



Arunachal Pradesh

9.2.1 Introduction

Arunachal Pradesh covering an geographical area of 83,743 sq km is the largest state in the North-Eastern region of the country which constitutes 2.55 % of the total area of the country. Physiographically, the state can be divided into three zones namely lower hills, lesser Himalayan range and the Great Himalayan range. The state has temperate climate in the northern part and warm-humid in the southern part. 31°C. Major Rivers of the state are Kameng, Subansiri, Siang, Lohit and Dibang. The State has 16 districts and all are hilly as well as tribal districts. As per Census, 2011, the total population of the state is 1.38 million which is 0.11% of the country's population. Proportion of rural and urban population is 77.06% and 22.94% respectively with a density of 17 persons per sq km. The 19th Livestock census, 2012 has reported a livestock population of 1.41 million.

Table 9.2.1 Land Use Pattern

Land Use Types	Area (in 000' ha)	Percentage
Total Geographical Area	8,374	
Reporting area for land utilization	7,239	100
Forests	6,732	93.01
Not available for cultivation	64	0.88
Permanent pastures and other grazing lands	18	0.25
Land under Misc. Tree crops and groves	35	0.48
Culturable wasteland	63	0.87
Fallow lands other than current fallows	65	0.90
Current fallows	36	0.50
Net area sown	225	3.11

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2013-14.

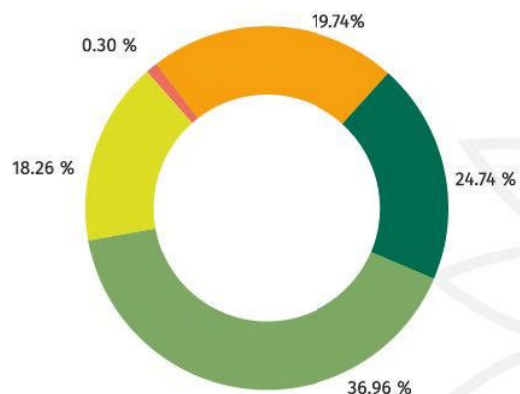
9.2.2

Forest Cover

Based on interpretation of satellite data pertaining to Oct - Dec 2015, the forest cover in the State is 66,964 sq km which is 79.96% of the State's geographical area. In terms of forest canopy density classes, the state has 20,721 sq km under very dense forest, 30,955 sq km under moderately dense forest and 15,288 sq km under open forest.



INDIA
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2017



Forest cover of Arunachal Pradesh

Pie Chart showing forest cover of Arunachal Pradesh



9.2.3

Forest Cover within and outside Green Wash Area

The State has reported a recorded forest area of 51,407 sq km which is 61.39% of the Geographic area of the State. The Reserved, Protected and Unclassed Forests are 20.60%, 19.02% and 60.38% respectively, of the recorded forest area. Due to non-availability of digitized boundary of recorded forest area from the State, the updated green wash area which is 64,045 sq km has been used and the analysis of forest cover within and outside this area is depicted below.

Table 9.2.2 Forest Cover within and outside Green Wash

Forest Cover within Green Wash (Area in sq km)	
Very Dense Forest (VDF)	19,095
Moderately Dense Forest (MDF)	27,629
Open Forest (OF)	11,876
Total	58,600
Forest Cover outside Green Wash	
Very Dense Forest	1,626
Moderately Dense Forest	3,326
Open Forest	3,412
Total	8,364
Total Forest Cover	66,964
Tree Cover	807
Total Forest & Tree Cover	67,771
Of State's Geographical Area	80.93 %
Of India's Forest & Tree Cover	8.45 %
Per capita Forest & Tree Cover	4.91 ha

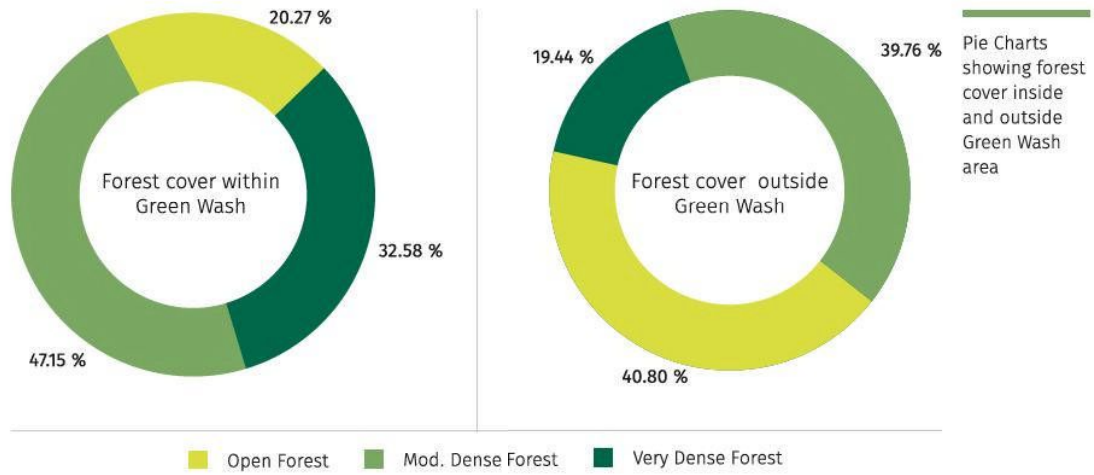


Table 9.2.3 Altitude-wise Forest Cover (Area in sq km)

Altitude Zone(m)	Geographical Area	VDF	MDF	OF	Total
0 - 500	11,136	1,486	3,394	2,354	7,234
500 - 1000	11,082	2,721	4,101	3,448	10,270
1000 - 2000	23,752	7,785	10,139	4,517	22,441
2000 - 3000	17,965	6,505	9,001	1,686	17,192
3000 - 4000	13,370	2,170	4,083	2,856	9,109
> 4000	6,438	54	237	427	718
Total	83,743	20,721	30,955	15,288	66,964

(Based on SRTM, Digital Elevation Model)

Table 9.2.4 Forest Cover in different Patch Size Classes

S. No.	Patch Size Range(sq km)	No. of Patches	Area (sq km)	%age
1	≥ 0.01 ≤ 1.0	30,524	2,019	3.02
2	> 1.0 ≤ 10	509	1,500	2.24
3	> 10 ≤ 100	51	1,470	2.19
4	> 100 ≤ 500	2	846	1.26
5	> 500 ≤ 1000	1	585	0.87
6	> 1000 ≤ 5000	2	3,070	4.59
7	> 5000 ≤ 10000	0	0	0.00
8	> 10000	2	57,474	85.83
	Total	31,091	66,964	100

Table 9.2.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	420.793 m cum	9.97
Growing Stock in TOF	90.695 m cum	5.66
Potential Production of industrial wood from TOF	0.79 m cum	1.06
Bamboo bearing area within forest area of the state	1,5125 sq km	9.64
Total number of culms	4,048 millions	14.40
Total green weight equivalent of culms	18,863 (000' tonnes)	9.99

9.2.4

Carbon Stock in forest

The total Carbon stock of forests in the State is 994.539 million tonnes (3646.643 million tonnes of Co₂ equivalent) which is 14.04 % of total forest carbon of the country.

9.2.5

Decadal Change in water bodies within Forest

A decrease of 195 sq km has been observed in the water body coverage within Forest compared to 2005. The graphical and tabular comparison is depicted below.

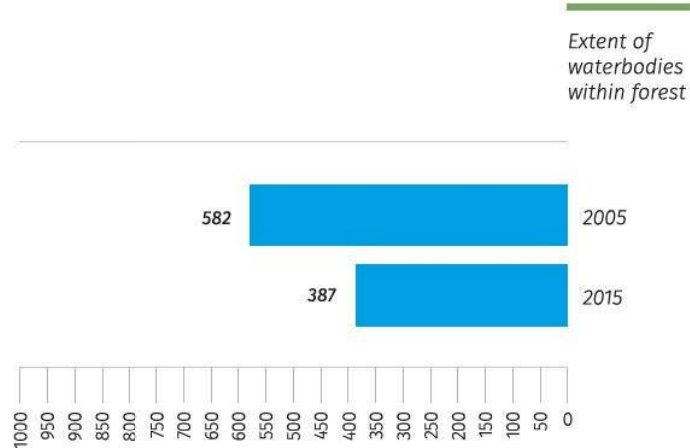


Table 9.2.6 Water bodies within Forest for the years 2005 and 2015

Area/Coverage	2005	2015
Extent of water bodies (sq km) within Forest	582	387
% of water bodies to Forest Cover	0.86	0.58

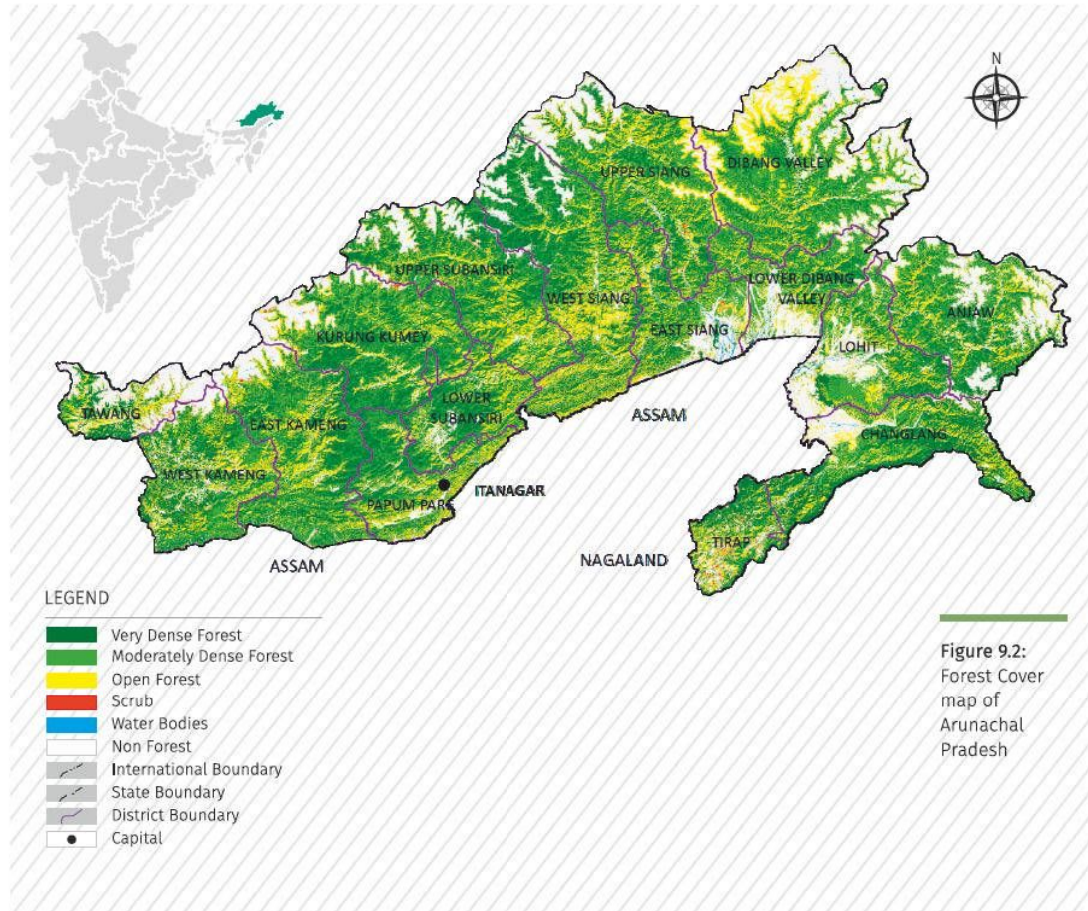


Figure 9.2:
Forest Cover
map of
Arunachal
Pradesh

Table 9.2.7 District- wise Forest Cover						(area in sq km)			
District	Geo-graphical Area	2017 Assessment			Total	% of GA Change*	Scrub		
		Very Dense Forest	Mod. Dense Forest	Open Forest					
Changlang TH	4,662	1,754	1,372	866	3,992	85.63	-30	5	
DibangValley TH & Lower DibangValley TH	13,029	1,691	4,925	2,616	9,232	70.86	-35	8	
East Kameng TH & West Kameng TH	11,556	3,433	4,667	2,178	10,278	88.94	-96	29	
East Siang TH	3,603	881	1,268	731	2,880	79.93	6	10	
KurungKumey TH & Lower Subansiri TH	9,548	2,943	4,060	1,379	8,382	87.79	-20	29	
Lohit TH & Anjaw TH	11,402	1,978	3,981	1,642	7,601	66.66	-24	12	
Papum Pare TH	3,462	966	1,509	716	3,191	92.17	-20	3	
Tawang TH	2,172	341	448	388	1,177	54.19	-19	28	
Tirap TH	2,362	714	700	521	1,935	81.92	-17	77	

District	Geo-geographical Area	2017 Assessment			Total	% of GA Change*	Scrub	
		Very Dense Forest	Mod. Dense Forest	Open Forest				
Upper Siang™	6,590	1,564	2,452	1,353	5,369	81.47	0	17
Upper Subansiri™	7,032	1,800	2,624	1,147	5,571	79.22	16	26
West Siang™	8,325	2,656	2,949	1,751	7,356	88.36	49	3
Grand Total	83,743	20,721	30,955	15,288	66,964	79.96	-190	247

Table 9.2.8 Forest Cover Change Matrix (area in sq km)

Class	2017 Assessment					Total ISFR 2015 updated
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	20,711	11	7	0	77	20,806
Moderately Dense Forest	7	30,917	31	2	224	31,181
Open Forest	2	23	14,915	7	220	15,167
Scrub	0	0	47	219	15	281
Non-Forest	1	4	288	19	15,996	16,308
Total ISFR 2017	20,721	30,955	15,288	247	16,532	83,743
Net Change	-85	-226	121	-34	224	

9.2.6

Reasons for change detected in 2017 assessment

A decrease of 190 sq km observed in the forest cover of the State can be attributed to shifting cultivation and developmental activities.

