

7.2 ARUNACHAL PRADESH

7.2.1 Introduction

Arunachal Pradesh is the largest State in the North-East region of the country, sharing international boundaries with Bhutan, China, Tibet and Myanmar. It lies between latitude 26° 28' to 29°30' N and longitude 91°30' to 97°30' E having geographical area of 83,743 km² which constitutes 2.54% of the total area of the country. Major rivers of the State are Kameng, Subansiri, Siang, Lohit and Tirap.

Climate of the State varies from temperate in the northern part to warm and humid in the southern part with average annual rainfall ranging from 2,000 mm to 8,000 mm. The temperature in the State ranges from below zero to 31°C. The land use pattern of the State is shown in Table 7.2.1.

About 91% of the reported area is covered by forests, thus making forestry the most important land use. Of the total geographical area, about 12% is under permanent snow cover and glaciers.

The total population of the State is 1.10 million (Census 2001). Of this, 79.25% is rural and 20.75% is urban. The population density is 14 persons km². About 64.2% people belong to Scheduled Tribes. The livestock population is 1.26 million (Livestock Census 2003), which has increased by about 50% since the census of 1992. The projected population of the State for 2009 (Office of RGI) is 1.21 million.

Table 7.2.1: Land use pattern

Land Use	Area in '000 ha	Percentage
Total geographical area	8,374	
Reporting area for land utilization	5,659	100.00
Forests	5,154	91.08
Not available for cultivation	65	1.15
Permanent pastures and other grazing lands	18	0.32
Land under misc. tree crops & groves	37	0.65
Culturable wasteland	67	1.18
Fallow lands other than current fallows	73	1.29
Current fallows	37	0.65
Net area sown	209	3.69

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

7.2.2 Recorded Forest Area

The recorded forest area in the State is 5.15 million ha which is 61.55% of its geographical area. Reserved Forests, Protected Forests and Unclassed Forests constitute 20.46%, 18.49% and 61.05% of the total forest area respectively. Of the total forest area, 5.138 million ha is State-owned and only 15,500 ha is under private ownership.

7.2.3 Protected Areas

There are 2 National Parks and 11 Wildlife Sanctuaries in the State covering an area of 0.23 million ha and 0.75 million ha respectively. The protected areas constitute 11.68% of the geographical area of the State. Arunachal Pradesh has two Tiger Reserves (Namdapha and Pakhui) covering 2,847 km². The Dehang-Dibang valley, with an area of 5,112 km², has been declared as a Biosphere Reserve.

7.2.4 Joint Forest Management

Joint Forest Management was introduced in the State in 1997. There are 347 JFM committees which manage about 90,000 ha of forest area. The total population involved in JFM activity is 23,308, all of which belongs to the Scheduled Tribes. Reserved Forests are not covered under JFM in the State.

Source: MoEF, 2005.

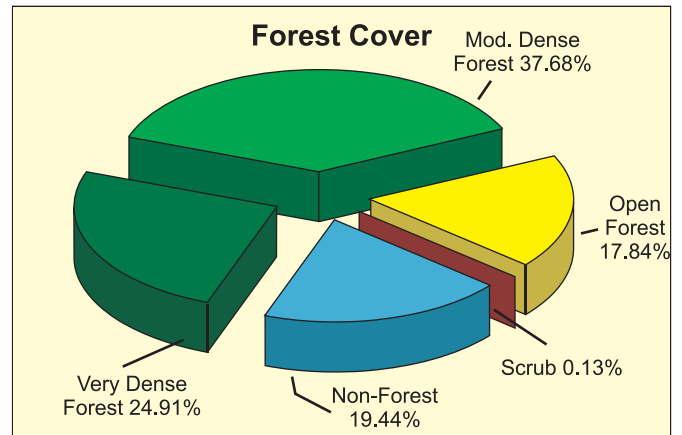
7.2.5 Forest Cover

The forest cover in the State, based on interpretation of satellite data of Nov 2006 - Jan 2007, is 67,353 km², which is 80.43% of the State's geographical area. In terms of forest canopy density classes, the State has 20,858 km² very dense forest, 31,556 km² moderately dense forest, and 14,939 km² open forest. The distribution of forest cover of the State is shown in Fig.7.2.

Comparison of the current forest cover (satellite data of Nov 2006 - Jan 2007) with the previous assessment (data of Nov - Dec 2004 & Feb 2005) shows a loss of 119 km² of forest cover.

The change matrix, given in Table 7.2.2 reveals that there has been a decrease of 1 km² in very dense forest, 76 km² in the moderately dense forest and 42 km² in open forest.

On the basis of ground truthing by the officials of FSI and the information gathered from the State Forest Department, main reasons for the decrease in



forest cover in the State are shifting cultivation and biotic pressure.

The State at present has 16 districts but the boundaries of the 3 newly carved out districts are not available. Hence, the data of the State is presented for 13 erstwhile districts. District wise forest cover in different canopy density classes and scrub along with the changes compared to 2005 assessment are given in the Table 7.2.3. Excepting Tirap, no other district has any significant change.

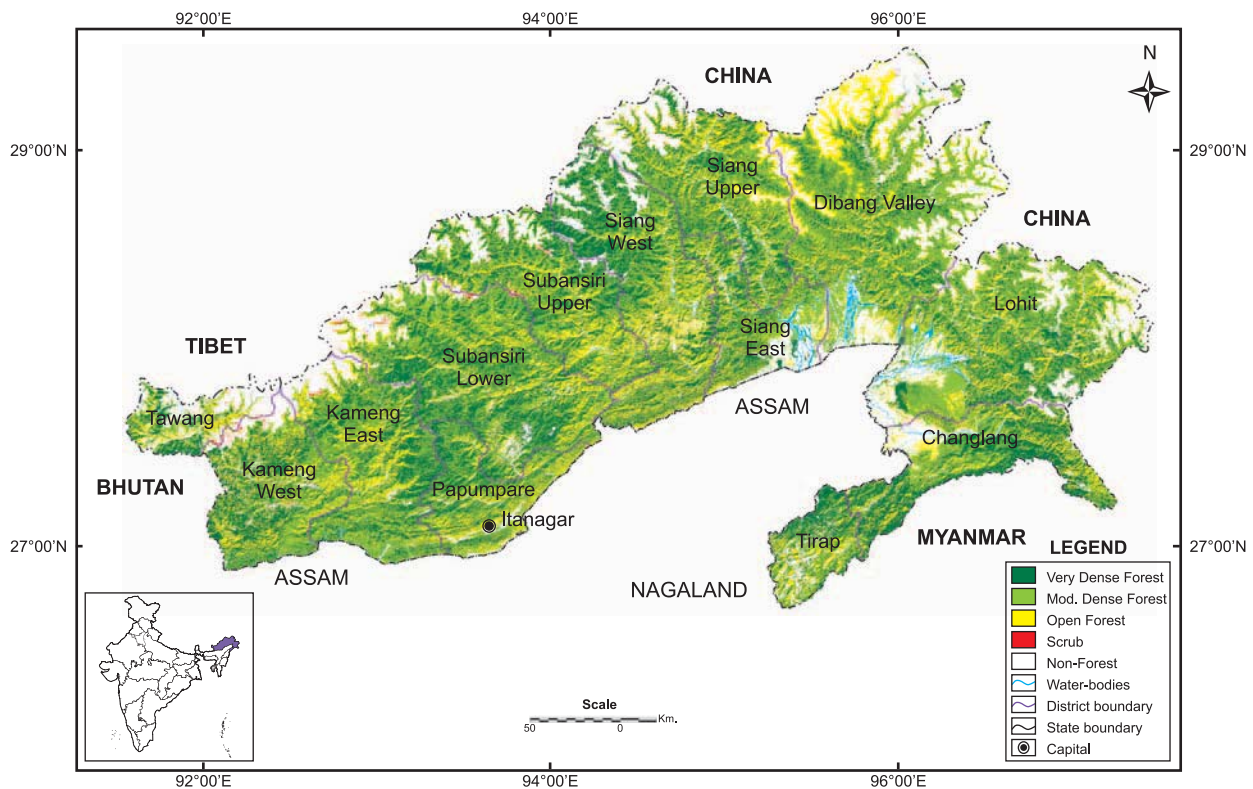


Fig 7.2 : Forest cover map of Arunachal Pradesh

Table 7.2.2: Forest cover change matrix

(area in km²)

2005 Assessment (Data of Nov-Dec 2004 & Feb 2005)	2007 (Data of Nov 2006 - Jan 2007)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	20,845	0	0	0	14	20,859
Moderately Dense Forest	0	31,516	0	0	116	31,632
Open Forest	0	0	14,876	0	105	14,981
Scrub	0	0	0	111	0	111
Non-Forest	13	40	63	0	16,044	16,160
Total of 2007	20,858	31,556	14,939	111	16,279	83,743
Net Change	-1	-76	-42	0	119	

Table 7.2.3: District-wise forest cover in 2007

Number of districts: 13

(area in km²)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	% of G.A.	Change*	Scrub
Changlang TH	4,662	1,864	1,460	931	4,255	91.27	0	0
Dibang Valley TH	13,029	1,696	4,999	2,622	9,317	71.51	-12	5
Kameng East TH & Kameng West TH	11,556	3,420	4,648	2,192	10,260	88.79	6	35
Lohit TH	11,402	1,966	4,040	1,625	7,631	66.93	-7	0
Popumpare TH	3,462	990	1,556	703	3,249	93.85	-11	0
Siang East TH	3,655	884	1,281	637	2,802	76.66	-9	0
Siang Upper TH	7,050	1,639	2,633	1,325	5,597	79.39	-10	2
Siang West TH	7,813	2,477	2,741	1,501	6,719	86.00	-9	0
Subansiri Lower TH	9,548	3,001	4,250	1,424	8,675	90.86	-5	28
Subansiri Upper TH	7,032	1,876	2,749	1,185	5,810	82.62	-11	25
Tawang TH	2,172	366	484	375	1,225	56.40	0	16
Tirap TH	2,362	679	715	419	1,813	76.76	-51	0
Total	83,743	20,858	31,556	14,939	67,353	80.43	-119	111

* Change compared to 2005 assessment (revised).

7.2.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.2.4.

Table 7.2.4: Altitude zone wise forest cover

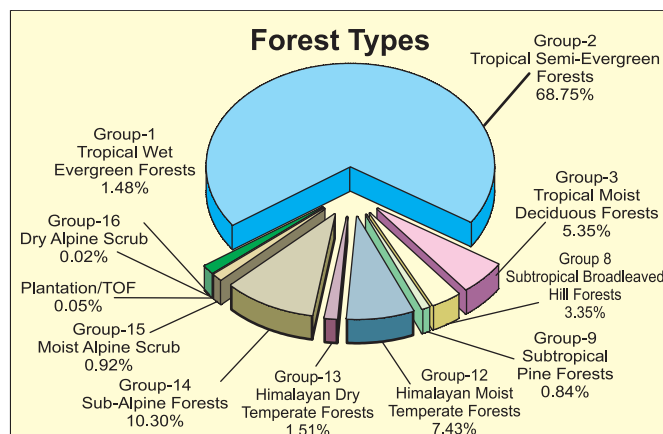
(area in km²)

Altitude Zone	VDF	MDF	OF	Total
0-500m	1,553	3,685	2,086	7,324
500-1000m	2,839	4,233	3,216	10,288
1000-2000m	7,812	10,297	4,508	22,617
2000-3000m	6,453	9,008	1,737	17,198
>3000m	2,201	4,333	3,392	9,926
Total	20,858	31,556	14,939	67,353

(based on SRTM Digital Elevation Model)

7.2.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 16 forest types which belong to 10 forest type groups viz. Tropical Wet Evergreen, Tropical Semi Evergreen, Tropical Moist Deciduous, Subtropical Broadleaved Hill, Subtropical Pine, Himalayan Moist Temperate, Himalayan Dry Temperate, Sub Alpine Forests, Moist Alpine Scrub and Dry Alpine Scrub. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.



7.2.8 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 592 km² which is 0.71 % of the

geographical area of the State. Five districts of the State (Dibang Valley, Siang East , Papumpare, Tawang and Kameng West) have been inventoried. The forest and tree cover of the State is presented in the Table 7.2.5.

Table 7.2.5: Forest & tree cover

(area in km²)

Category	Area	% of Geographical area
Tree Cover	592	0.71
Forest Cover	67,353	80.43
Forest & Tree Cover	67,945	81.14