



## Meghalaya

### 9.18.1 Introduction

Meghalaya covers an area of 22,429 sq km, which is 0.68% of the geographical area of the country. The state has three distinct regions namely, Garo, Khasi and Jaintia hills. Meghalaya has a temperate climate. The average annual rainfall varies from about 4,000mm to about 11,436mm and the western part of the state is warmer with mean temperature ranging between 12°C to 33°C. The central upland is relatively cooler with mean temperature ranging between 2°C to 24°C. The state is drained by a number of rivers, which include Sanda and Simsang. The state has 7 districts, all of which are tribal and hill districts. As per the 2011 census, Meghalaya has a population of 2.96 million accounting to 0.24 percent of India's population. The rural and urban population constitutes 79.93% and 20.07% respectively. The population density of the state is 132 per sq km which is lower than the national average of 382 persons per sq km. The 19<sup>th</sup> Livestock census 2012 has reported a total livestock population of 1.95 million.

Table 9.18.1 Land Use Pattern

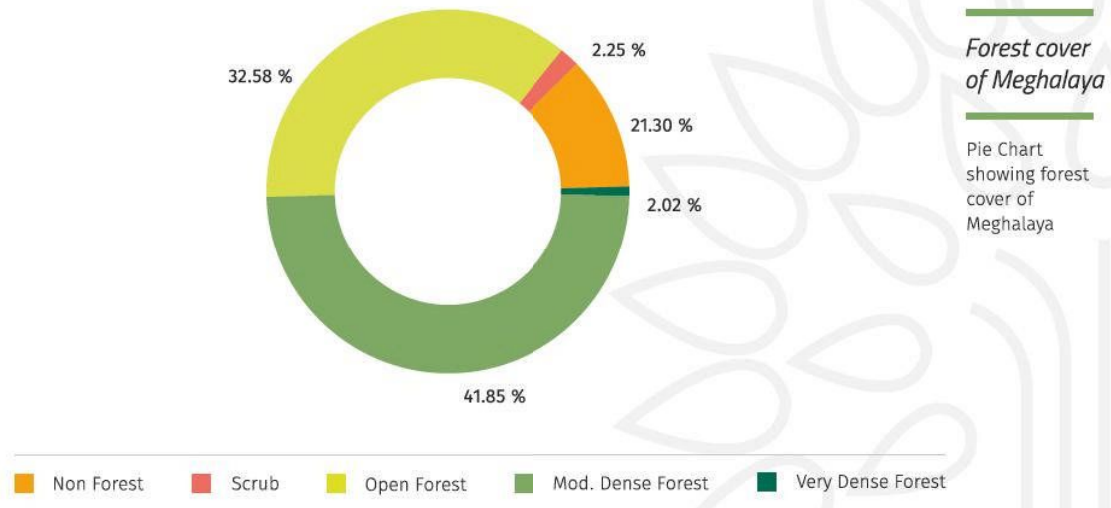
Land Use Types	Area (in 000' ha)	Percentage
Total Geographic Area	2,243	
Reporting area for land utilization	2,241	100.00
Forests	946	42.21
Not available for land cultivation	239	10.66
Permanent pastures and other grazing lands	-	-
Land under misc. tree crops and groves	164	7.32
Culturable wasteland	391	17.45
Fallow land other than current fallows	155	6.92
Current fallows	60	2.68
Net area sown	286	12.76

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

### 9.18.2

#### Forest Cover

Based on interpretation of satellite data pertaining to Oct-Dec 2015, the forest cover in the State is 17,146 sq km which is 76.45% of the State's geographical area. In terms of forest canopy density classes, the state has 453 sq km under very dense forest, 9,386 sq km under moderately dense forest and 7,307 sq km under open forest.



### 9.18.3

## Forest Cover within and outside Green Wash Area

The State has reported a recorded forest area of 9,496 sq km which is 42.34% of the State's Geographic area. The Reserved, Protected and Unclassed Forests are 11.72%, 0.13% and 88.15% respectively of the recorded forest area. Due to non-availability of digitized boundary of recorded forest area from the State, the updated green wash which is 17,562 sq km has been used and the analysis of forest cover within and outside this area is depicted below.

**Table 9.18.2 Forest Cover within and outside Green Wash Area**

Forest Cover within Green Wash (Area in sq km)	
Very Dense Forest (VDF)	410
Moderately Dense Forest (MDF)	7,791
Open Forest (OF)	6,587
<b>Total</b>	<b>14,788</b>
Forest Cover outside Green Wash	
Very Dense Forest	43
Moderately Dense Forest	1,595
Open Forest	720
<b>Total</b>	<b>2,358</b>
<b>Total Forest Cover</b>	<b>17,146</b>
<b>Tree Cover</b>	<b>657</b>
<b>Total Forest &amp; Tree Cover</b>	<b>17,803</b>
Of State's Geographical Area	79.37 %
Of India's Forest & Tree Cover	2.22 %
Per capita Forest & Tree Cover	0.60ha

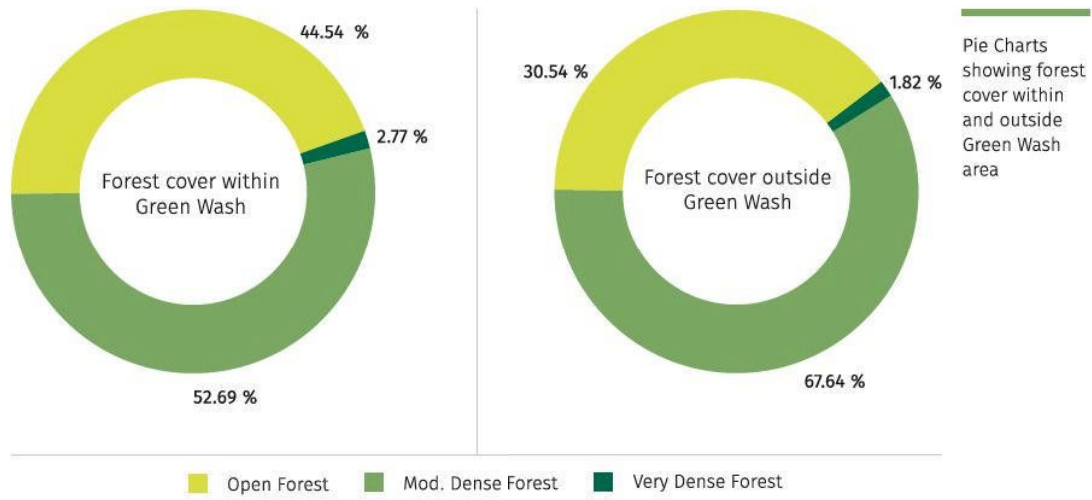


Table 9.18.3 Altitude-wise Forest Cover (Area in sq km)

Altitude Zone(m)	Geographical Area	VDF	MDF	OF	Total
0-500	10,152	232	4,192	4,104	8,528
500-1000	6,239	193	2,752	2,271	5,216
1000-2000	6,038	28	2,442	932	3,402
<b>Total</b>	<b>22,429</b>	<b>453</b>	<b>9,386</b>	<b>7,307</b>	<b>17,146</b>

(Based on SRTM, Digital Elevation Model)

Table 9.18.4 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	6,871	398	2.32
2.	> 1.0 ≤ 10	88	224	1.30
3.	> 10 ≤ 100	6	135	0.79
4.	> 100 ≤ 500	0	0	0.00
5.	> 500 ≤ 1000	0	0	0.00
6.	> 1000 ≤ 5000	1	1,215	7.09
7.	> 5000 ≤ 10000	0	0	0.00
8.	> 10000	1	15,174	88.50
	<b>Total</b>	<b>6,967</b>	<b>17,146</b>	<b>100.00</b>

Table 9.18.5 Growing Stock

	Growing Stock	% Contribution to country
Growing Stock in Recorded Forest Area	38,720 m cum	0.92
Growing Stock in TOF	17,254 m cum	1.08
Potential Production of industrial wood from TOF	0.59 m cum	0.79
Bamboo bearing area within forest area of the state	5,943 sq km	3.79
Total number of culms	1,323 millions	4.71
Total green weight equivalent of culms	11,462 (000' tonnes)	6.07

9.18.4

### Carbon Stock in forest

The total Carbon stock of forests in the State is 155.840 million tonnes (571.413 million tonnes of CO<sub>2</sub> equivalent) which is 2.20% of total forest carbon of the country.

9.18.5

### Decadal Change in water bodies within Forest

An increase of 37 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

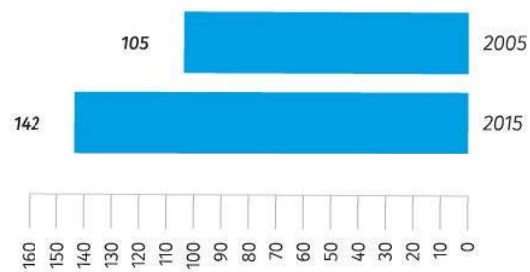


Table 9.18.6 Water bodies within Forest for the years 2005 and 2015

Area/Coverage	2005	2015
Extent of water bodies (sq km) within Forest	105	142
% of water bodies to Forest Cover	0.61	0.83

Table 9.18.7 District- wise Forest Cover

(area in sq km)

District	Geographical Area	2017 Assessment			Total	% of GA	Change *	Scrub
		Very Dense Forest	Mod. Dense Forest	Open Forest				
East Garo Hills™	2,603	63	1,075	1,128	2,266	87.05	-1	53
East Khasi Hills™	2,748	3	1,012	736	1,751	63.72	6	106
Jaintia Hills™	3,819	100	1,488	915	2,503	65.54	-64	86
Ribhoi™	2,448	132	1,096	915	2,143	87.54	-2	35
South Garo Hills™	1,887	45	1,014	629	1,688	89.45	-2	12
West Garo Hills™	3,677	0	1,244	1,593	2,837	77.16	-27	67
West Khasi Hills™	5,247	110	2,457	1,391	3,958	75.43	-26	146
<b>Grand total</b>	<b>22,429</b>	<b>453</b>	<b>9,386</b>	<b>7,307</b>	<b>17,146</b>	<b>76.45</b>	<b>-116</b>	<b>505</b>

\*Change compared to updated 2015 assessment.



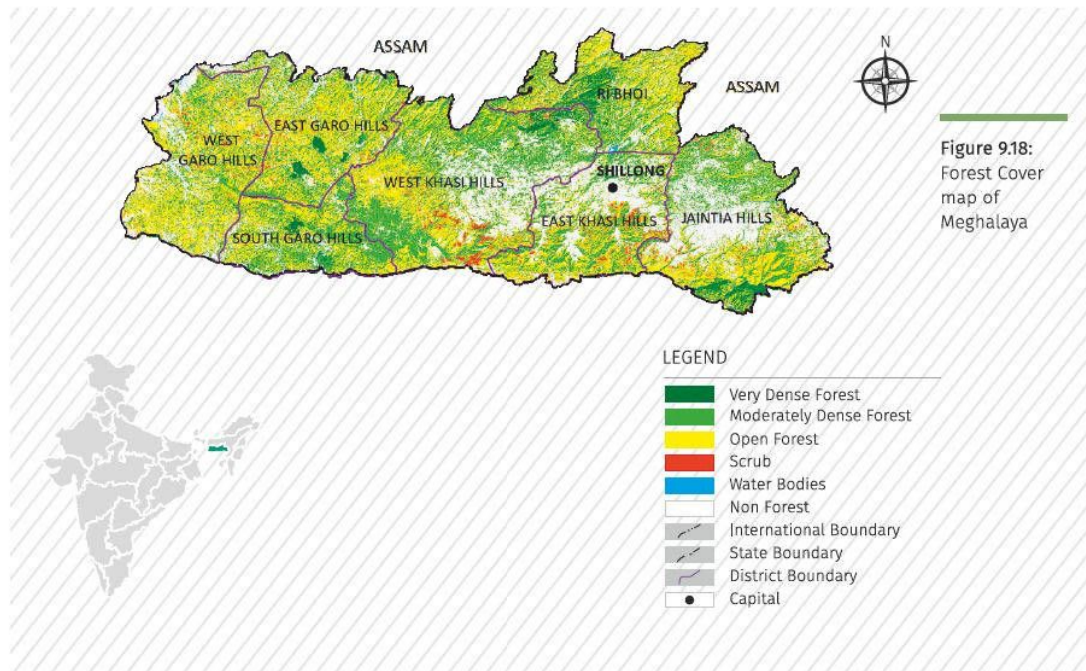


Table 9.18.8 Forest Cover Change Matrix

(area in sq km)

Class	2017 Assessment					Total ISFR 2015 updated
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	417	0	0	0	0	417
Moderately Dense Forest	36	9,314	76	44	85	9,555
Open Forest	0	72	7,098	56	64	7,290
Scrub	0	0	89	242	12	343
Non Forest	0	0	44	163	4,617	4,824
<b>Total ISFR 2017</b>	<b>453</b>	<b>9,386</b>	<b>7,307</b>	<b>505</b>	<b>4,778</b>	<b>22,429</b>
Net Change	36	-169	17	162	-46	

\*Change compared to updated 2015 assessment.

### 9.18.6

#### **Reasons for change detected in 2017 assessment**

A net decrease of 116 sq km has been observed in the State due to shifting cultivation, rotational felling and developmental activities. Increase in forest cover in certain pockets is due to plantation activities.