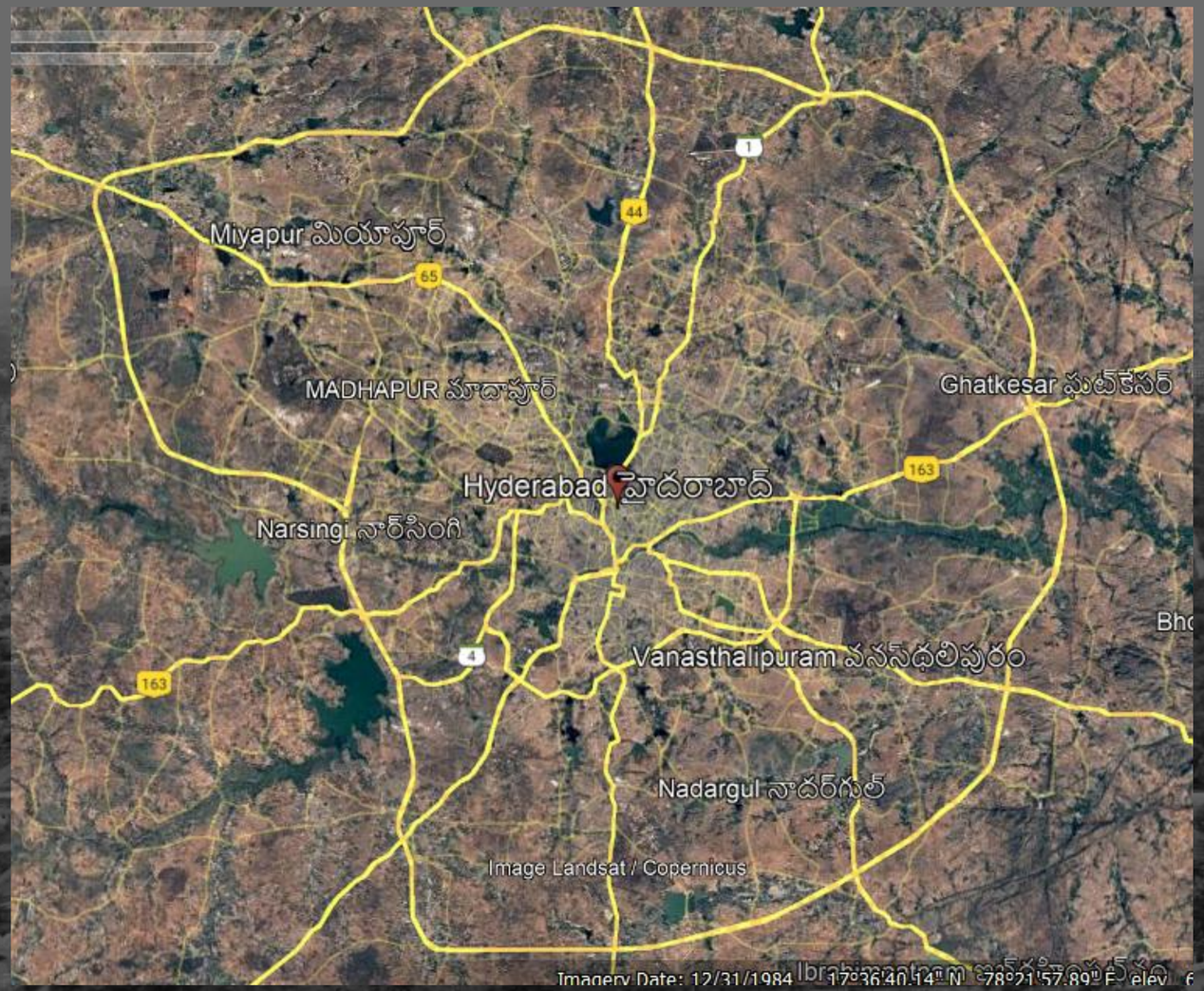
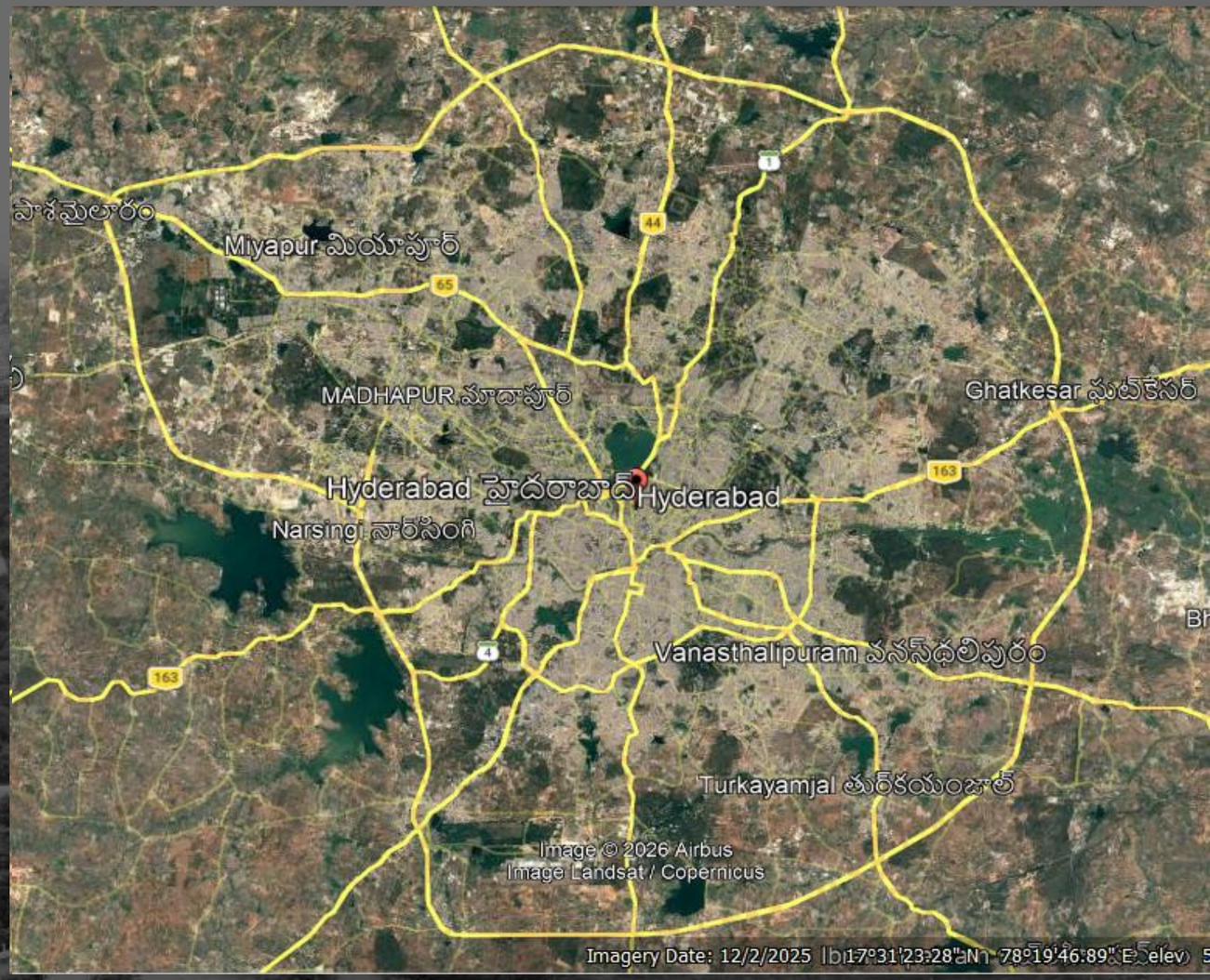
HYDERABAD TIME LAPSE BETWEEN 1984 - 2025





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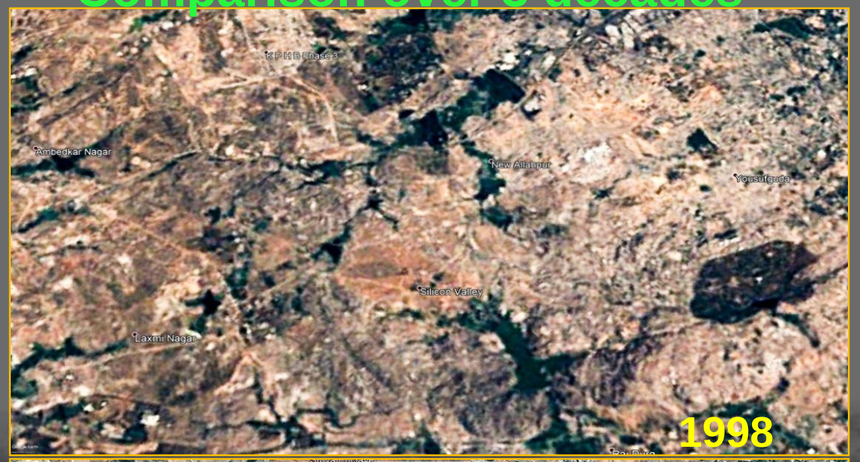
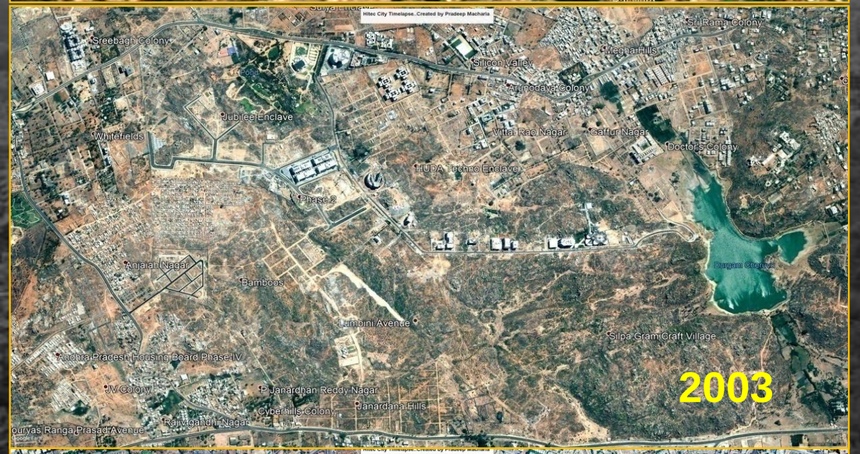
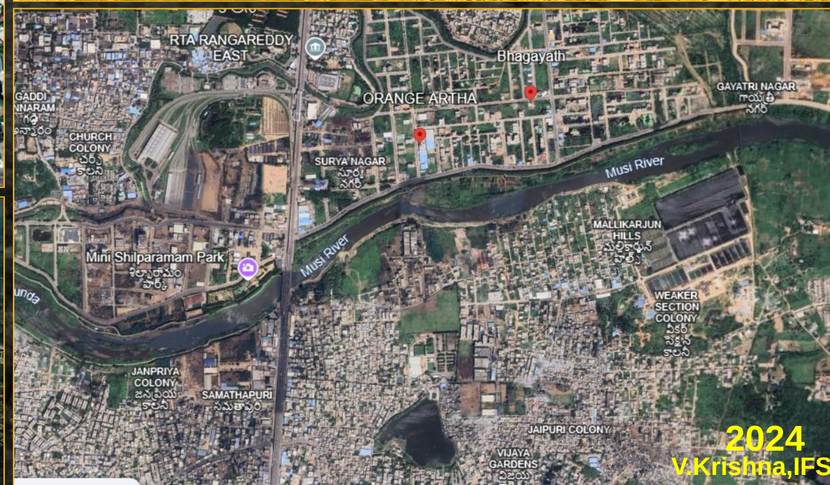
Hitech City Satellite Imagery Comparison over 3 decades



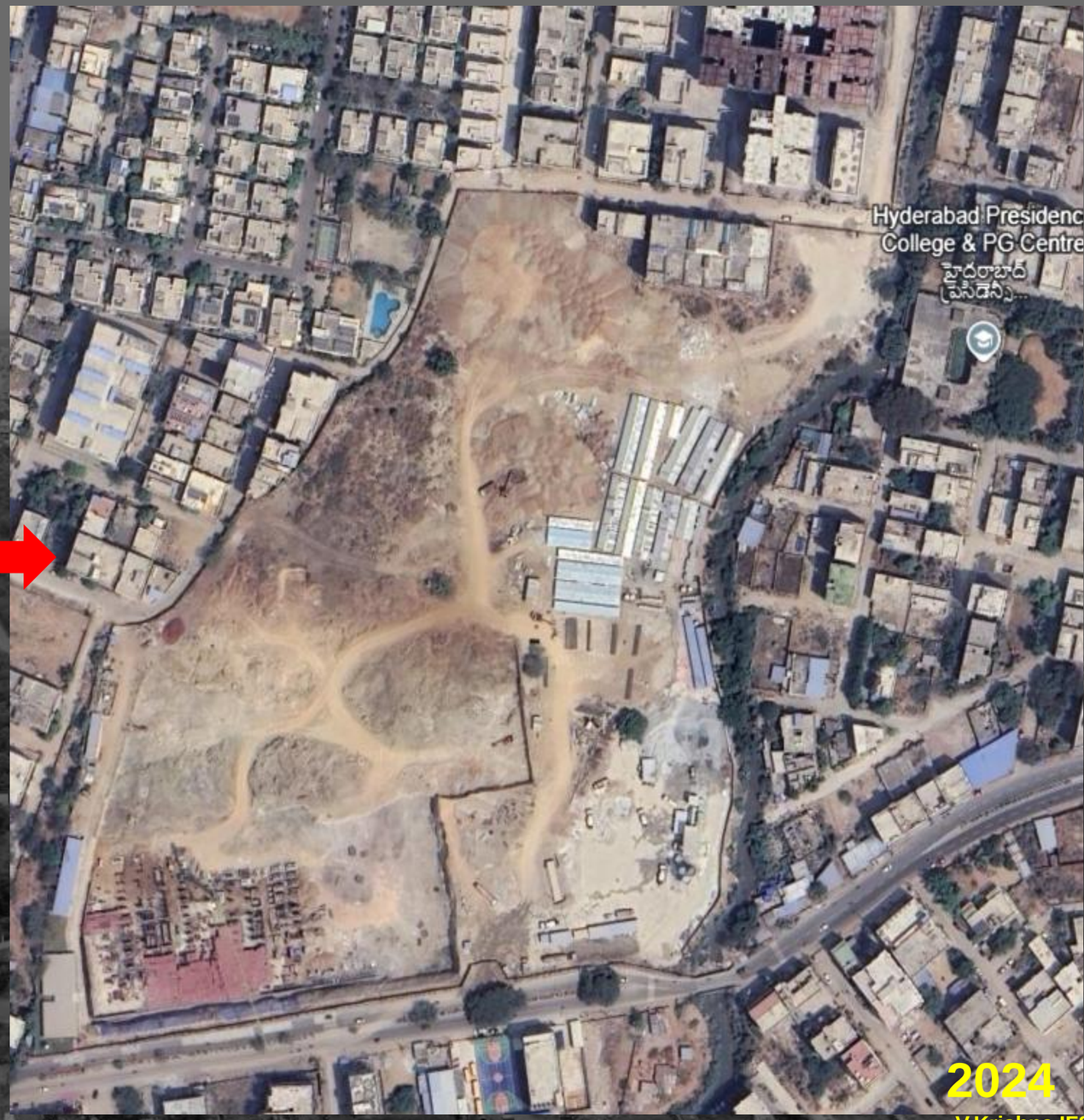


Financial District, Gachibowli

Nagole Metro, Uppal Bhagayath



Urbanization- Change of Landscape- Neknampur



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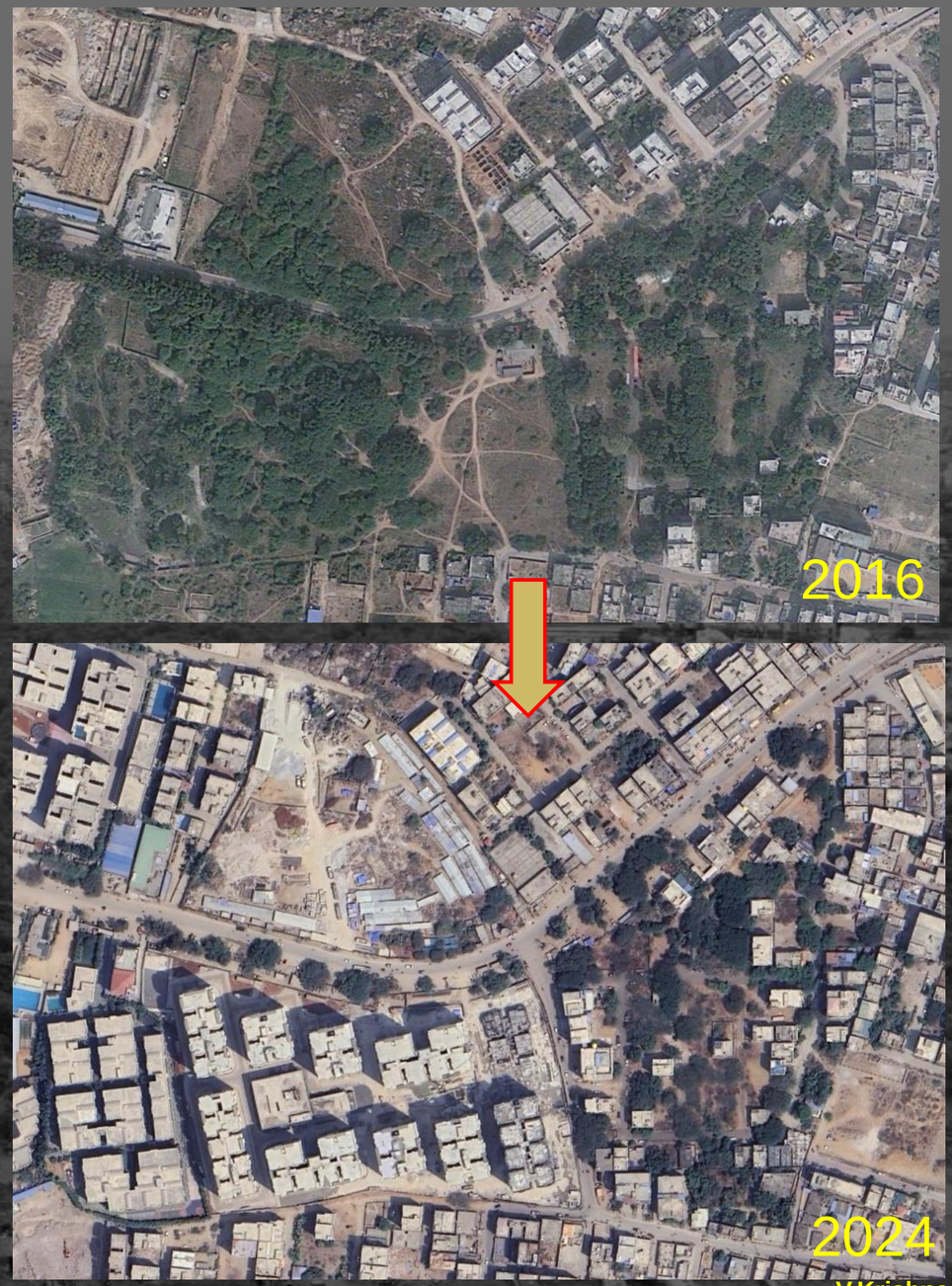
Change of Landscape

- Urbanization & Development results in change of landscape – green to grey
- Contiguous woodlots are fragmented
- A decline of green space & scattered green spaces
- Huge & indigenous trees are lost
- Inequalities in the spatial distribution of trees
- Exotics replace over native species
- Two or three species – dominant among tree population
- Results in loss of Biodiversity



2003, 2015 & 2024 satellite imagery of Ambarcheruvu

Pragathinagar & Yellammakunta near Kukatpally ,

Lakes- Major Problems

- Encroachments
- Solid waste disposal
- Industrial effluents
- Discharging of garbage
- Domestic sewage

National Remote Sensing Centre (NRSC) revealed a 61% reduction in city's lake area between 1979 and 2023. The total area of the 56 lakes has shrunk from 40.35 sq kms to just 16 sq kms.

Dissolved oxygen levels averaging between 2.5 mg/l and 4 mg/l —well below the recommended 10 mg/l.

Once vital carbon sinks for Hyderabad, now turns to methane makers

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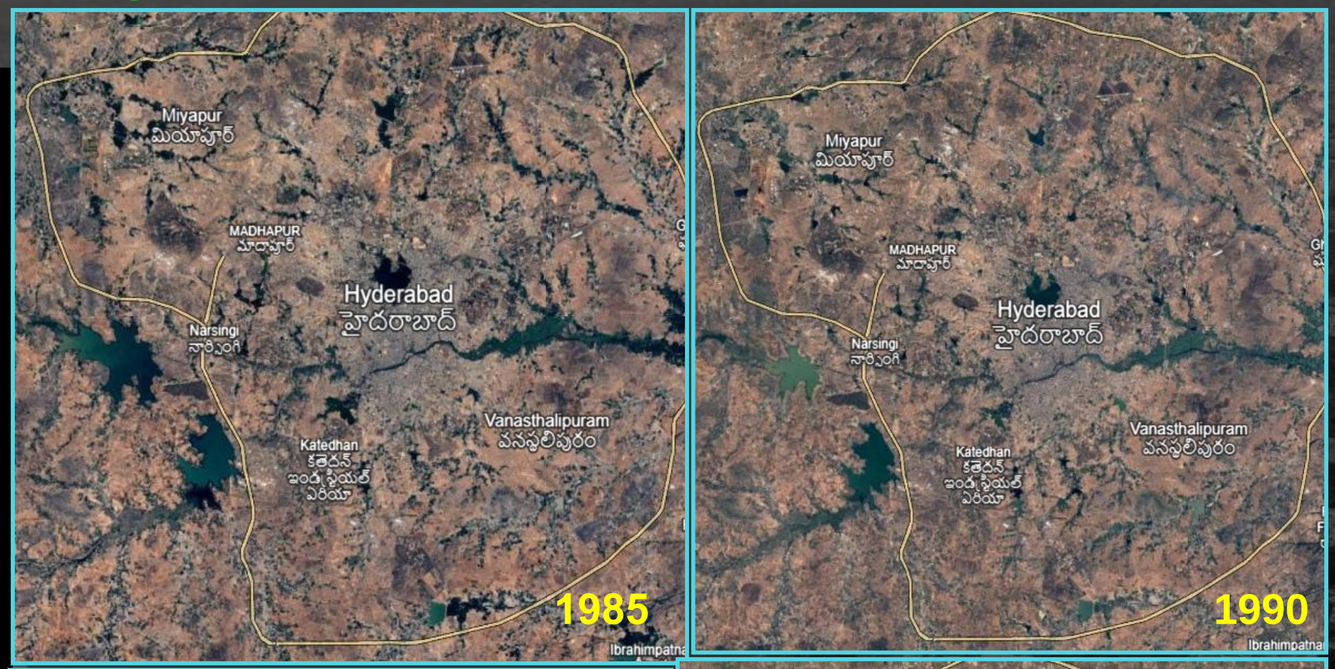
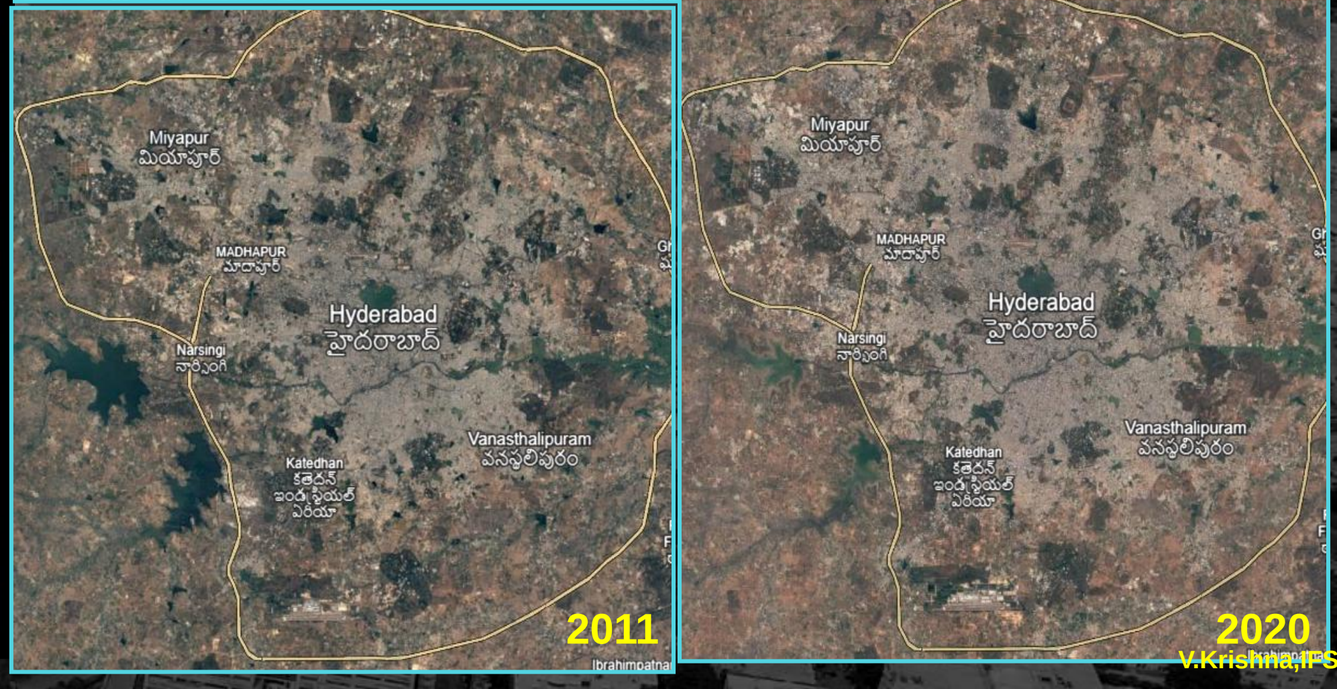
Chinna maisamma cheruvu, Borabanda

Change in Flood Plain of Lakes Chain within ORR





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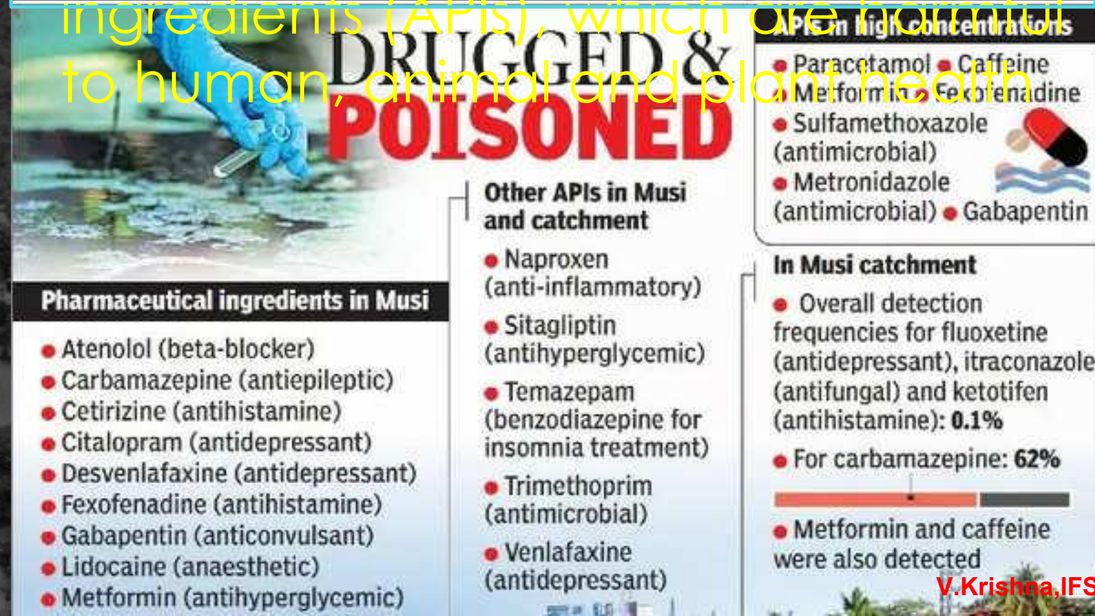
- Musi River Flowing for 254 kms length is a major tributary of Krishna River
- Musi River was the water source and lifeline of Hyderabad for over a century.
- Categorized as Priority-1 polluted river
- The Musi has emerged as the 22nd most polluted river in the world in terms of cumulative concentration of active pharmaceutical ingredients (APIs), which are harmful to human, animal and plant health



Plantation & Challenges

- Tough City Conditions
- Very limited open spaces due to high urban density
- Compacted & poor-quality soils from construction activity
- Water scarcity and difficulty in regular maintenance
- Space Competition with utilities (footpaths, pipelines, power lines)
- Urban heat island effect causing high sapling mortality
- Pollution (dust, vehicular emissions) affecting plant growth
- Vandalism, grazing, and inadequate tree protection
- Frequent infrastructure expansion leading to tree removal
- Higher costs of plantation and long-term maintenance
- Low community awareness and participation

Hence innovative vertical and micro-level greening solutions have become essential

Bio Diversity Conservation Efforts

- Protection of Existing Greens, wood lots and water bodies
- Massive afforestation programme- then Telanganaku Haritha Haram & **now Vanamahotsavam**
- Dedicated tree line along all the roads
- Development of parks
- Involvement of Colony Welfare Associations in maintenance of parks
- Free distribution of saplings through 600 centrally located nurseries
- Development of Urban Parks in Forest Areas adjoining residential areas

Bio Diversity Conservation Efforts

- Lake Restoration
- Improvement of Lake biodiversity by planting native trees
- Developing Tiny City Forests
- Theme parks to attract butter flies & birds
- Tree translocation initiative
- The efforts were scaled up in 1994-2000 with Hyderabad Greenbelt Project (HGBP) [5687 Ha]
- Followed by Green Hyderabad Environment Programme (GHEP) (2002-2006) [12100 Ha & 87

PARKS DEVELOPED IN HYDERABAD CITY

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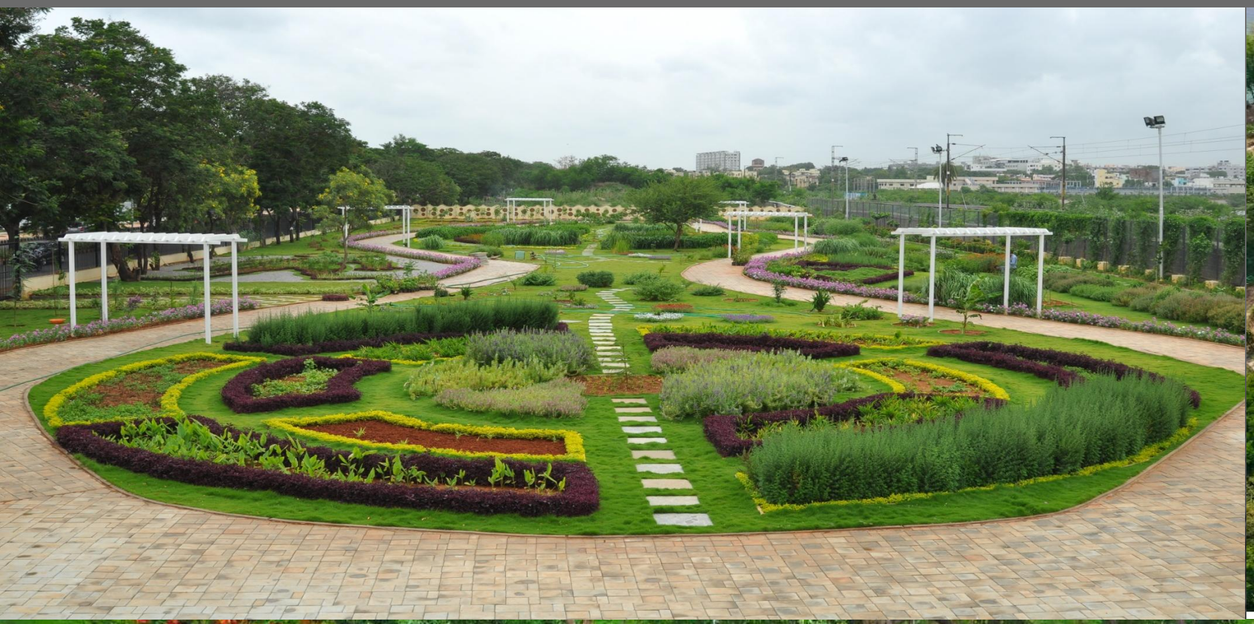
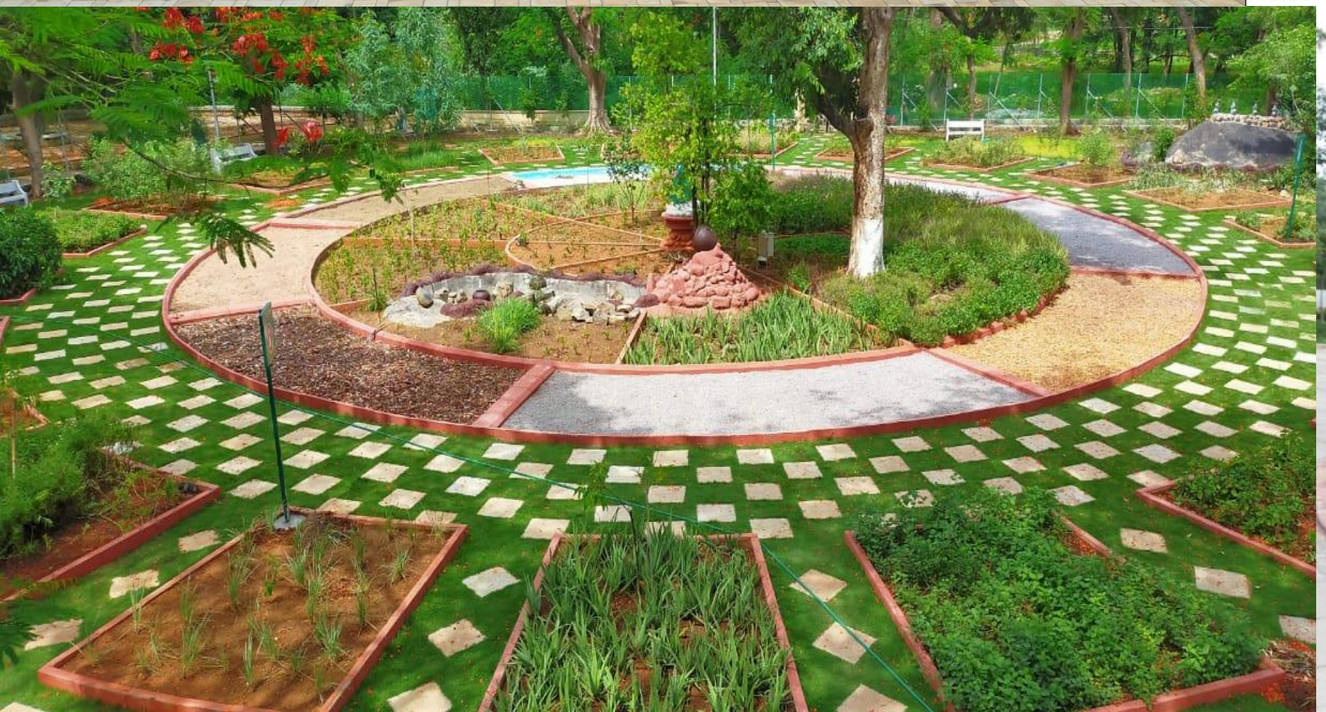
Theme Parks with various themes





Colony Parks

1141 Colony parks have been developed.

760 parks are being maintained by CWAs.

Tree Parks in Open Spaces

- Tree parks are developed with Tree plantation, Walking track around the park, seating areas & physical activity zone as per requirement.
- In tree parks plantations are done at 3mx3m espacement.
- All the trees planted are of indigenous species preferably

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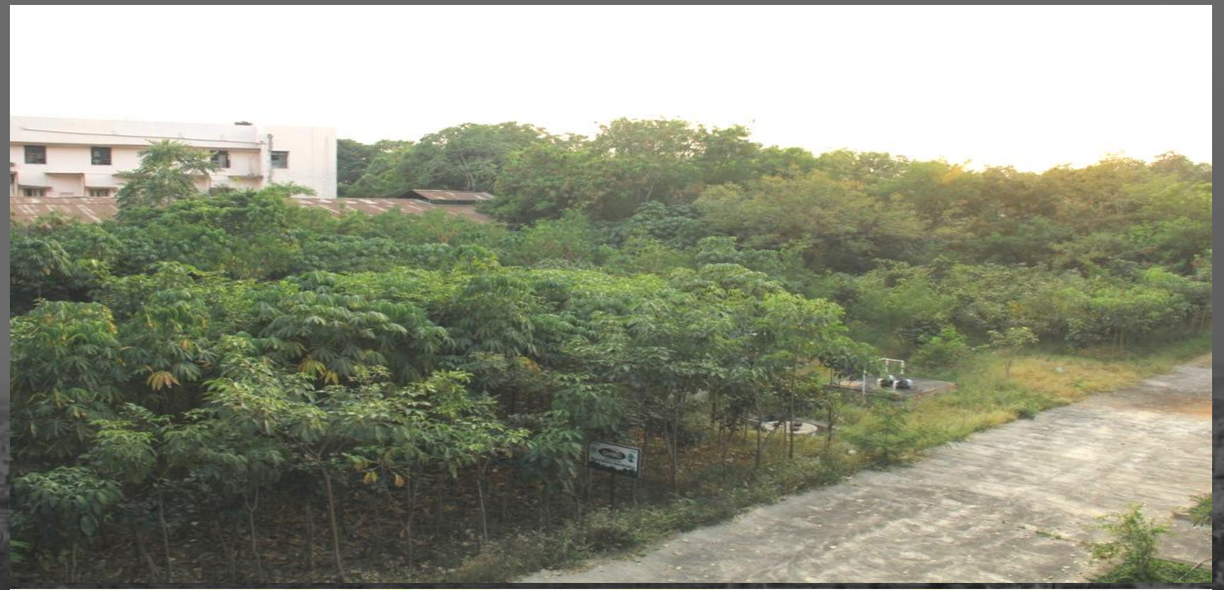
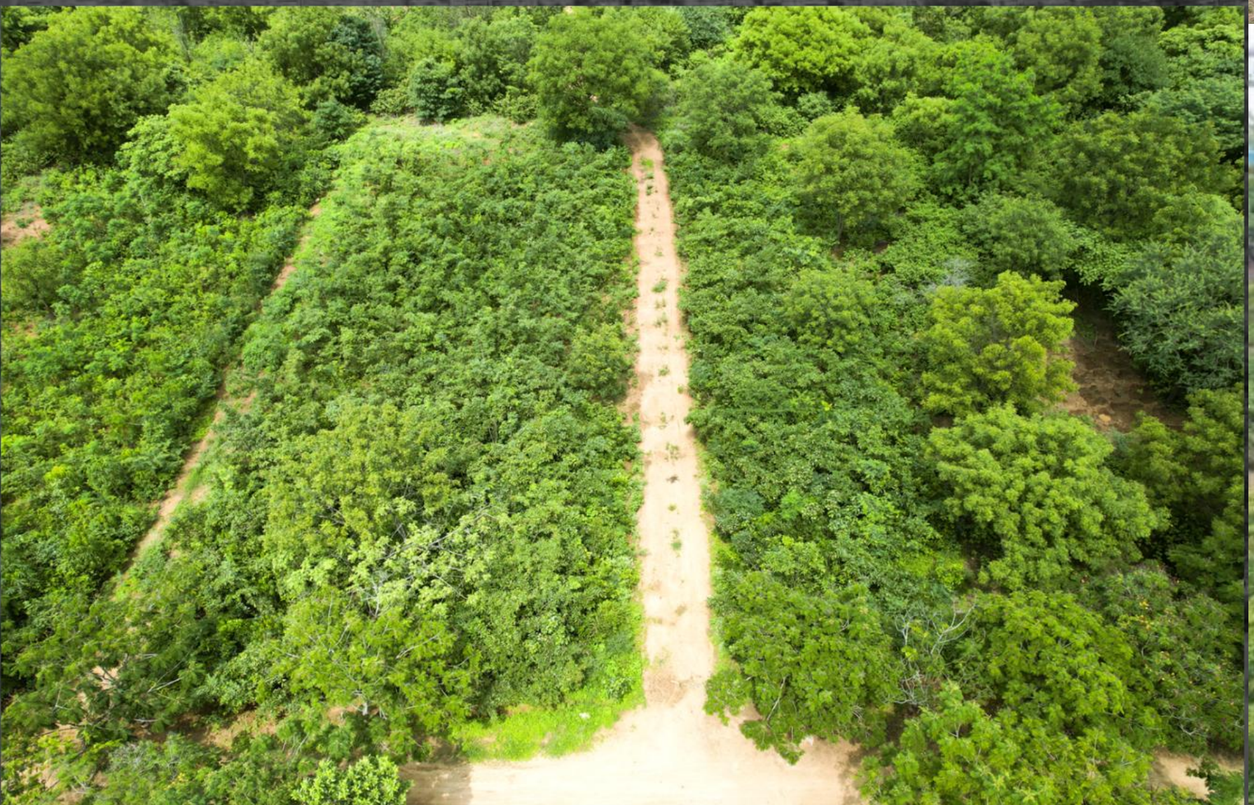
Institutional Plantations

- All the institutional open areas are being taken up with dense plantations.
- Preferably they are being taken up with 3m x 3m espacement.
- Depending on the availability of areas, either block plantations or peripheral plantations were taken up.
- Where there is protection valuable species of Forest species (atavi sampada) were planted.



Building Forests within the City

- A Yadadri model concept is developed on the lines of Miyawaki method to develop tiny forests within the colonies & other open lands to act as urban lung spaces.



Densification of Parks through Tree Planting

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Central Medians

- Greenery was developed in all central verges of roads with Trees & Flowering shrubs
- These central median greenery made very dense by planting trees

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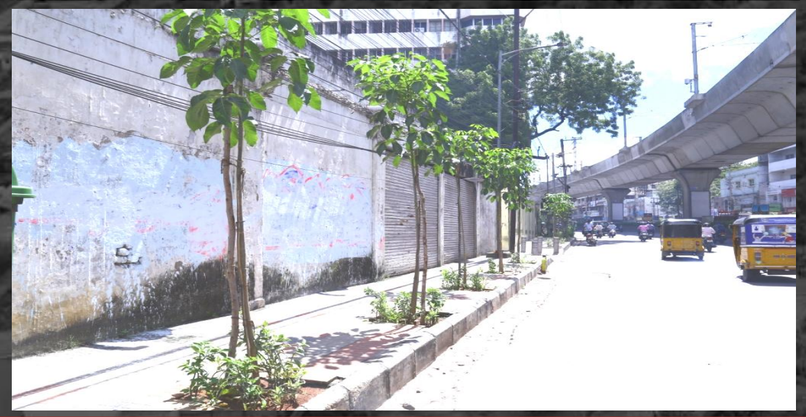
Greenbelts along roadways

- Hydrocarbon related emissions and particulate matter are the major pollutants on the roadside.
- The greenery would help in reducing Air, Noise and Dust pollution, provides bio-aesthetic environment to the commuting public.
- The plantation will be in multiple rows along National Highways.
- Single rows in case of Internal roads.

Roadside Plantations

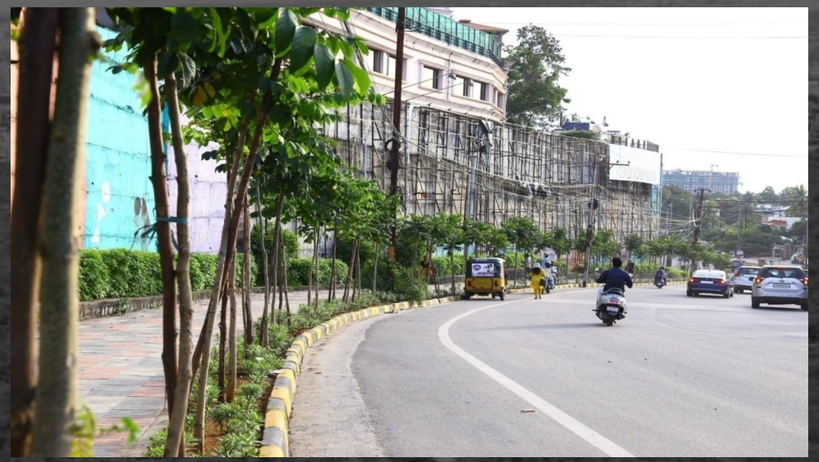
On the edge of Footpath adjacent to road

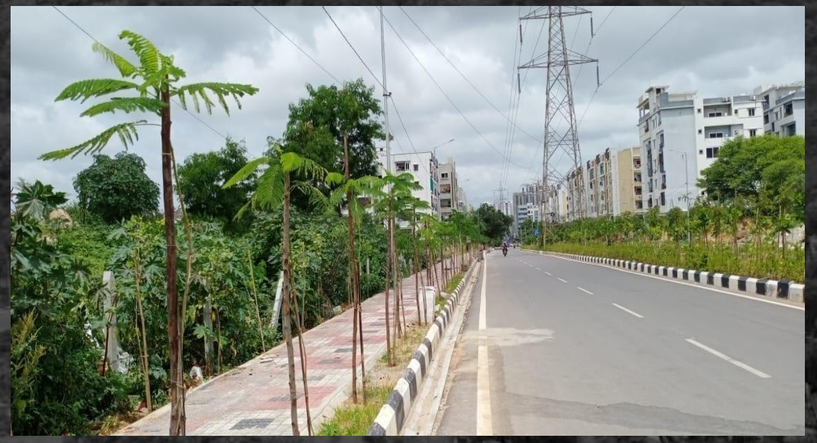


Roadside Plantations

On the edge of Footpath adjacent to road (continuous)

- The avenue plantations were taken up in a continuous manner by construction of a planter box between Footpath & Road edge.
- Flowering shrubs continuously are being planted along with Trees.



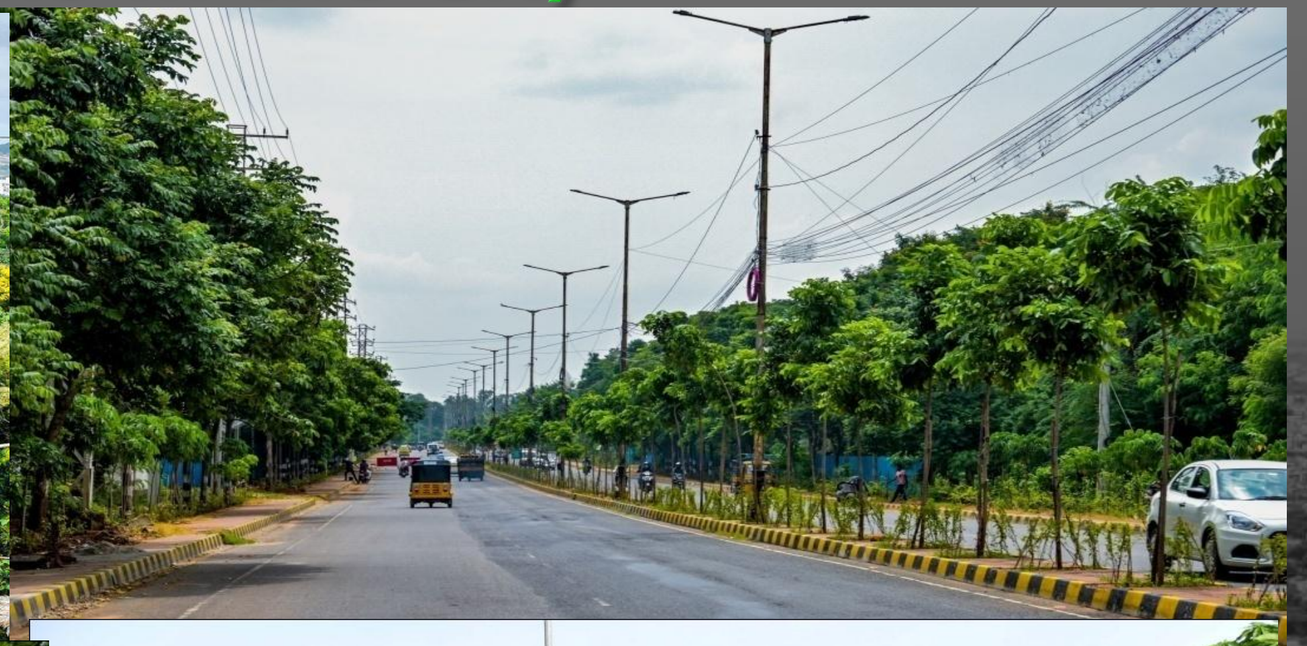


Roadside Plantations

Infront of buisiness activity shops

Roadside Plantations

Road Medians in the City



Greenery along Link Roads & Radial Roads

Residential Colony Plantations

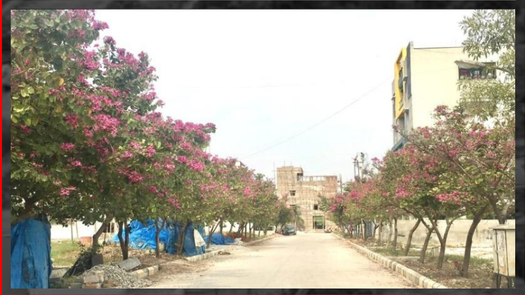
Green Flyovers

- All the Flyovers were developed with underneath greenery

Vertical Gardens

Inch by Inch Colony Plantations

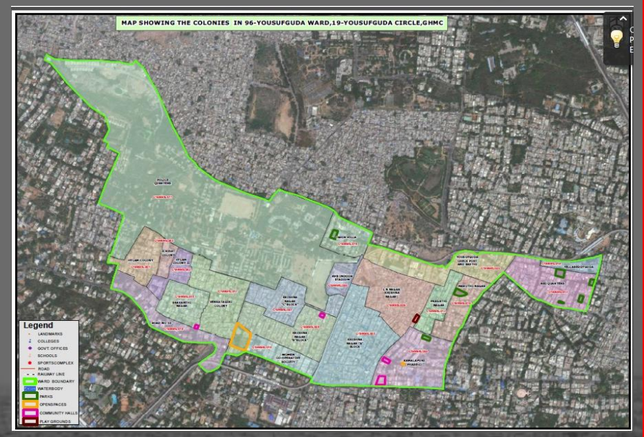
- There are 4846 colonies in GHMC area.
- Concept is to take the colony as the smallest unit and take up plantation in every available space of the colony to saturation level & declare the colony as saturated for plantation.
- To execute all the plantation models exploring space availability and also encouraging the homestead plantations, rooftop gardens with active stake holder participation



Annexure A

Ward wise tree cover

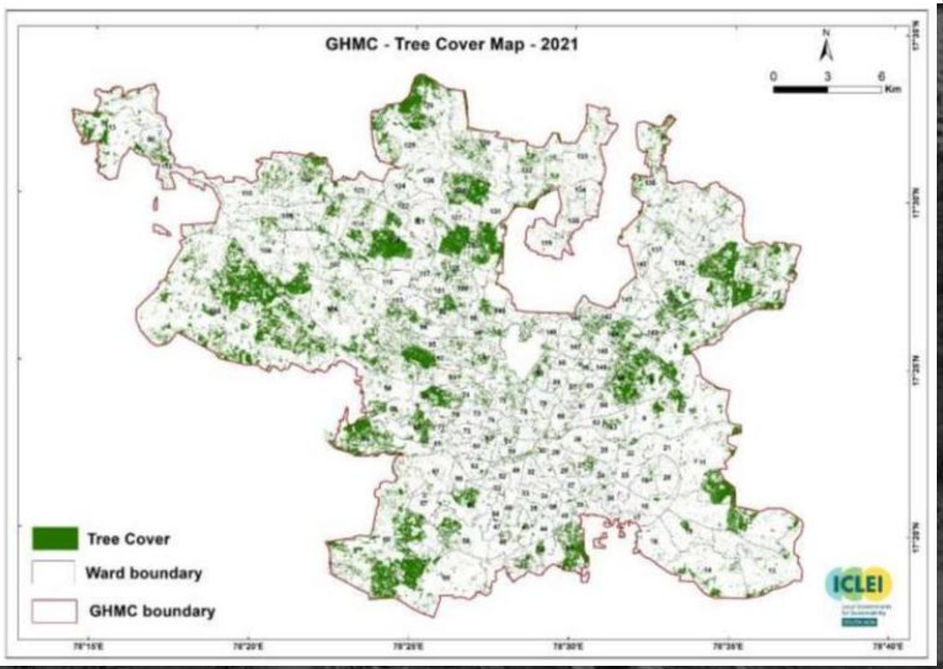
S.No.	Ward Number	Tree cover %
1	KAPRA	9.91
2	DR.A.S.RAO NAGAR	19.72
3	CHERLAPALLY	31.63
4	MEERPET H.B.COLONY	24.62
5	MALLAPUR	31.40
6	NACHARAM	21.44
7	CHILUKA NAGAR	19.65
8	HABSIGUDA	29.93
9	RAMANTHAPUR	10.97
10	UPPAL	9.96
11	NAGOLE	20.11
12	MANSOORABAD	13.96
13	HAYATHNAGAR	6.88
14	B.N.REDDY NAGAR	10.54
15	VANASTHALIPURAM	7.20
16	HASTHINAPURAM	3.20
17	CHAMPAPET	4.62
18	LINGOJIGUDA	5.57
19	SAROORNAGAR	6.82
20	R.K.PURAM	3.65
21	KOTHAPET	2.77
22	CHAITHANYAPURI	4.93
23	GADDIANNARAM	1.67
24	SAIDABAD	8.42
25	MOOSARAMBAGH	6.89
26	OLD MALAKPET	3.57
27	AKBERBAGH	17.30
28	AZAMPURA	4.76
29	CHAWANI	6.81
30	DABEERPURA	7.24
31	REIN BAZAR	3.15
32	PATHER GATTI	7.26
33	MOGHALPURA	4.12
34	TALABCHANCHALAM	1.00
35	GOWLIPURA	3.97
36	LALITHABAGH	5.80
37	KURMAGUDA	4.46
38	I.S.SADAN	10.39
39	SANTOSH NAGAR	7.41
40	RIYASATNAGAR	7.32



Annexure A

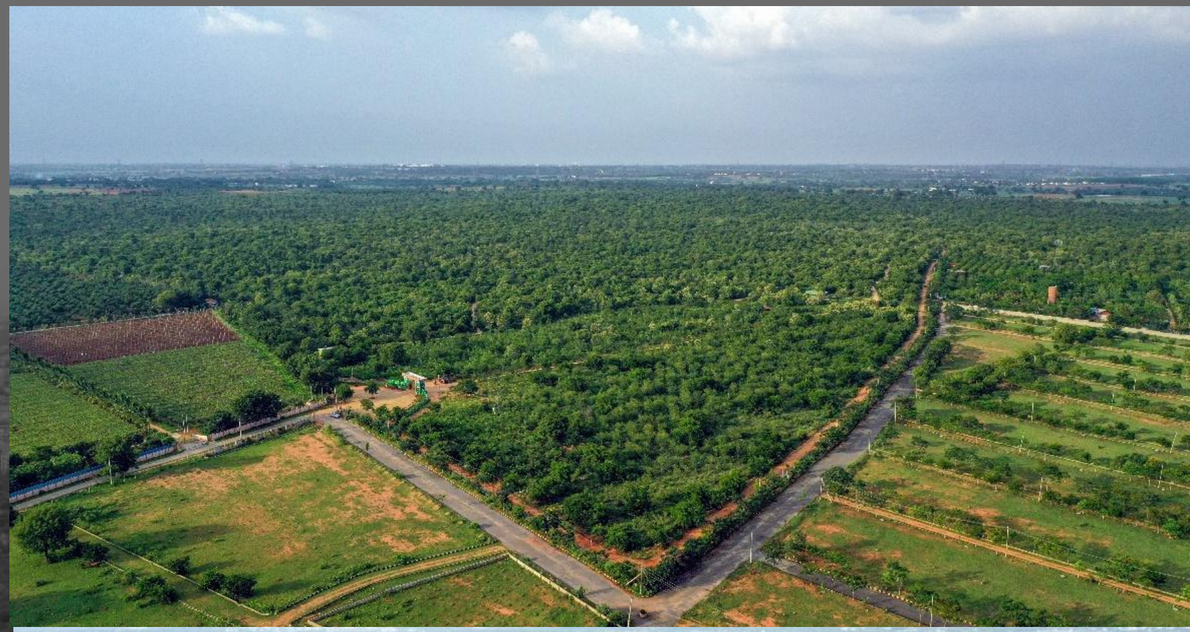
Khairatabad Zone

COLONYID	WARD	CIRCLE	ZONE	Treecover	Colony_Area	Tree_Cover_%
90	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.38	9.04	4.20
83	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.61	9.27	6.62
81	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.32	12.06	2.65
89	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.35	10.02	3.45
87	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.16	3.79	4.13
86	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	1.36	8.64	15.73
88	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.77	6.40	12.00
85	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.50	6.57	7.58
91	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.52	7.35	7.07
80	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.33	11.53	2.86
82	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.19	7.05	2.75
84	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.94	12.96	7.28
79	70-MEHDIPATNAM	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.59	16.29	3.60
114	71-GUDIMALKAPUR	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.13	1.21	10.48
104	71-GUDIMALKAPUR	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.14	6.88	2.11
115	71-GUDIMALKAPUR	CIRCLE - 12 (MEHDIPATNAM)	KHAIRATABAD ZONE	0.03	3.16	1.08



Development of Urban Forest Parks

- To provide adequate lung spaces to the citizens living in and around areas by developing forest blocks.
- Provide healthy living environment
- To contribute to the growth of smart, clean green, sustainable and healthy city.
- Forest Blocks in 129 Locations with Area : 1,60,661 acres
- Urban Forest Parks in 59 Locations



Green Buffer around the City

- Total stretch: 158Km
- 28 Radial Roads (307 Km)connects with the ORR
- Express Way is provided with Fencing
- 14 Entry and Exit Junctions
- 21 Interchange Locations
- Dense plantations were taken up along MCW and service roads & also in all open spaces at

Junction Beautification

Greenery in Vaikunta Dhamam

Eco-friendly crematorium sites were developed for public service by keeping it in a clean and efficient condition for the smooth conduct of cremations of the departed souls.

Tree Translocation Initiative

Tree Protection Committee

The State Government has constituted Protection Committee consisting of Non Officials (NGOs) and Officials to monitor permission for removal of trees with in the urban limits of Hyderabad and RR Districts under Water Land Trees Act, 2002 in the year 2008.

- **Forest Department,**
- **HMDA,**
- **GHMC,**
- **R&B Department**
- **NGO’s**

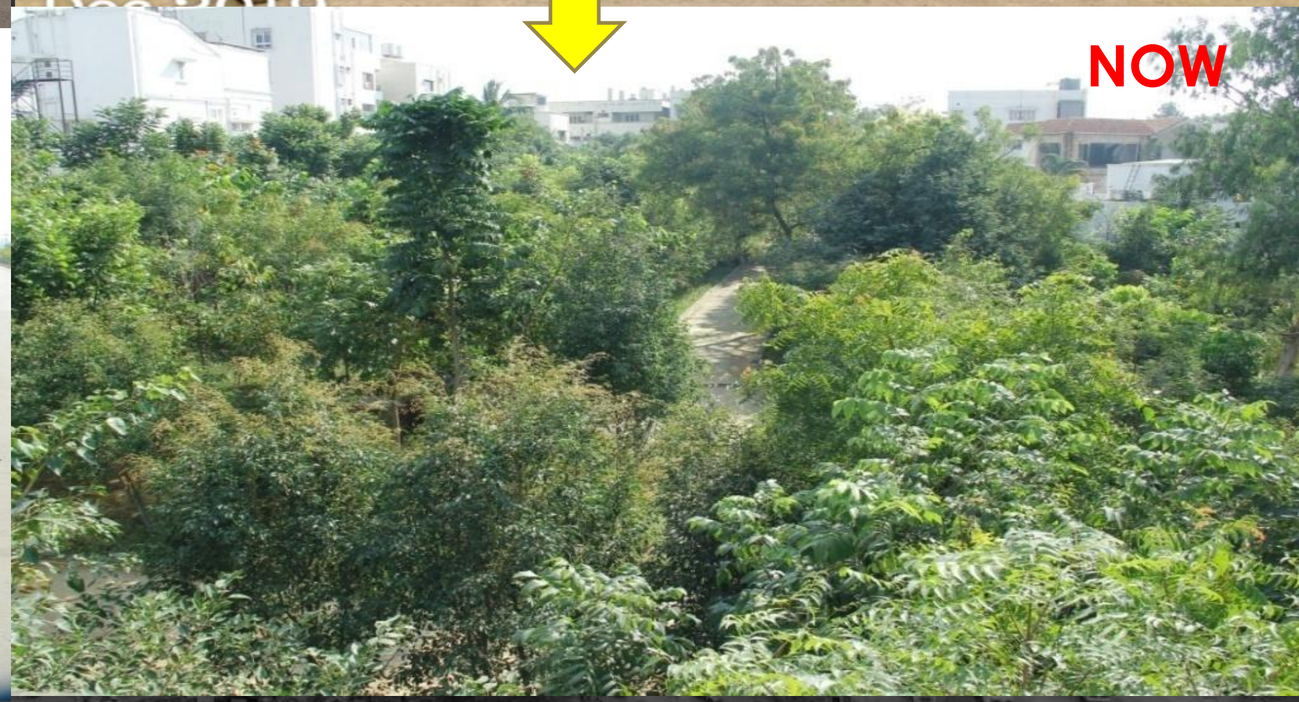
Dump Yard Beautification

- The hedges, flowering shrubs and flowering trees with scented flowers shall be planted around the Dump Yards. The view of the yard should be screened with plants. Inside the yard by identifying certain blocks the colorful hedges and shrubs along with evergreen tree species shall be planted. By regular separation of green waste for composting and recycling of solid waste these yards can be given like a park like appearance by controlling bad smell with aromatic plants.

"Green Roofs Can Also Contribute Hyderabad Environment!"

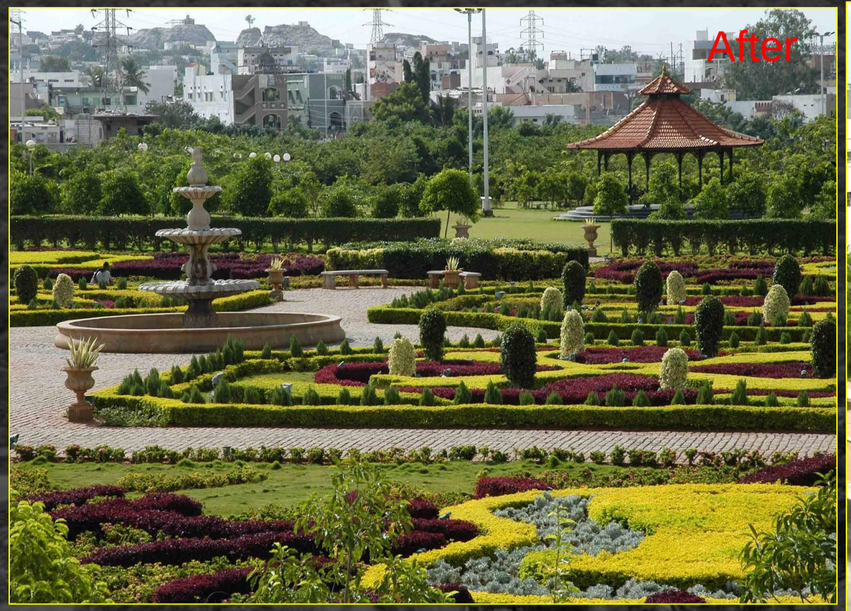
- Green roofs make the most of unused space within the increasing density of our cities. It is assessed that about 50000 acres of Roof Top is available in Hyderabad City
- Plants on Roof tops are able to cool down entire cities, reducing the UHI (Urban Heat Island) effect through the daily evaporation cycle
- Terrace gardens are encouraged on subsidy & plants at free of cost benefitting 32100 house holders with 1.6 million sq mt under green roofs in last 7 years.

Few Glimpses of Transformation

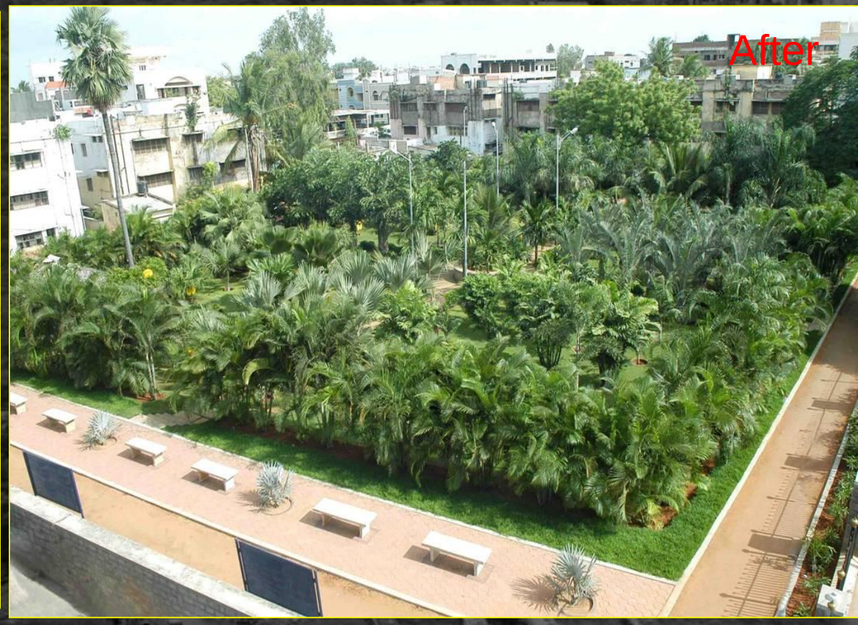


JVR Park

Krishnakant Park

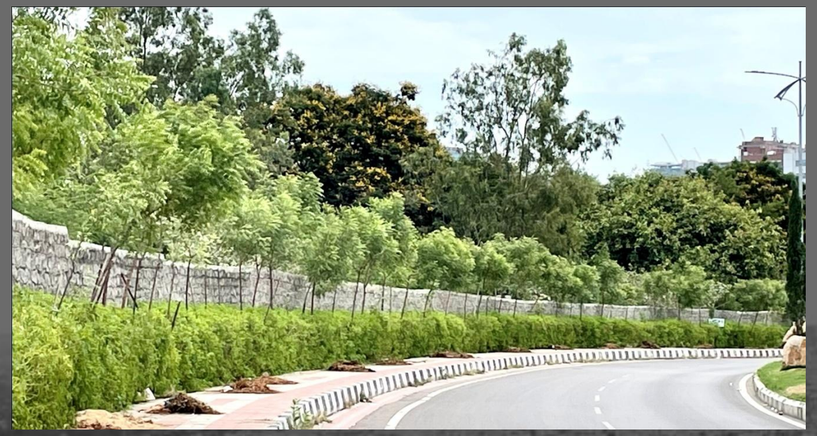


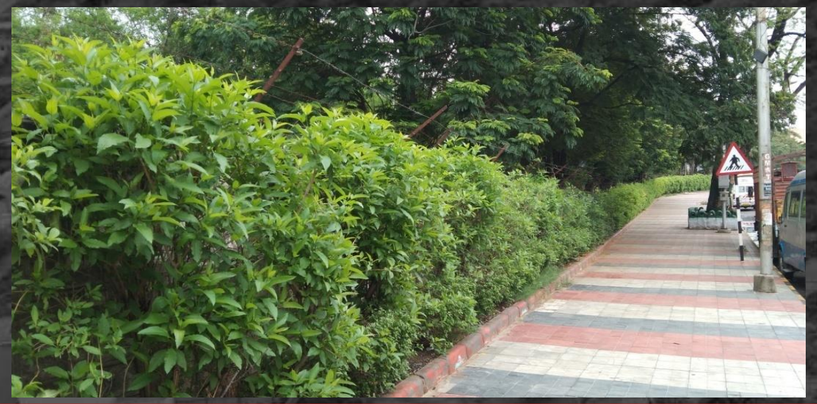
Palmetum



Roadside Plantations

Adjacent to compound wall facing road





Central Median Plantations

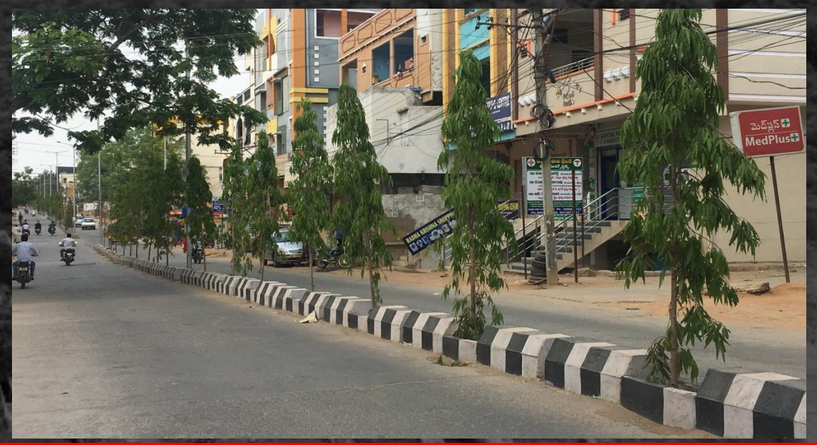
(Low height median)

- Tall trees are planted along with hedges

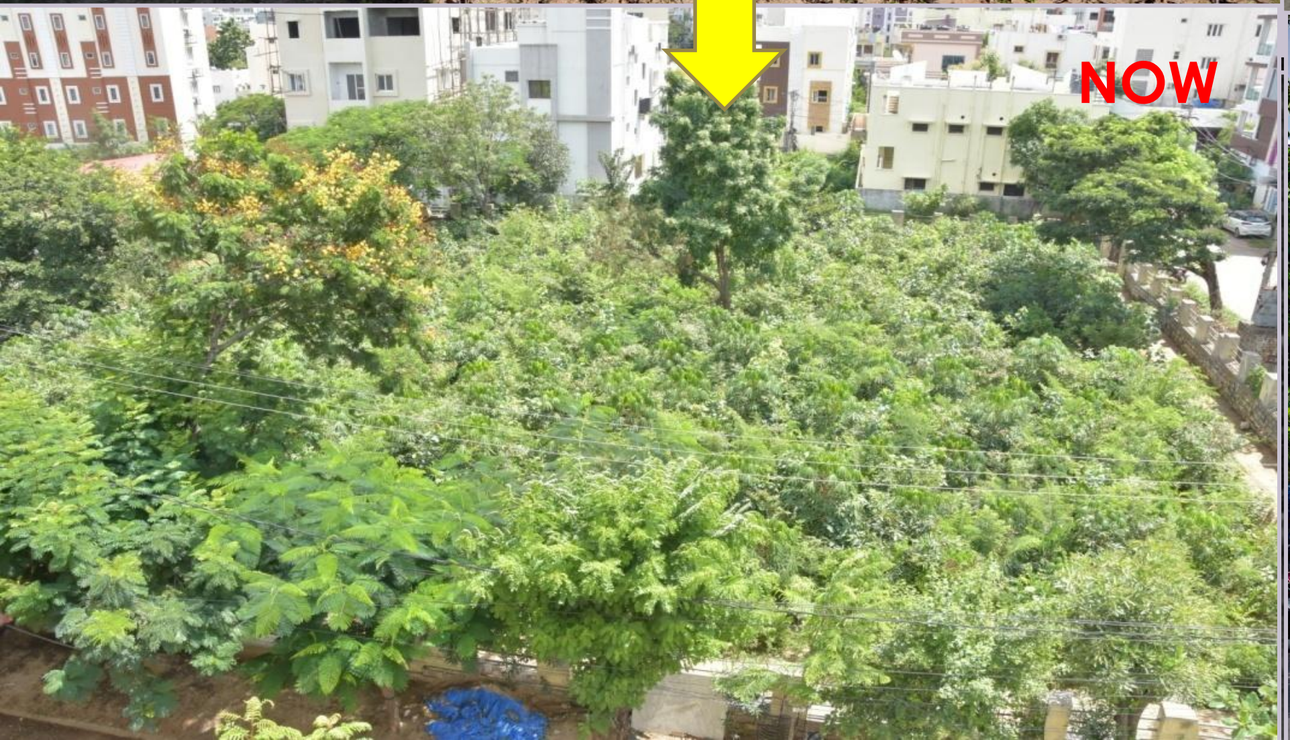
Central Median Plantations

(Solid blocks median)

- Trees were planted by removing blocks at 3 mts.
- After planting side curbs are provided
- Polyalthia longifolia is planted preferably and height is restricted by topping.

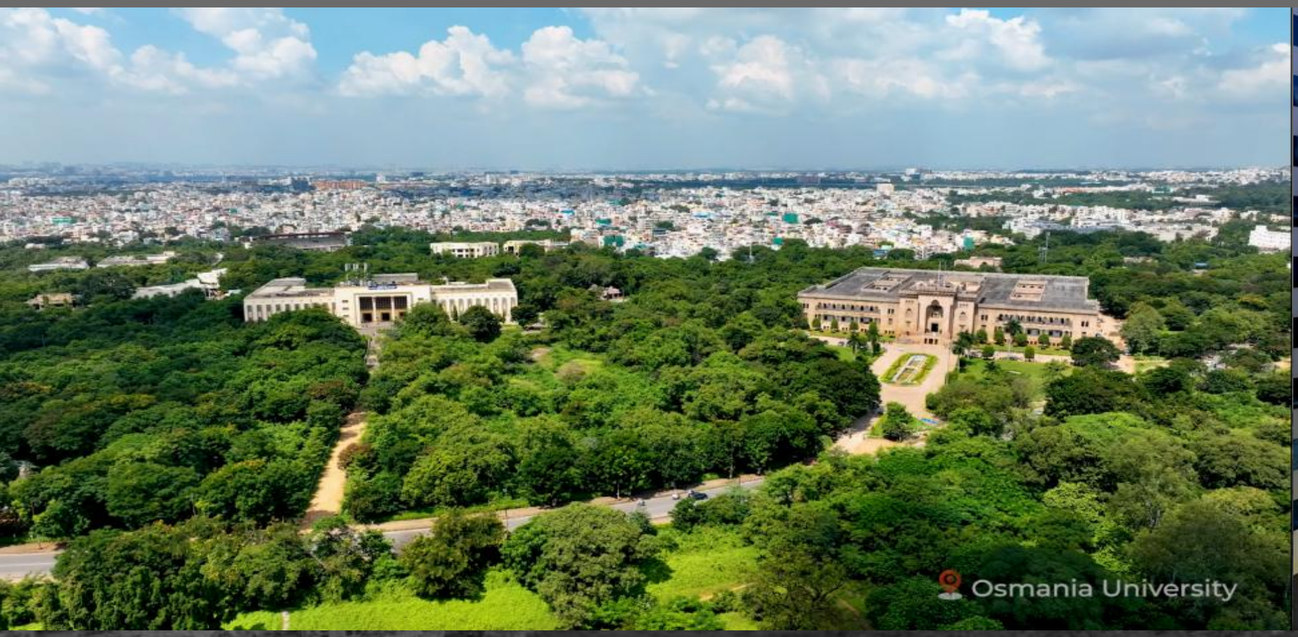


Few Glimpses of Transformation



Lung Spaces created in Colonies

PLANTATIONS IN HYDERABAD CITY



Lakes Restoration & Beautification

- Restoration of lakes to increase the ground water table with clean water
- Maintain the water balance in the lakes
- Improvement of Lake ecosystem
- 66 lakes are fully restored in Hyderabad city

Lake View Park, Khairatabad

- Lake View park has been developed with lot of tree cover

Before

After

Lakes Restoration & Beautification

City Biodiversity Index

- **In 2012**, (GHMC) administered the CBI within Hyderabad city and **scored 36 points** out of 92 points.
- GHMC updated it **in 2021**.
- City has secured **57 out of 92 points**.

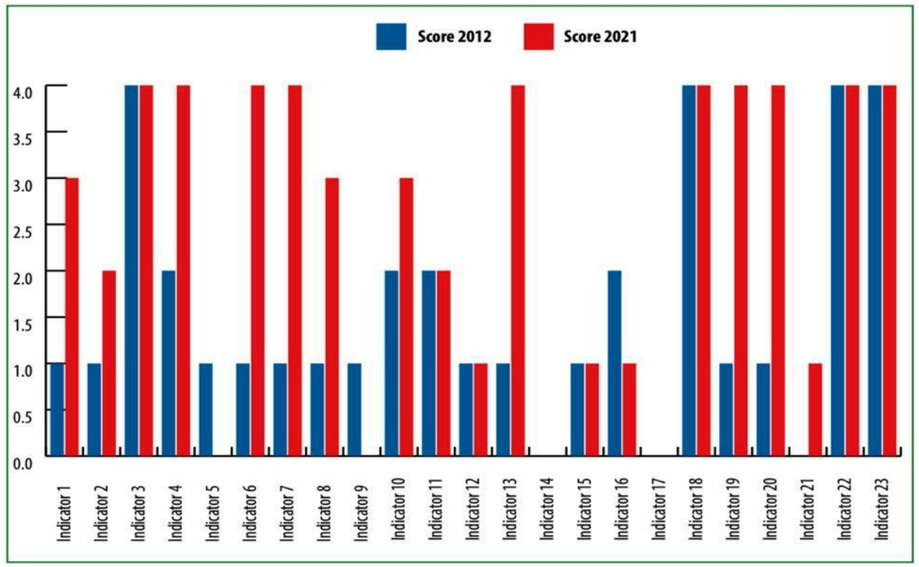


Figure 2: Comparison of scores – index application in 2012 and 2021

Table 1: Comparative of scores between different applications of the index

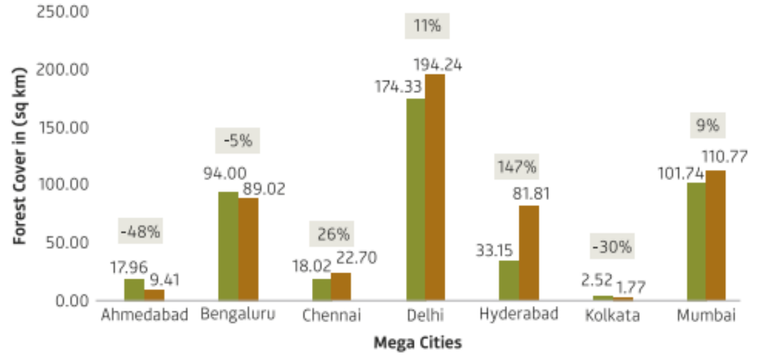
Indicator	Score in 2012	Score in 2021
Indicator 1	1	3
Indicator 2	1	2
Indicator 3	4	4
Indicator 4	2	4
Indicator 5	1	0
Indicator 6	1	4
Indicator 7	1	4
Indicator 8	1	3
Indicator 9	1	0
Indicator 10	2	3
Indicator 11	2	2
Indicator 12	1	1

Indicator	Score in 2012	Score in 2021
Indicator 13	1	4
Indicator 14	0	0
Indicator 15	1	1
Indicator 16	2	1
Indicator 17	0	0
Indicator 18	4	4
Indicator 19	1	4
Indicator 20	1	4
Indicator 21	0	1
Indicator 22	4	4
Indicator 23	4	4

REPORTS

- As per **India State of Forest Report 2021 (ISFR)** Hyderabad city has gained forest cover with 147% in last decade from 12.80 Sq. Miles to 31.59 Sq.Miles.

Figure 2.16 Forest Cover between ISFR 2011 & ISFR 2021 in Mega Cities



Awards

- **TREE CITY** by Arbor day foundation & FAO for consecutive years 2020 & 2021
- **'World Green City Award 2022'** by **AIPH**

Change in Forest Cover in Mega Cities

Decadal change in Forest Cover between ISFR 2011 and ISFR 2021 has also been analysed and details are presented in Table 2.16 given below. There is an increase of 68 sq km of Forest Cover in the last ten years. Maximum gain in Forest Cover is seen in Hyderabad (48.66 sq km) followed by Delhi (19.91 sq km) while Ahmedabad and Bengaluru have lost Forest Cover of 8.55 sq km and 4.98 sq km respectively.

Figure 2.16 Forest Cover between ISFR 2011 & ISFR 2021 in Mega Cities

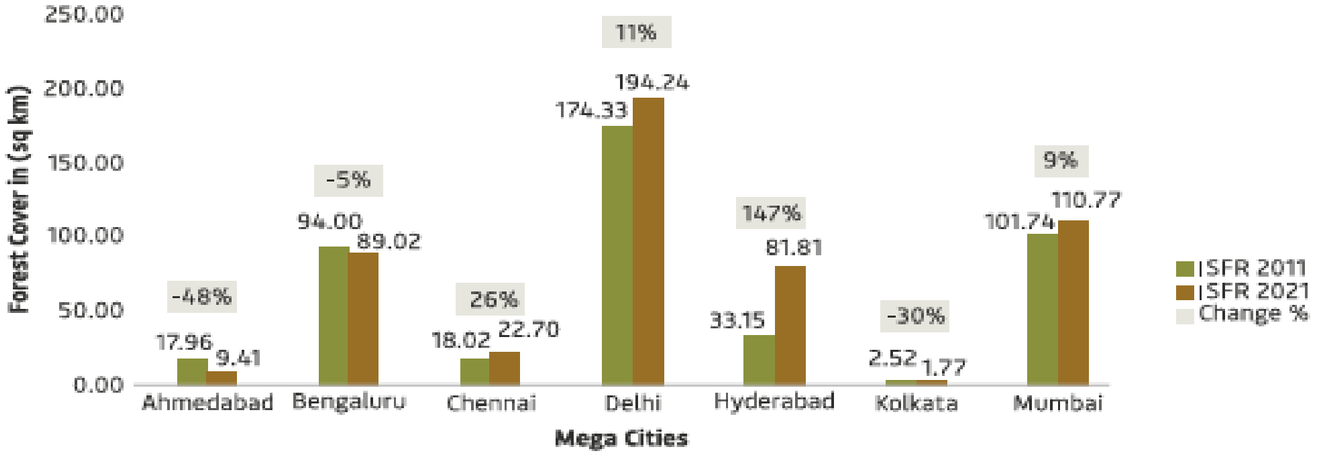


Table 2.14 Change in Forest Cover in major Mega Cities between ISFR 2021 and ISFR 2023

Name	State	Area as per digitized boundary*	ISFR 2021				ISFR 2023								Forest cover change between ISFR 2021 and ISFR 2023
			VDF	MDF	OF	Total Forest Cover	% of total Forest cover wrt area of digitized boundary	Scrub	VDF	MDF	OF	Total Forest Cover	% of total Forest cover wrt area of digitized boundary	Scrub	
Ahmedabad	Gujarat	455.32	0.00	1.59	7.82	9.41	2.07	4.85	0.00	1.73	13.16	14.89	3.27	3.18	5.48
Bengaluru	Karnataka	1,307.35	0.00	12.66	76.36	89.02	6.81	14.87	0.00	12.28	77.33	89.61	6.85	13.69	0.59
Chennai	Tamil Nadu	430.07	0.00	7.66	15.04	22.70	5.28	1.77	0.00	7.37	12.69	20.06	4.66	1.77	-2.64
Delhi	Delhi	1,540.63	6.74	56.34	131.15	194.23	12.61	0.45	6.49	53.40	134.26	194.15	12.60	2.39	-0.08
Hyderabad	Telangana	634.18	0.00	17.68	64.13	81.81	12.90	29.96	0.00	17.03	63.17	80.20	12.65	28.43	-1.61
Kolkata	West Bengal	186.55	0.00	0.10	1.67	1.77	0.95	0.00	0.00	0.10	1.96	2.06	1.10	0.00	0.29
Mumbai	Maharashtra	435.91	0.00	51.13	59.65	110.78	25.41	0.00	0.00	50.85	59.99	110.84	25.43	0.00	0.06
TOTAL		**4,990.01**	**6.74**	**147.16**	**355.82**	**509.72**	**10.21**	**51.90**	**6.49**	**142.76**	**362.56**	**511.81**	**10.26**	**49.46**	**2.09**

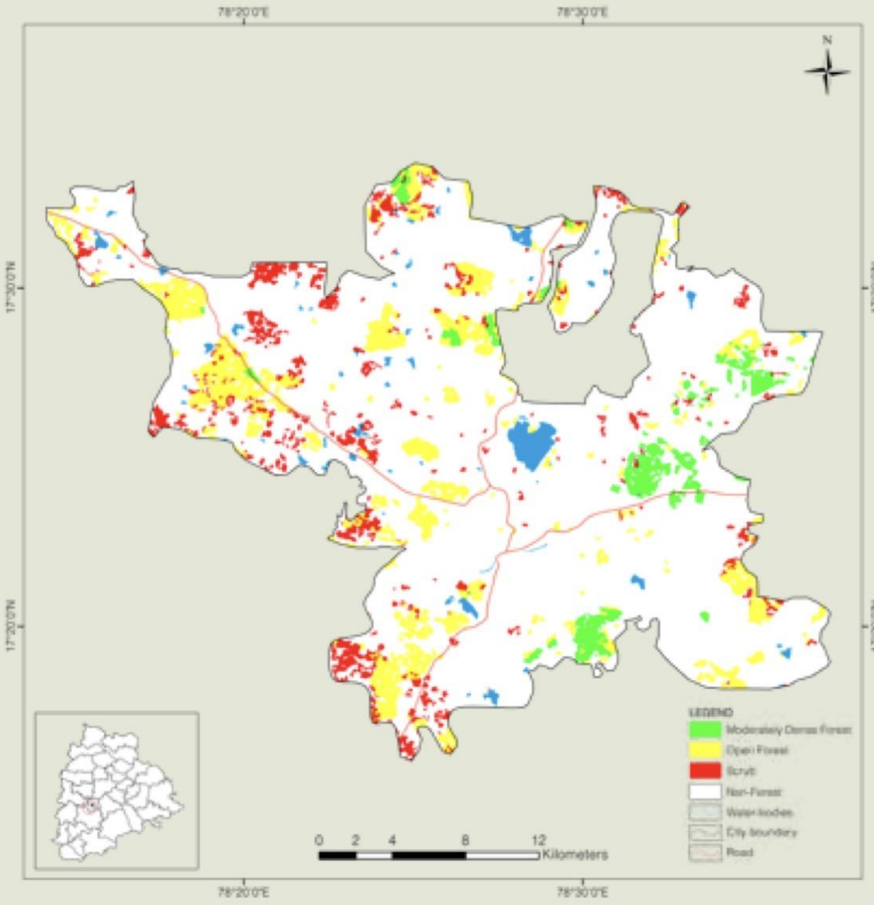


Figure 2.19 Map showing Forest Cover in Hyderabad

HYDRA

- Hyderabad Disaster Management and Asset Protection Agency, known as HYDRA.
- **Asset Protection Wing:** This wing protects government properties and public assets such as parks, lakes, and open spaces from encroachments that threaten these vital natural resources.
- Awareness about significance of FTL and buffer zones in urban planning and environmental conservation.
- HYDRA has already made a significant impact in Hyderabad. Actions have reclaimed valuable land and sent a strong message—unchecked illegal construction will no longer be tolerated.

Musi River Rejuvenation Program

“Saral Dhara, Aviral Dhara, Nirmal Dhara”

- **TRANSFORMING MUSI RIVERFRONT FOR A SUSTAINABLE FUTURE**
- Environmental - Create thriving ecosystems, improve water quality, and preserve natural habitats
- In the first phase of the project, 20.5 Km length will be taken up for development
- Construction of 39 sewage treatment plants (STPs) along the Musi river
- The capacity of these 39 STPs is 965 million liters a day

Telangana Rising – Vision & Growth Strategy

CURE, PURE & RARE Development Model

CURE – Core Urban Region Economy

- Area: Inside Hyderabad Outer Ring Road (ORR)
- Focus: Service sector growth & Net-Zero city
- Key Plans: **urban services – (**Metro expansion, Musi river rejuvenation, pollution control)

PURE – Peri-Urban Region Economy

- Area: Between ORR & Regional Ring Road (RRR)
- Focus: Manufacturing & Industrial growth
- Key Plans: Future cities, SEZs, expressways, airport connectivity

•RARE – Rural Agricultural Region Economy

- Area: Beyond RRR to state borders
- Focus: Agriculture-led & rural development
- Key Plans: Agri-processing, value chains, rural livelihoods

🎯 **Goal :** Target: $1 Trillion economy (2034) | $3 Trillion economy (2047)

Key Focus Areas : Infrastructure & future cities, Green & sustainable development, Skill development & job creation, Investment promotion & global partnerships

TELANGANA RISING
CURE - PURE - RA

Re-Oraganization of GHMC under CURE & HMDA under PURE

•Greater Hyderabad Municipal Corporation (GHMC) into three separate municipal corporations under the Core Urban Region (CURE) initiative to improve administrative efficiency.

•The restructuring followed the city's expansion to approximately **2,053 sq km** (previously 650 sq km), encompassing areas within and slightly beyond the Outer Ring Road

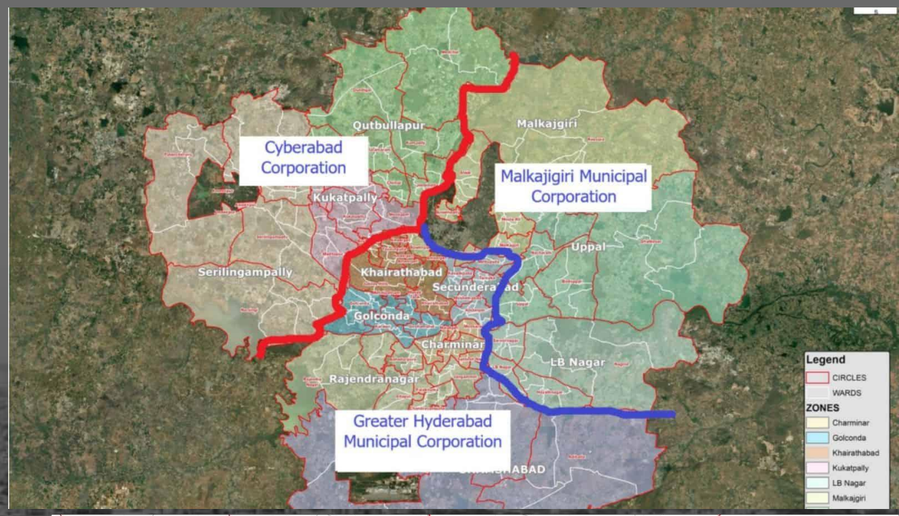
•HMDA's jurisdiction expanded significantly to cover the

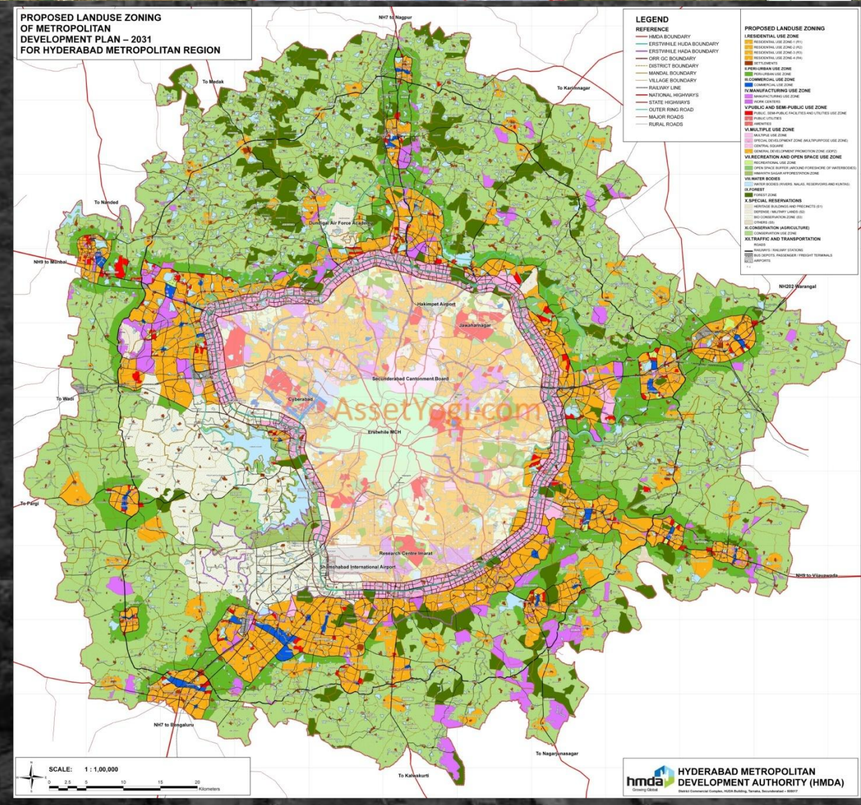
•**Regional Ring Road (RRR) corridor** and surroundings.

•New area now includes **~10,472 sq. km** (previously ~7,257 sq. km).

•The HMDA now covers a 2 km buffer zone outside the 354 km RRR, targeting a comprehensive Master Plan 2050

•The expansion aims to facilitate planned, sustainable growth around the RRR, including industrial hubs, residential zones, and infrastructure, aimed at transforming Hyderabad into a global metropolis.





Rural Forestry and Social Forestry

- Rural forestry in Telangana is largely implemented through **social forestry models**, which aim to meet local needs while enhancing environmental sustainability. It includes **farm forestry, community forestry, and agroforestry practices**.
- It includes the development of—village-level biodiversity parks. These serve multiple functions: Providing green spaces in rural areas , Supporting livelihoods through minor forest produce,Enhancing soil and water conservation
- Rural forestry is closely linked with **livelihood generation**, especially through convergence with schemes like MGNREGS. It also helps reduce pressure on natural forests by providing alternative sources of fuelwood and fodder.
- However, success depends on **community participation**. Without local ownership, plantations often fail due to neglect or grazing pressures.
- Officers must therefore focus on **institutional strengthening of Gram Panchayats and SHGs**.

Nurseries in Villages: Backbone of Afforestation

- The establishment of **nurseries in almost every village** is one of Telangana's most innovative interventions. These nurseries ensure **decentralized production of saplings**, reducing logistical challenges and promoting species suited to local ecology.
- Village nurseries also generate **employment opportunities**, particularly for women self-help groups. They act as a foundation for large-scale plantation drives.
- However, the real challenge lies in:
- Maintaining quality of saplings
- Ensuring species diversity
- Synchronizing supply with plantation schedules
- For field officers, regular inspection, technical guidance, and linking nurseries with plantation targets are critical.

Nursery Requirement- Components

The requirement of plants for the following components to be worked out and should be raised in bag sizes shown against the component

- Plantation on the sides of the all **Main Roads** of the ULB (10”x16”/14x15 Bags)
- Plantation in all **colony roads** (10”x16” /8”x12”Bags)
- **Central Medians** & **Rotaries** (Trees- 10”x16” Bags , Shrubs- 5”x 9”/6x12” Bags)
- Government **open lands**, Govt & Private institutions (8”x12” Bags)
- **Dump Yards** & Burial grounds (Trees- 10”x16” Bags , Shrubs- 5”x 9” Bags)
- **Layout Roads & open-spaces**, Industrial areas (8”x12” Bags)
- **Tank Bund** & Tank fore shore areas, Farm Bunds & Canal Banks (6”x12” / 8”x12” bags)
- Barren Hills & Community Open lands (8”x12” Bags)
- **Homestead** Distribution (5”x 9” Bags)

The procurement of Bags to be done according to the requirement under each component and to start the nursery accordingly.

Note: For Tall Plants conversion stock should be raised in advance

Success of Raising Nursery

- Arrangement of Infrastructure -Bore well , Tank & pipeline etc
- Timely Nursery Raising- Should start in September every year- Delay will results under height seedlings
- Quality potting mixture- all the components such as Red soil, Tank silt, sand & FYM should be in proportionate as recommended
- Ensure the Red soil is sieved through and of fine quality
- Proper filling of the bags- It should be compact without any gaps
- Proper arrangement of beds- The no of bags should not be excess than recommended. The bed size for smaller bags is 10 m x 1.2 m
- Arrangement of beds should be in E-W direction. Proper gap between beds (at least 60 cms) should be left
- Quality seed- Local seed collection is preferred- Responds well
- Cuttings of plants can also be collected locally for various species and raised in polybags.

Success of Raising Nursery

- It is preferred to raise primary beds with seeds
- Primary stock to be transplanted in time before the stock is over grown in the beds
- Proper watering as per requirement- It should not be excess or less in quantity and watered through Jali.
- Regular weeding in bags & between beds should be done
- Regular pruning of lower & excess shoots from the beginning itself (For boosting the growth)
- Timely and recommended shifting and grading of beds- To ensure uniform growth & Avoid suppression
- Application of Fertilizers & pesticides as per requirement in time
- Direct Seed sowing & transplanting should not done in single bed.

Raising Tall Plants

- The conversion stock (in 5x9 / 6x12 bags) should be healthy
- The plants should be sturdy with well developed stem
- Sufficiently tall
- Should not be Top broken
- Should be straight & upright
- Roots should not be coiled
- While conversion plant to be placed perfectly in the centre of the bigger bag
- Plant with ball of earth shall be placed in such a way that at least 2-3 inches deep from top of the bigger size bag
- Less no of bags in a row along width of the bed are preferred(8”x12’’- 3 or 4 bags in a row & 10’’ x 16’’- 1 or 2 bags in a row and other bigger sizes in single row).**The Lesser the number – More growth**
- Staking to be done for all plants
- All other operations as discussed earlier

2nd World Forum on Urban Forests
Washington DC, 2023

Quality Planting Stock

- Success of Plantations depend on quality nursery stock
- Total 14,864 nurseries are established in the state.

TRADITIONAL NURSERY SITE

Success of Plantations

- Advance Planning & identification of component wise locations
- Advance preparatory works such as pitting etc
- Procurement of healthy & tall planting stock
- Protection measures such as fencing, tree guards etc before planting
- Early & proper Planting so that plant gets advantage of entire rainy season
- Timely & distributed watering on non rainy days
- Watch & ward to take up timely weeding, saucering, pruning and other operations
- Regular Inspections & monitoring of protection & watering

- **Most Important is: For all Avenue Plantations the Plant Height should be of Minimum 2 meters Height & For Block Plantations Minimum Height should be 1 meter, if area is well protected from biotic interference**
- **(Height of plant leaving the bag height).**

TIPS FOR PROPER MAINTAINENCE OF PLANTATIONS:

We should visit & revisit the plants that we have planted last year and previous years under Telanganaku Haritha Haram. Hope all the DDs & Circle Managers of all the zones are taking good care of plants?

A brief on Watering, Weeding, Mulching, Soil-breaking and Protection which are the most neglected parts of tree planting & after care of the plants.

1. Watering: Most crucial for survival and watering should be usually done during morning or evening duly making a saucer of soil around the plant to ensure maximum accumulation. **Frequency once in a 3 or 4 days during summer.** A provision is given in all the estimates accordingly. The watering plants by ensuring quantity (20lts/time) & the frequency of watering at regular intervals is crucial part of survival & growth. Maintenance of log book & water schedule is mandatory.

Pic watering without saucer

Pic is with saucer.

2. Weeding : The removal of unwanted weeds around plants which helps to reduce the competition for food and water between plants and weeds.

Left: Pic without weeding

Right: After weeding.

3.Mulching is putting of organic materials like dried leaves, sawdust, waste papers, composting material etc around the plant which reduces evaporation, prevents soil erosion and maintains moisture and improves the soil.

4. Soil breaking or soil working is done to loosen the soil that gets compact a few days after planting. This helps to provide aeration and improves the water holding capacity and porosity of the soil.

5. Protection of plants is also crucial especially when plants are in open areas and prone to damage by cattle and human beings. Thorny material or iron or plastic material are used as tree guards for protection if they are available. For every plantation under all components, for certain no of plants a protection watcher has been provided in the sanction which should be ensured mandatorily. The watcher should visit the no of plants entrusted to him daily and rectify the stakes, if any plants are bent get them erected, see that no damages are done, any casualties found should get replaced immediately within 24 hrs, pruning of lower branches etc. This is very Important & must ensure against damages.

6. Pruning of lower branches: Called limbing up or raising the crown, this does no harm to the tree and, in fact, replicates what happens in a forested area in the wild. Every time all the lower branches i.e. 1/3rd of height of tree/plant from bottom should be removed carefully without damaging the bark. The tree planted should be free about 1/3 of the lower trunk, leaving the upper 2/3s intact. This is a crown lifting operation which helps the tree to grow, stop spreading the lower branches & improve aesthetics of a tree in urban areas.

Before Pruning

After Pruning

-Additional Commissioner,UBD,GHMC

Telangana Municipal / GHMC/ PR Act- 2019

Specialized Urban Forestry wing & Green Cells

(5) years Green action plan

Green Budget of 10%- **will be obligatory and will be treated as charged provisions in the budget**

One nursery in every ULB/Panchayath to cater the seedlings

Responsibility on Public representatives-the ward member shall be disqualified and removed for less survival of plants

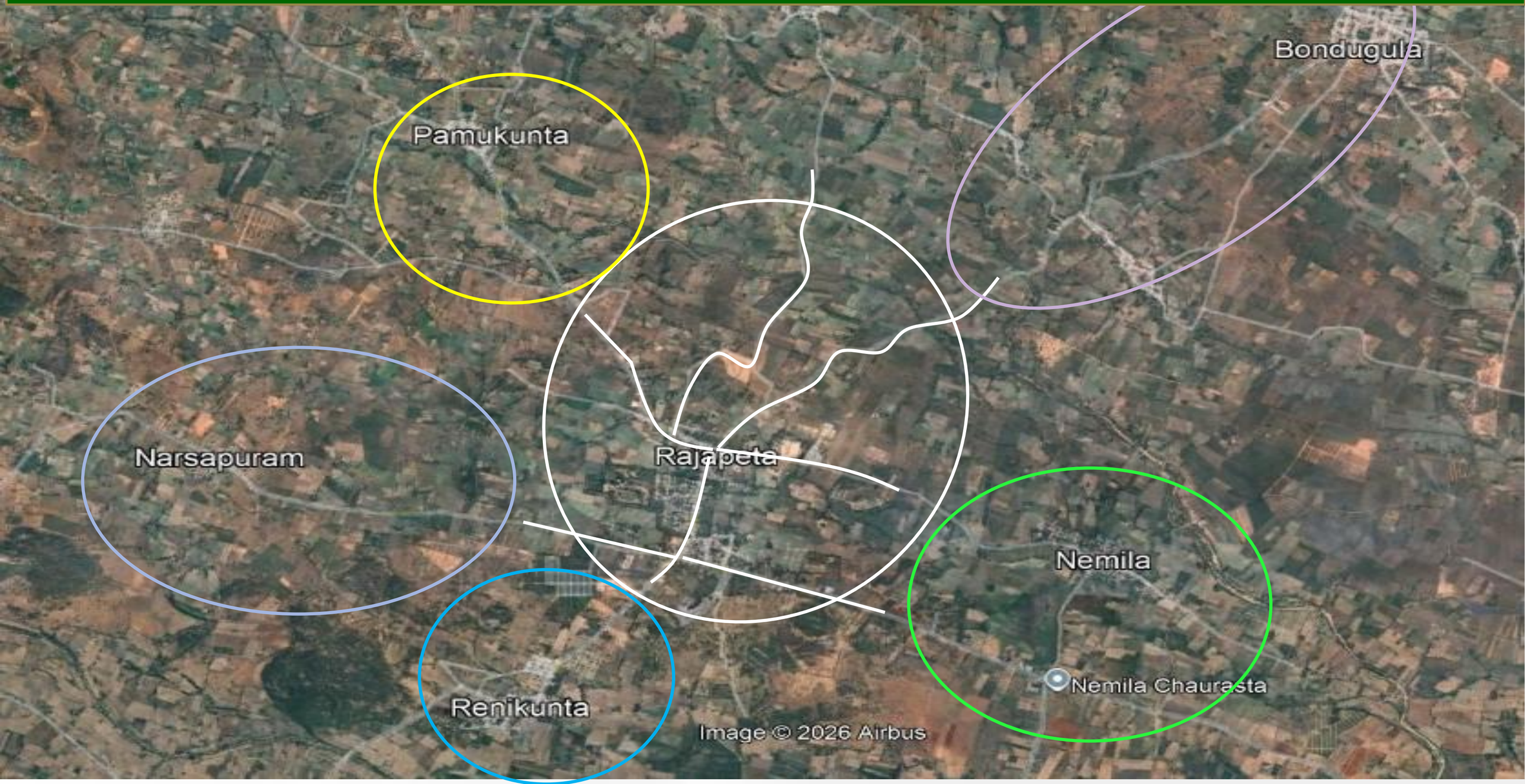
The layout owner shall reserve 10% of the land towards open space for parks

Certain number of trees shall be planted in the open area in the plot where building is being constructed

Telangana Haritha Nidhi

- Contributions from the salaries of employees working for State and Public Representatives
- From students one time at the time of admission
- For all issue & renewal of trade licenses @Rs.1000/- &
- From all work contracts @0.01%.
- Haritha Nidhi was aimed at bringing a sense of participation among citizens of the State

Saturation Greening Plan for Rural Areas & Connecting Villages



- MPDOs play a **critical grassroots role**. They coordinate nursery management, oversee plantation activities, and ensure convergence with employment schemes. Their effectiveness directly influences the success of rural forestry.
- They must focus on:
- Survival rate monitoring , Community mobilization
- Data reporting and geo-tagging

- Other officers like Dy Collectors function at a **strategic and supervisory level**. Their responsibilities include:
- Policy implementation
- Inter-departmental coordination
- Monitoring large-scale projects , Ensuring legal compliance

- **Their leadership determines whether greening efforts remain symbolic or become transformative.**

FOREST WITHIN THE CITY
CITY WITHIN THE FOREST

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