

7.8 GUJARAT

7.8.1 Introduction

Gujarat is situated on the western coast of the country having longest coastline. It lies between latitude 20°07' to 24°43' N and longitude 68°10' to 74°29' E. The geographical area of the State is 196,022 km², which constitutes 5.96% of the country's geographical area. Physiographically the State can be divided into three distinct regions viz. the peninsula, traditionally known as Saurashtra, which is essentially a hilly tract sprinkled with low hills; Kutchh on the north-west which is barren and contains the famous Rann of Kutchh, and the mainland extending from the Rann of Kutchh and the Aravalli hills to the river Damanganga which consists of plain of alluvial soil. The Sabarmati, Mahi, Narmada and Tapi are the four major rivers of Gujarat.

The climate of Gujarat is moderate with mean temperature ranging from 25°C to 27.5°C. The average annual rainfall between 800 to 1000 mm. The land use pattern of State is shown in Table 7.8.1.

The total population of the State is 50.67 million (Census 2001). Rural population is 62.64% and urban is 37.36%; the Scheduled Tribes constitute 14.8% of the population mainly distributed over 8 districts. The population density is 258 persons per km². The projected population of the State by the Office of RGI, for the year 2009 is 57.43 million. The livestock population is 21.66 million (Livestock Census 2003), which has increased by about 16% since the census of 1992.

Table 7.8.1: Land use pattern

Land Use	Area in '000 ha	Percentage
Total geographical area	19,602	
Reporting area for land utilization	18,868	100.00
Forests	1,854	9.83
Not available for cultivation	3,752	19.89
Permanent pastures and other grazing lands	850	4.50
Land under misc. tree crops & groves	4	0.02
Culturable wasteland	1,977	10.48
Fallow lands other than current fallows	11	0.06
Current fallows	568	3.01
Net area sown	9,852	52.22

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2006.

7.8.2 Recorded Forest Area

The recorded forest area in the State is 18,927 km², which is 9.66% of the geographic area. Reserved, Protected and Unclassed Forests constitute 74.61%, 2.53% and 22.86% of the total forest area respectively.

7.8.3 Protected Areas

The State has 4 National Parks and 24 Wildlife Sanctuaries covering an area of 480 km² and 16,847 km² respectively. Thus a total area of 17,327 km² constituting 8.84% of the geographical area of the State is under protected area network.

Gir forests in Saurashtra are abode of world-famous Asiatic lions. Nalsarovar is a wetland of national importance and covers an area of 18,400 ha.

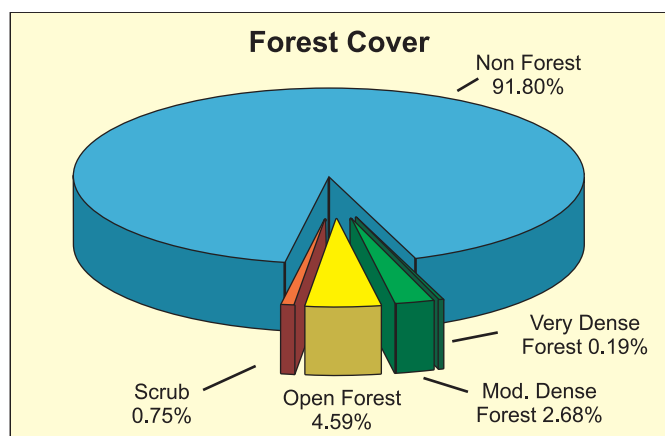
7.8.4 Joint Forest Management

There are 1,734 JFM committees managing 0.24 million ha of forest area after Joint Forest Management began in the State in 1991. The number of JFM committee members is 0.81 million. The total number of families involved in JFM is 0.2 million, of these 0.14 million families belong to Scheduled Tribes.

Source: MoEF, 2005.

7.8.5 Forest Cover

The forest cover in the State, based on



interpretation of satellite data of Oct - Dec 2006, is 14,620 km², which is 7.46% of the State's geographical area. In terms of forest canopy density classes, the State has 376 km² very dense forest, 5,249 km² moderately dense forest and 8,995 km² open forest. The distribution of forest cover of the State is shown in Fig.7.8.

Comparison of the current forest cover

(satellite data of Oct - Dec 2006) with the previous assessment (satellite data of Oct - Dec 2004) shows a gain of 16 km² of forest cover.

The change matrix, given in Table 7.8.2, reveals that there has been an increase of 86 km² in open forest whereas decrease of 70 km² in the moderately dense forest.

On the basis of ground truthing by the officials of FSI and the information gathered from the State Forest Department, main reason for the increase in forest cover in the districts Ahmedabad, Bharuch, Jamnagar and Kuchchh is mangrove plantations. The reason for decrease in forest cover in Narmada, Navsari, Surat and Valsad districts is removal of trees by villagers.

District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment are given in the Table 7.8.3.

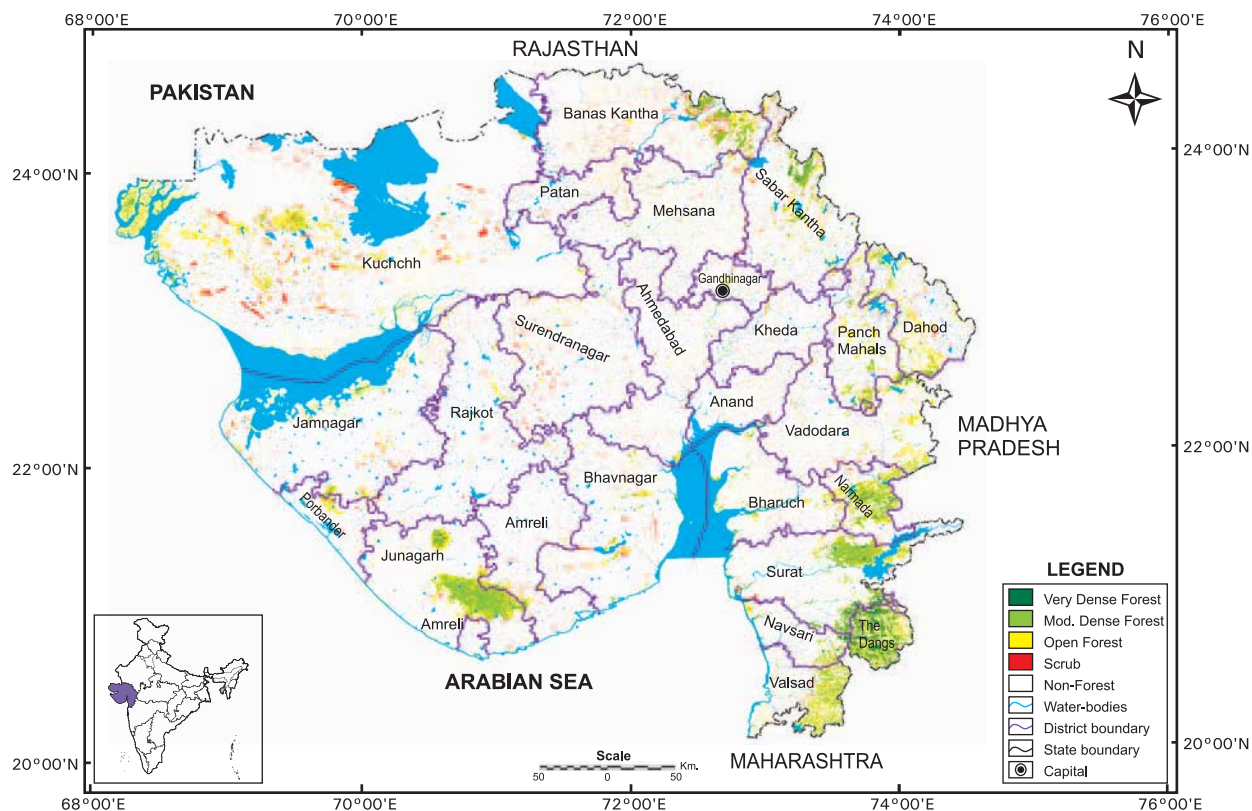


Fig 7.8 : Forest cover map of Gujarat

Table 7.8.2: Forest cover change matrix

(area in km²)

2005 Assessment (Data of Oct- Dec 2004)	2007 (Data of Oct - Dec 2006)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	376	0	0	0	0	376
Moderately Dense Forest	0	5,064	122	9	124	5,319
Open Forest	0	75	8,397	41	396	8,909
Scrub	0	0	44	1,270	105	1,419
Non-Forest	0	110	432	143	179,314	179,999
Total of 2007	376	5,249	8,995	1,463	179,939	196,022
Net Change	0	-70	86	44	-60	

Table 7.8.3: District-wise forest cover in 2007

Number of districts: 25

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Ahmedabad	8,707	0	15	128	143	1.64	6	17
Amreli	6,760	0	63	167	230	3.40	6	36
Anand	3,214	0	19	36	55	1.71	-2	4
Banas Kantha ^T	9,858	0	371	473	844	8.56	3	184
Bharuch ^T	6,458	0	85	234	319	4.94	3	3
Bhavnagar	11,155	0	54	226	280	2.51	1	75
Dahod	4,405	1	163	538	702	15.94	-1	35
Gandhinagar	649	0	6	36	42	6.47	0	2
Jamnagar	14,125	0	54	360	414	2.93	22	64
Junagarh	8,281	15	952	633	1,600	19.32	6	24
Kuchchh	45,652	0	312	1,999	2,311	5.06	7	571
Kheda	3,980	0	21	74	95	2.39	1	16
Mehsana	8,540	0	19	196	215	2.52	-2	51
Narmada	2,580	20	465	474	959	37.17	-11	19
Navsari	2,215	18	125	147	290	13.09	-4	6
Panch Mahals ^T	4,461	0	176	394	570	12.78	4	35
Patan	3,332	0	4	79	83	2.49	-4	24
Porbandar	2,326	0	16	104	120	5.16	-2	16
Rajkot	11,203	0	4	137	141	1.26	-2	29
Sabar Kantha ^T	7,390	29	305	468	802	10.85	0	90
Surat ^T	7,657	84	778	445	1,307	17.07	-9	26
Surendranagar	10,489	0	8	165	173	1.65	3	92
The Dangs ^T	1,762	209	745	414	1,368	77.64	-2	3
Vadodara ^T	7,794	0	144	479	623	7.99	0	27
Valsad ^T	3,029	0	345	589	934	30.84	-7	14
Total	196,022	376	5,249	8,995	14,620	7.46	16	1,463

* Change compared to 2005 assessment (revised).

7.8.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.8.4.

Table 7.8.4: Altitude zone wise forest cover

(area in km²)

Altitude Zone	VDF	MDF	OF	Total
0-500m	332	4,902	8,786	14,020
500-1000m	44	346	208	598
1000-2000m	0	1	1	2
Total	376	5,249	8,995	14,620

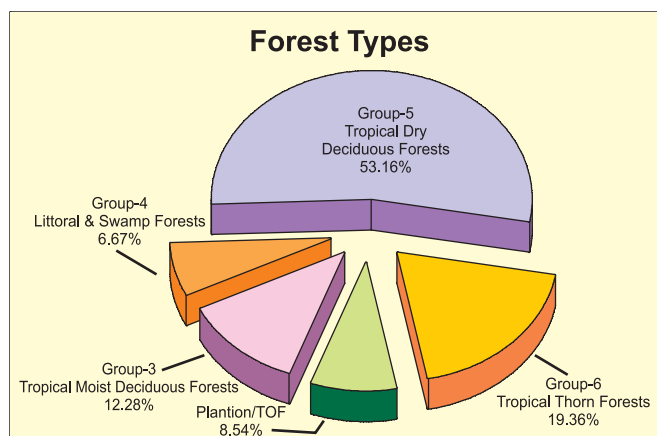
(based on SRTM Digital Elevation Model)

7.8.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 23 forest types which belong to 4 forest type groups viz Tropical Moist Deciduous, Littoral & Swamp, Tropical Dry Deciduous and Tropical Thorn Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.

7.8.8 Tree Cover

Tree cover of the State has been estimated using sample data of TOF inventory collected over a period of six years i.e. 2002-08. The estimated tree cover in the State is 8,390 km² which is 4.28% of the geographical area of the State. Ten districts of the State (Bhavnagar, The Dangs, Gandhinagar, Jamnagar,



Kuchchh, Narmada, Porbandar, Rajkot, Surendra Nagar and Vadodara) have been inventoried. The forest and tree cover of the State is presented in the Table 7.8.5.

Table 7.8.5: Forest & tree cover

(area in km²)

Category	Area	% of Geographical area
Tree Cover	8,390	4.28
Forest Cover	14,620	7.46
Forest & Tree Cover	23,010	11.74