

8.2 ARUNACHAL PRADESH

8.2.1 Introduction

Arunachal Pradesh is located in the North-East region of the country sharing international boundaries with Bhutan, China, Tibet and Myanmar. It lies between lat 26° 28' to 29°30' N and long 91°30' to 97°30' E having geographic area of 8.37 million ha which constitutes 2.54% of the total area of the country. The State, forming part of the Eastern Himalaya slopes down to the plains of Assam. Kameng, Subansiri, Siang, Lohit, and Tirap rivers divide the State into five valleys.

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 8.2a.

About 94% of the reported area is covered by forests, thus making forestry as the most important land use. Of the total geographic area about 12% is under permanent snow cover and glaciers.

The total population of the State is 1.10 million (*Census 2001*), comprising of 79.25% rural and 20.75% urban. The population density is 13 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.

8.2.2 Forest Resources

The recorded forest area is 51,540 km² constituting 61.55% of the total geographic area of the State. Out of

this Reserved Forests constitute 20.46%, Protected Forests 18.49% and Unclassed Forests 61.05%. Of the total forest area, 51,380 km² is State-owned and only 15,500 ha is under private ownership.

The four major forest types occurring in the State are Tropical Wet Evergreen Forest, Sub-Tropical Pine Forest, Montane Wet Temperate Forest and Sub-Alpine/Alpine Forest.

8.2.3 Protected Areas

A total of 0.99 million ha of the forest area constituting 11.82% of the geographic area is under two National Parks (2,290.82 km²) and 11 Wildlife Sanctuaries (7,606.37 km²). Arunachal Pradesh has two Tiger Reserves (Namdapha and Pakhui) covering 2,847 km². The Dehang-Dibang valley, with an area of 5,111.50 km², has been declared as a Biosphere Reserve.

8.2.4 Joint Forest Management

Joint Forest Management began in the State in 1997. There are 347 JFM committees managing 90,000 ha of Forest Area as on March 2005. The total population involved in JFM activity is 23,308, all of which belong to the Scheduled Tribes. Private and Reserved Forests are not covered under JFM in the State.

Source: Proceedings of the National Workshop on JFM, MoEF, 2005.

8.2.5 Forest Cover

The forest cover of the State, based on satellite data of November-December 2004 and February 2005, is

Table 8.2a: Land use pattern

| Land Use | Area in '000 ha | Percentage |
|--|-----------------|------------|
| Total geographical area | 8,374 | |
| Reporting area for land utilization | 5,498 | 100.00 |
| Forests | 5,154 | 93.74 |
| Not available for cultivation | 26 | 0.47 |
| Permanent pastures and other grazing lands | 4 | 0.07 |
| Land under misc. tree crops & groves | 36 | 0.65 |
| Culturable wasteland | 37 | 0.67 |
| Fallow lands other than current fallows | 47 | 0.85 |
| Current Fallows | 30 | 0.55 |
| Net area sown (As per Agricultural census 1995-96 except total cropped area) | 164 | 2.98 |

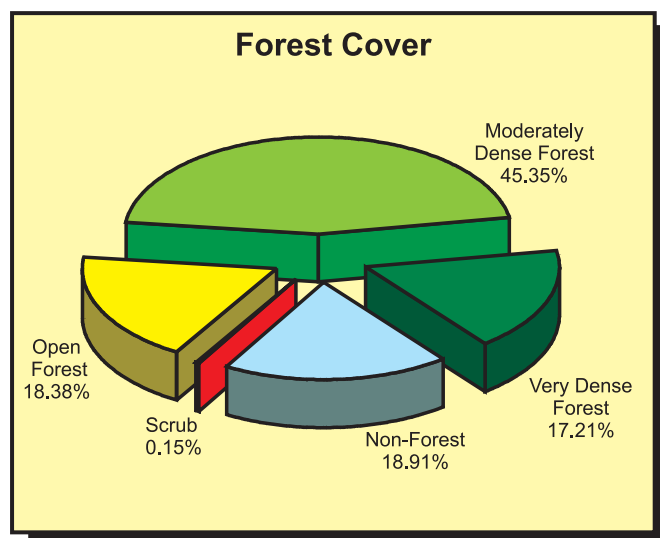
Source: Land Use Statistics, Ministry of Agriculture, GOI, 2005.

67,777 km², which constitutes 80.93 % of the geographic area. Very dense forest is 14,411 km², moderately dense forest, 37,977 km², and open forest, 15,389 km². About one fourth of the very dense forests of the country exist in this State. The forest cover of the State is shown in Fig. 8.2.

A gain of 85 km² has been recorded in the present assessment as compared to the previous assessment (based on satellite data of November-December 2002 and January-February 2003).

The change matrix, given in Table 8.2b reveals that there has been a decrease of 34 km² in very dense forests and 107 km² in moderately dense forests. An increase of 226 km² in open forest has been observed. Scrub has also increased by 12 km².

The increase in forest cover is mainly due to the regrowth in shifting cultivation areas in the districts of Lohit, Changlang, Kameng East, Papumpare, Siang Upper, Siang West, Subansiri Lower, Subansiri Upper, and Tirap as observed by the FSI officials during ground verification. In addition, plantations of khair and sissoo in Lohit district has also resulted in increase in forest cover.



The district-wise extent of very dense forest, moderately dense forest, open forest, and scrub is given in Table 8.2c along with changes compared to 2003 assessment. Though the State at present has 16 districts, the boundaries of the 3 newly carved out districts are not available hence the data of the State is presented for 13 erstwhile districts.

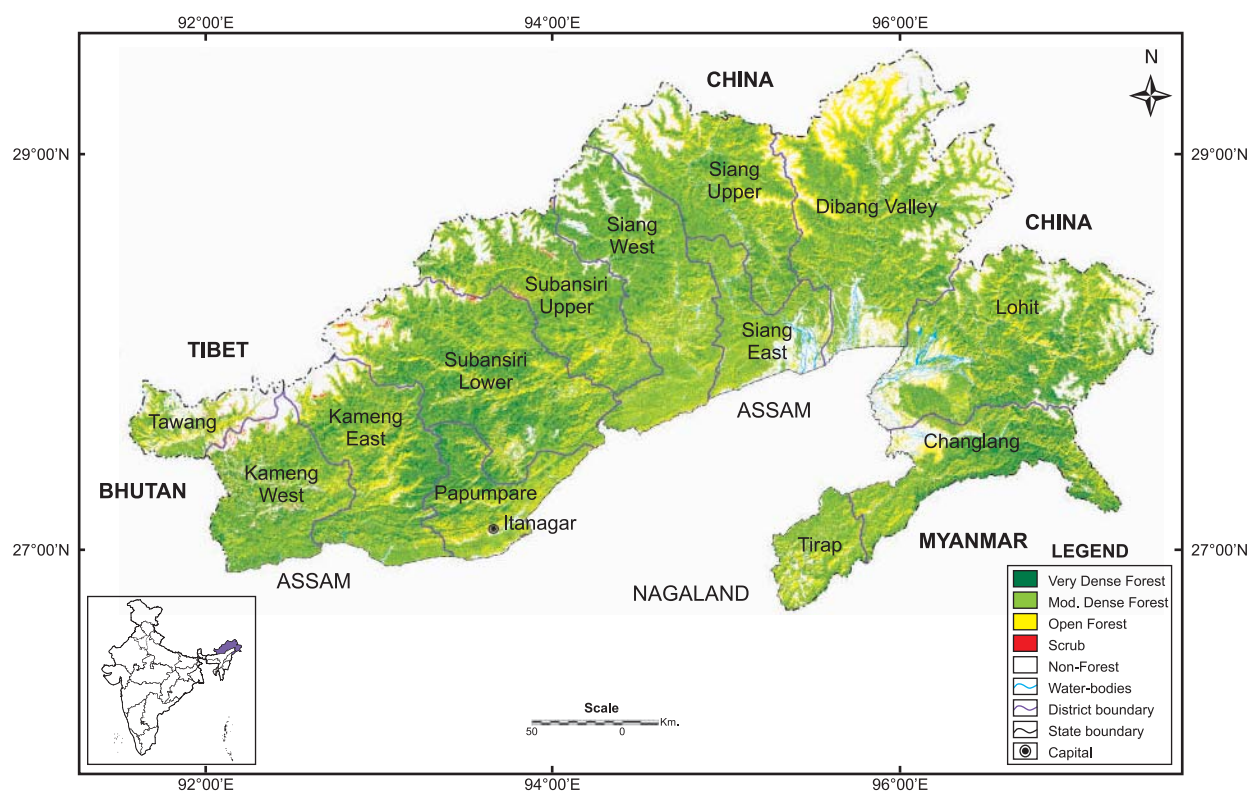


Fig 8.2 : Forest Cover Map of Arunachal Pradesh

Table 8.2b: Forest cover change matrix

(area in km²)

| 2003 Assessment (Data of Nov.-Dec. 2002 & Jan.-Feb. 2003) | 2005 Assessment (Data of Nov.-Dec. 2004 & Feb. 2005) | | | | | Total 2003 |
|---|---|---------------|---------------|------------|---------------|---------------|
| | VDF | MDF | OF | Scrub | NF | |
| Very Dense Forest | 14,411 | 23 | 2 | 0 | 9 | 14,445 |
| Moderately Dense Forest | 0 | 37,939 | 53 | 0 | 92 | 38,084 |
| Open Forest | 0 | 15 | 14,993 | 0 | 155 | 15,163 |
| Scrub | 0 | 0 | 1 | 108 | 7 | 116 |
| Non Forest | 0 | 0 | 340 | 20 | 15,575 | 15,935 |
| Total 2005 | 14,411 | 37,977 | 15,389 | 128 | 15,838 | 83,743 |
| Net Change | -34 | -107 | 226 | 12 | -97 | |

Table 8.2c: District-wise forest cover

Number of Districts: 13

(area in km²)

| District | Geographic area | 2005 Assessment | | | | Percent of G.A. | Change | Scrub |
|---|-----------------|-------------------|-------------------|---------------|---------------|-----------------|-----------|------------|
| | | Very dense forest | Mod. dense forest | Open forest | Total | | | |
| Changlang TH | 4,662 | 1,610 | 1,657 | 1,014 | 4,281 | 91.83 | 11 | 0 |
| Dibang Valley TH | 13,029 | 1,278 | 5,234 | 2,855 | 9,367 | 71.89 | -3 | 6 |
| Kameng East TH & Kameng West TH | 11,556 | 2,499 | 5,506 | 2,146 | 10,151 | 87.84 | -30 | 43 |
| Lohit TH | 11,402 | 1,750 | 4,059 | 1,964 | 7,773 | 68.17 | 16 | 0 |
| Popumpare TH | 3,462 | 763 | 1,701 | 823 | 3,287 | 94.95 | 11 | 0 |
| Siang East TH | 3,655 | 544 | 1,744 | 553 | 2,841 | 77.73 | -5 | 0 |
| Siang Upper TH | 7,050 | 939 | 3,428 | 1,260 | 5,627 | 79.82 | 7 | 3 |
| Siang West TH | 7,813 | 1,057 | 4,687 | 1,047 | 6,791 | 86.92 | 6 | 0 |
| Subansiri Lower TH | 9,548 | 2,266 | 4,805 | 1,646 | 8,717 | 91.30 | 21 | 29 |
| Subansiri Upper TH | 7,032 | 1,153 | 3,482 | 1,182 | 5,817 | 82.72 | 25 | 29 |
| Tawang TH | 2,172 | 78 | 721 | 419 | 1,218 | 56.08 | -2 | 18 |
| Tirap TH | 2,362 | 474 | 953 | 480 | 1,907 | 80.74 | 28 | 0 |
| Total | 83,743 | 14,411 | 37,977 | 15,389 | 67,777 | 80.93 | 85 | 128 |

8.2.6 Tree Cover

Tree cover of Arunachal Pradesh has been estimated following a sampling based approach. A separate exercise was carried out where high resolution satellite data (5.8m) was used for identification of tree patches for field inventory. Field inventory has been carried out on 310

sample plots spread over 4 districts of the State between 2002-06 and the estimated tree cover in the State is 446 km². Being a forest rich State, there is limited scope of expanding tree cover outside the forest areas.

The forest and tree cover of the State is presented in the Table 8.2d.

Table 8.2d: Forest & tree cover

(area in km²)

| Category | Area | % of Geographical Area |
|--------------------------------|---------------|------------------------|
| Tree Cover | 446 | 0.53 |
| Forest Cover | 67,777 | 80.93 |
| Forest & Tree Cover | 68,223 | 81.46 |