



Nagaland

9.20.1 Introduction

Nagaland is a North- Eastern State covering an area of 16,579 sq km which constitutes 0.50% of the geographical area of the country. Physiographically, Nagaland consists of a narrow strip of hilly country running North-east to South-west and facing the Assam plains to its North and North-west. The state is drained by a number of important rivers, of which Barak river is the major river. Nagaland has a Monsoonal climate. The average annual rainfall varies from about 1,800 mm to about 2,500 mm and the average annual temperature ranges between 21°C to 40°C. The state has 11 districts, all of which are tribal as well as hill districts. As per the 2011 census, Nagaland has a population of 1.98 million accounting to 0.16 percent of India's population. The rural and urban population constitutes 71.14% and 28.86% respectively. The population density of the state is 119 per sq km which is lower than the national average of 382 persons per sq km. The 19th Livestock census 2012 has reported a total livestock population of 0.91 million.

Table 9.20.1 Land Use Pattern

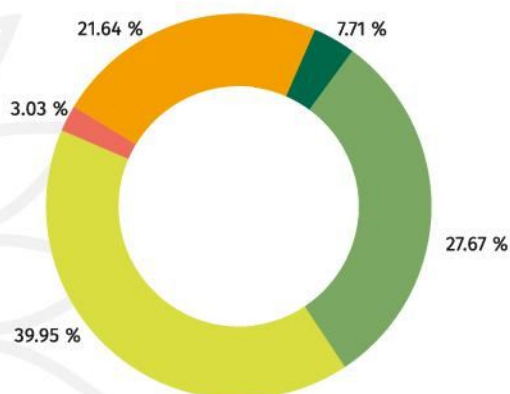
Land Use Types	Area (in 000' ha)	Percentage
Total Geographic Area	1,658	
Reporting area for land utilization	1,652	100
Forests	863	52.24
Not available for land cultivation	95	5.75
Permanent pastures and other grazing lands	0	0
Land under misc. tree crops and groves	94	5.69
Culturable wasteland	70	4.24
Fallow land other than current fallows	100	6.05
Current fallows	50	3.03
Net area sown	380	23.00

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

9.20.2

Forest Cover

Based on interpretation of satellite data pertaining to Oct-Dec 2015, the forest cover in the State is 12,489 sq km, which is 75.33% of the State's geographical area. In terms of forest canopy density classes, the state has 1,279 sq km under very dense forest, 4,587 sq km under moderately dense forest and 6,623 sq km under open forest.



*Forest cover
of Nagaland*

Pie Chart
showing forest
cover of
Nagaland

Non Forest Scrub Open Forest Mod. Dense Forest Very Dense Forest

9.20.3

Forest Cover within and outside Green Wash Area

The State has reported a recorded forest area of 8,623 sq km amounting to 52.01% of its geographical area. The Reserved and Unclassed Forests are 2.71% and 97.29% 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 10,672 sq km has been used and the analysis of forest cover within and outside this area is depicted below.

Table 9.20.2 Forest Cover within and outside Green Wash Area

Forest Cover within Green Wash (Area in sq km)	
Very Dense Forest	1,185
Moderately Dense Forest	3,323
Open Forest	4,269
Total	8,777
Forest Cover outside Green Wash	
Very Dense Forest	94
Moderately Dense Forest	1,264
Open Forest	2,354
Total	3,712
Total Forest Cover	12,489
Tree Cover	379
Total Forest & Tree Cover	12,868
Of State's Geographical Area	77.62 %
Of India's Forest & Tree Cover	1.60 %
Per capita Forest & Tree Cover	0.65 ha

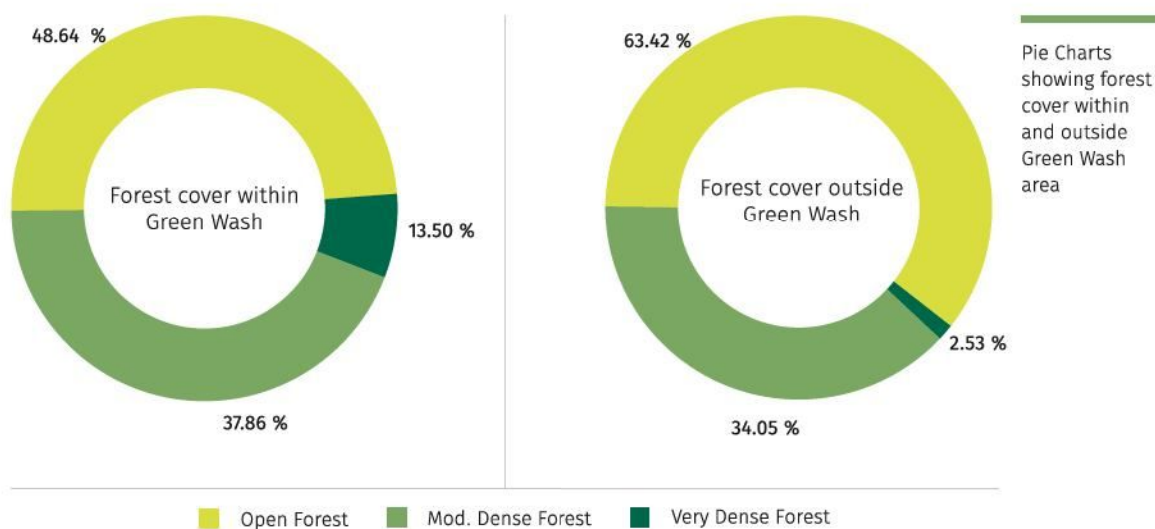


Table 9.20.3 Altitude-wise Forest Cover (Area in sq km)

Altitude Zone (m)	Geographic Area	VDF	MDF	OF	Total
0-500	3,910	0	1,008	1,942	2,950
500-1000	5,051	9	1,304	2,366	3,679
1000-2000	6,520	566	2,029	2,222	4,817
2000-3000	1,075	690	239	91	1,020
Above 3000	23	14	7	2	23
Total	16,579	1,279	4,587	6,623	12,489

(Based on SRTM, Digital Elevation Model)

Table 9.20.4 Forest Cover in different Patch Size Classes

S.No.	Patch Size Range in (sq km)	No. of Patches	Area (sq km)	%age
1.	$\geq 0.01 \leq 1.0$	4,413	212	1.70
2.	$> 1.0 \leq 10$	36	93	0.74
3.	$> 10 \leq 100$	1	12	0.10
4.	$> 100 \leq 500$	0	0	0
5.	$> 500 \leq 1000$	0	0	0
6.	$> 1000 \leq 5000$	0	0	0
7.	$> 5000 \leq 10000$	0	0	0
8.	> 10000	1	12,172	97.46
	Total	4,451	12,489	100

Table 9.20.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	36.899 m cum	0.87
Growing Stock in TOF	11.425 m cum	0.71
Potential Production of industrial wood from TOF	0.51 m cum	0.68
Bamboo bearing area within forest area of the state	6,025 sq km	3.84
Total number of culms	1,301 millions	4.63
Total green weight equivalent of culms	11,269 (000' tonnes)	5.97

9.20.4

Carbon Stock in forest

The total Carbon stock of forests in the State is 125,060 million tonnes (458,553 million tonnes of CO₂ equivalent) which is 1.76% of total forest carbon of the country.

9.20.5

Decadal Change in water bodies within Forest

An increase of 23 sq km has been observed in the water body coverage within forest compared to 2005. The graphical and tabular comparison is depicted below.

Extent of
water bodies
within forest

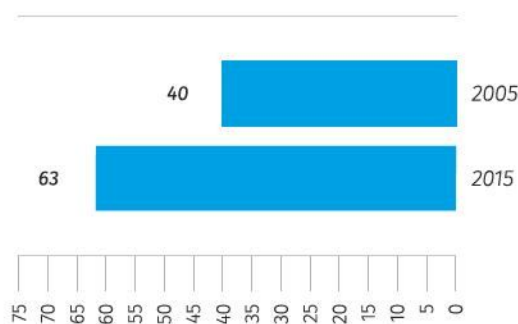


Table 9.20.6 Water bodies within Forest for the years 2005 and 2015

Area/Coverage	2005	2015
Extent of water bodies (sq km) within Forest	40	63
% of water bodies to Forest Cover	0.29	0.50

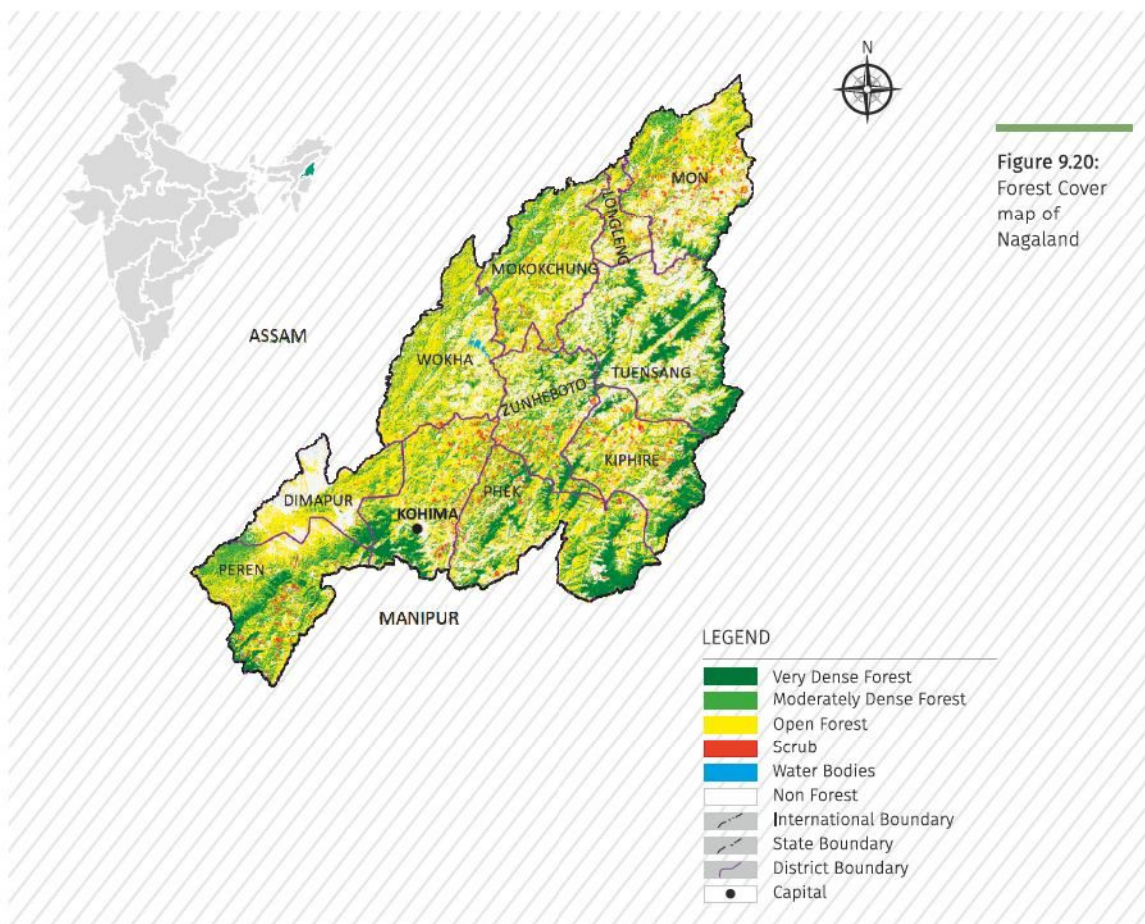


Table 9.20.7 District- wise Forest Cover

(area in sq km)

District	Geographical Area	2017 Assessment			% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest			
Dimapur TH	927	24	163	402	589	63.54	0
Kiphire TH	1,130	152	285	398	835	73.89	-53
Kohima TH	1,463	132	381	673	1,186	81.07	-39
Longleng TH	562	0	127	248	375	66.73	-20
Mokokchung TH	1,615	2	504	816	1,322	81.86	-20
Mon TH	1,786	32	434	741	1,207	67.58	-59
Peren TH	1,651	137	659	642	1,438	87.1	-32
Phek TH	2,026	274	643	707	1,624	80.16	-57
Tuensang TH	2,536	441	554	678	1,673	65.97	-99
Wokha TH	1,628	1	468	837	1,306	80.22	-33
Zunheboto TH	1,255	84	369	481	934	74.42	-38
Grand total	16,579	1,279	4,587	6,623	12,489	75.33	-450

*Change compared to updated 2015 assessment.

Table 9.20.8 Forest Cover Change Matrix						(area in sq km)
Class	2017 Assessment					Total ISFR 2015 updated
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	1,277	0	0	0	7	1,284
Moderately Dense Forest	2	4,575	11	2	100	4,690
Open Forest	0	12	6,448	13	492	6,965
Scrub	0	0	76	476	65	617
Non Forest	0	0	88	12	2,923	3,023
Total ISFR 2017	1,279	4,587	6,623	503	3,587	16,579
Net Change	-5	-103	-342	-114	564	

9.20.6

Reasons for change detected in 2017 assessment

A net decrease of 450 sq km in forest cover observed in the State can be attributed to shifting cultivation and developmental activities.