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COMMUNITY AND PRIVATE FORESTS IN MEGHALAYA

Resource Information

(sampling based estimates)

Centre of Excellence

for Natural Resource Management and Sustainable Livelihoods
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1. Introduction

Meghalaya is rich in forests with 76% of its geographical area under forest cover (ISFR, 2021). More than 90% of forests in Meghalaya are under the ownership of communities, clans and individuals. These forests are of vital significance to the people as they provide livelihood support to the communities and ecosystem services including water to the entire population of the State. Despite being such an extensive and important natural resource of the State, there is hardly any information available about these forests.

Recently, Forest Management Plans (FMPs) of the Community & Private Forests in 400 villages under the CLLMP Project have been prepared after collecting extensive data from the forests by laying out over 12,000 sample plots following stratified random sampling method. In this study, the 400 villages which are well distributed across the State in all the districts have been taken as a sample for generating basic information on community and private forests in the State. The 400 villages provide a well representative sample with reasonably good sampling intensity of nearly 6%. The Table and Figure 1 given below show the distribution of these 400 villages. The forest inventory data of these villages have been statistically analysed to generate estimates of basic information such as extent of dense and open forests, extent of community forests, growing stock, forest carbon, number of trees and girth-class distribution of trees in community and private forests in each district and the State as a whole. Information on these parameters would be very useful for policy, planning and strategizing initiatives for community-led conservation and sustainable management of community and private forests in the State.

Findings of the above mentioned sampling based study are briefly presented in the following sections.

In Meghalaya, ownership of forests by the community, clans and individuals are governed by the customary laws of the traditional institutions. The United Khasi -Jaintia Hills District (Management and Control of Forests) Act of 1958 recognizes Law Kyntang, Law Lyngdoh and Law Niam as areas managed and controlled by the Lyngdoh (religious head) or by the person or people responsible for carrying out local or village religious ceremonies ('Law' means forest in the local language). Law Shnong and Law Adong were defined as village forests for conserving water etc; they are used by the villagers and managed by the Sirdar or head with the help of the village durbar. Law Raid are looked after by the heads of the Raid or commune under the management of the local administrative head. Law Ri Sumar belong to individual clans, while private forests belong to the individual or clan who established or has inherited them (Law Ri Kynti). In Garo Hills, land (including forest) mostly belongs to a specific clan. These lands are known as A'king lands which are managed by the clan head called Nokma. Ownership of forests apart from Government controlled forests, thus can be broadly categorised into two groups viz Community Forests and Private Forests (owned by individuals and clans).

Number of Villages in the Districts and Sample Size

SI No	District	Geographical area (sq km)	No of villages in the District	Number of Villages in the sample
1	East Khasi Hills	2748	1010	93
2	Eastern West Khasi Hills & West Khasi Hills	3906	788	25
3	South West Khasi Hills	1341	314	40
4	Ri Bhoi	2410	612	30
5	East Jaintia Hills	2126	193	30
6	West Jaintia Hills	1693	309	20
7	East Garo Hills	1490	513	30
8	North Garo Hills	1113	569	20
9	South Garo Hills	1887	781	23
10	South West Garo Hills	822	540	49
11	West Garo Hills	2893	1167	40
	Total	22429	6796	400

❖ Sampling Intensity- 5.89%

Map Showing Boundaries of 400 Villages under CLLMP

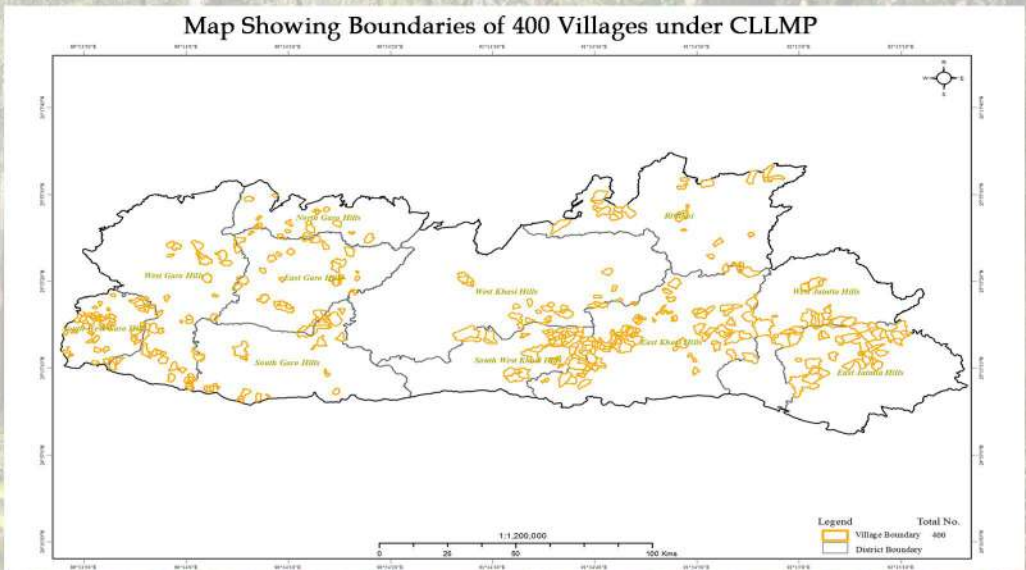


Figure-1



Figure-2: Showing FMP Field Inventory by the VCFs

2. Extent of Community & Private Forests in the State

Sl. No	District	Extent of Forest under the Community Ownership (in sq km)	Extent of Forest under the Individual & Clan Ownership (in sq km)	Total (in sq km)
1	East Khasi Hills	374	1274	1648
2	Eastern West Khasi Hills & West Khasi Hills	101	1898	1999
3	South West Khasi Hills	63	573	636
4	Ri Bhoi	537	716	1253
5	East Jaintia Hills	273	477	750
6	West Jaintia Hills	214	340	555
7	East Garo Hills	111	719	830
8	North Garo Hills	209	101	310
9	South Garo Hills	141	722	862
10	South West Garo Hills	63	300	364
11	West Garo Hills	216	1345	1561
	Total	2302	8467	10769

Forest	% of Geographical area of the State
Community Forests	10.26%
Private Forests	37.75%
Community & Private Forests (combined)	48.01%

Relative Extent of Community & Private Forests in the State

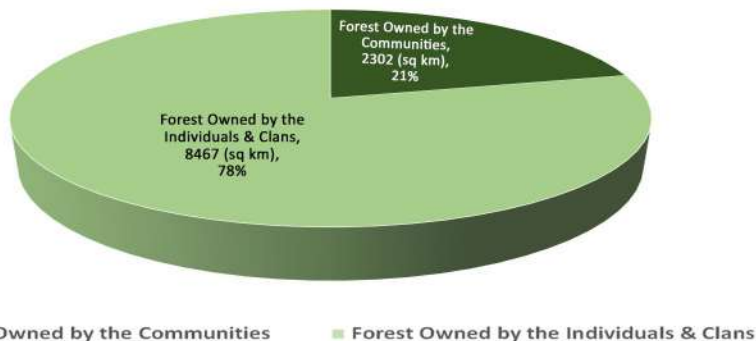


Figure-3

- ❖ Eastern West Khasi Hills & West Khasi Hills (earstwhile West Khasi Hills District) has the largest extent of Community & Private Forests amongst the districts.
- ❖ North Garo Hills District has got the least extent of Community & Private Forests amongst the districts.
- ❖ Community & Private forests in the South West Garo Hills, Eastern West Khasi Hills & West Khasi Hills are relatively smaller in size.

Extent Of Community & Private Forests in the Districts (in sq km)

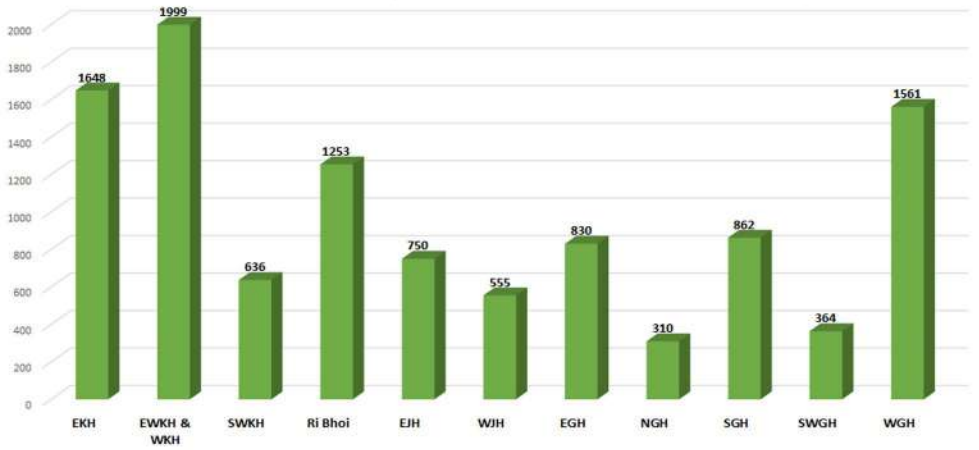


Figure-4

Sl. No	District	Average size of Community Forests per Village (in ha)
1	East Khasi Hills	37
2	Eastern West Khasi Hills & West Khasi Hills	13
3	South West Khasi Hills	20
4	Ri Bhoi	88
5	East Jaintia Hills	141
6	West Jaintia Hills	69
7	East Garo Hills	22
8	North Garo Hills	37
9	South Garo Hills	18
10	South West Garo Hills	12
11	West Garo Hills	19

Average size of Community Forest per Village (in ha)

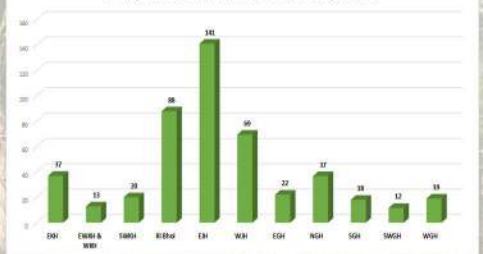


Figure-5

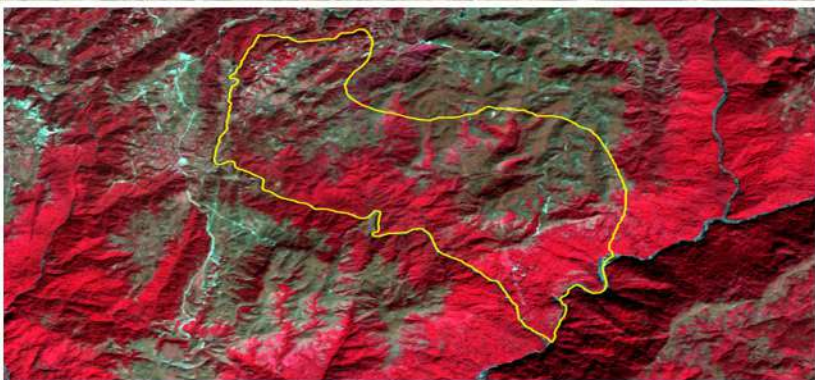


Figure- 6: Boundary Map of the Laitsohphlang Village, (East Khasi Hills District)

3. Extent of Community & Private Forests in terms of Canopy Density

Sl. No	District	Open Forest (sq km)	Dense Forest (sq km)	Total Forest (sq km)
1	East Khasi Hills	970.10	678.15	1648.25
2	Eastern West Khasi Hills & West Khasi Hills	1172.41	826.60	1999.01
3	South West Khasi Hills	435.48	200.96	636.44
4	Ri Bhoi	933.05	320.38	1253.43
5	East Jaintia Hills	474.90	275.09	749.99
6	West Jaintia Hills	442.44	112.12	554.56
7	East Garo Hills	671.19	159.00	830.19
8	North Garo Hills	260.67	49.14	309.81
9	South Garo Hills	660.85	201.46	862.31
10	South West Garo Hills	333.47	30.32	363.79
11	West Garo Hills	1356.76	204.27	1561.03
	Total	7711.32	3057.49	10768.81

Extent of Community & Private Forests in terms of Canopy Density (sq km)

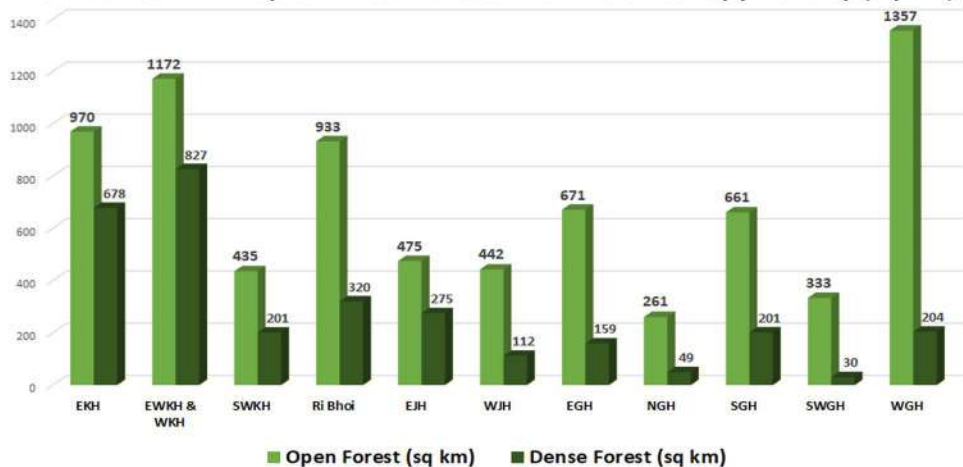


Figure-7



Figure-8: Forests of Garo Hills

Relative extent of Dense & Open Forests

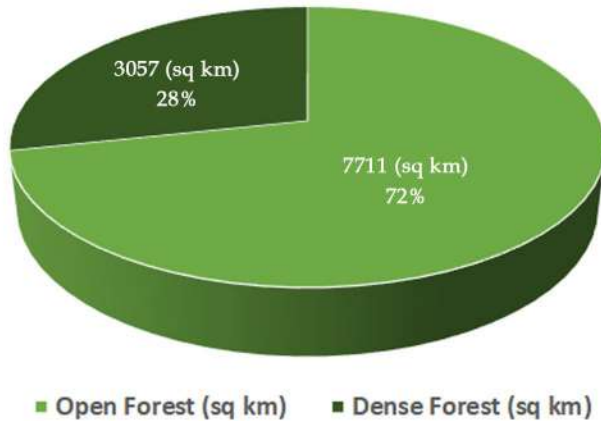


Figure-9

- ❖ 72% of Community & Private Forests are Open Forest and only 28% are Dense Forest.
- ❖ Earstwhile West Khasi Hills District has got maximum extent of Dense Forests followed by East Khasi Hills District.



Figure-10: Forests of Khasi Hills

4. Number of trees in Community & Private Forests

Sl. No	District	No. of Trees in District (in lakh numbers)	No. of trees in Forest / ha
1	East Khasi Hills	226	137
2	Eastern West Khasi Hills & West Khasi Hills	649	325
3	South West Khasi Hills	219	344
4	Ri Bhoi	227	181
5	East Jaintia Hills	164	219
6	West Jaintia Hills	131	237
7	East Garo Hills	95	114
8	North Garo Hills	19	61
9	South Garo Hills	141	164
10	South West Garo Hills	54	149
11	West Garo Hills	130	83
	Total	2056	2014

Number of Trees in Community & Private Forests in the Districts (in lakh numbers)

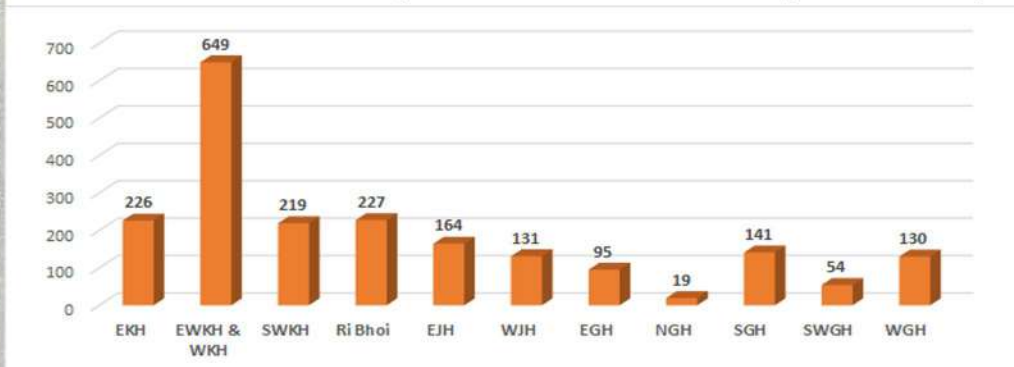


Figure-11

Number of Trees in Forest / ha

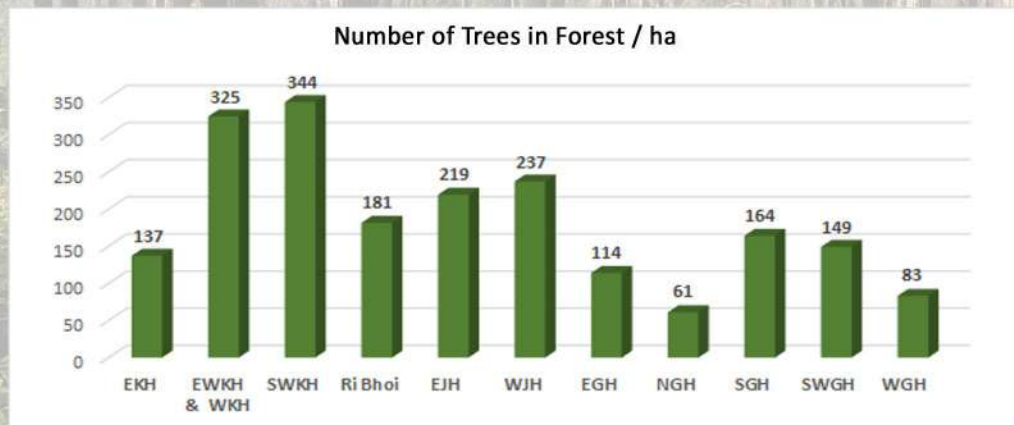


Figure-12

- ❖ South West Khasi Hills and Earstwhile West Khasi Hills districts are having over 300 trees/ha.
- ❖ Earstwhile West Khasi Hills District has the maximun numbers of trees in Community & Private Forests amongst the districts.
- ❖ North Garo Hills has the least number of trees in Community & Private Forests amongst the districts.

5. Growing Stock in Community & Private Forests

Sl. No	District	Growing stock in the forests (in million cum)
1	East Khasi Hills	8.33
2	Eastern West Khasi Hills & West Khasi Hills	9.20
3	South West Khasi Hills	2.82
4	Ri Bhoi	6.66
5	East Jaintia Hills	2.98
6	West Jaintia Hills	3.08
7	East Garo Hills	4.87
8	North Garo Hills	2.09
9	South Garo Hills	1.92
10	South West Garo Hills	1.20
11	West Garo Hills	3.47
	Total	46.62

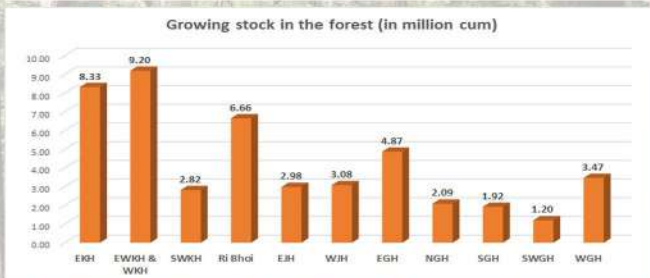


Figure-13

- ❖ Eastern West Khasi Hills & West Khasi Hills Districts put together have the maximun growing stock followed by East Khasi Hills District.
- ❖ South West Garo Hills District has the least growing stock.



Figure-14: Laying of a sample plot by the VCFs

6. Distribution of trees in different diametre classes in Community & Private Forests

(in lakh numbers)

Sl. No	District	Estimate of Number of Trees in the District (in lakh numbers)	Estimate of number of trees in 30-60 cm girth class	Estimate of number of trees in 60-90 cm girth class	Estimate of number of trees in 90-120 cm girth class	Estimate of number of trees in 120-150 cm girth class	Estimate of number of trees in 150-180 cm girth class	Estimate of number of trees in >180 cm girth class
1	East Khasi Hills	226.05	113.06	63.31	33.88	8.21	3.11	3.56
2	Eastern West Khasi Hills & West Khasi Hills	649.46	377.04	195.00	61.77	11.81	2.22	1.63
3	South West Khasi Hills	218.79	146.33	46.72	15.61	3.12	1.41	2.02
4	Ri Bhoi	227.01	77.02	118.82	23.73	4.27	1.27	1.90
5	East Jaintia Hills	164.39	96.78	43.02	17.50	4.52	0.96	1.61
6	West Jaintia Hills	131.44	62.16	45.57	26.86	3.08	0.97	0.52
7	East Garo Hills	94.51	55.13	20.27	9.77	4.43	2.16	2.38
8	North Garo Hills	18.81	6.39	3.93	4.16	2.09	0.70	1.54
9	South Garo Hills	141.45	93.08	33.78	17.14	5.41	1.83	4.09
10	South West Garo Hills	54.27	33.30	10.31	6.00	2.37	1.03	1.26
11	West Garo Hills	129.99	82.44	27.19	10.39	3.80	1.81	4.32
	Total	2056.17	1142.73	607.92	226.81	53.11	17.47	24.83

Number of Trees in different Girth Classes in Community & Private Forests in Meghalaya

(in lakh numbers)

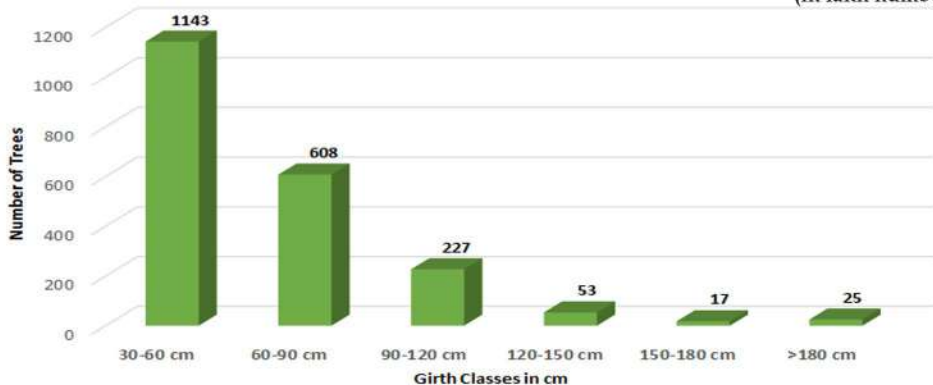


Figure-15

- ❖ Girth class distribution of trees shows that there are very less number of trees of girth size above 120 cm. Absence of large size trees in the Community & Private Forest is a matter of concern.
- ❖ Felling of large size trees should be regulated under the approved Forest Management Plan, to correct the imbalance.

7. Foerst Carbon in Community & Private Forests

Sl. No	District	Carbon Stock (in million tons)	Carbon Stock (in tons/ha)
1	East Khasi Hills	16.40	99.51
2	Eastern West Khasi Hills & West Khasi Hills	22.35	111.81
3	South West Khasi Hills	7.32	115.04
4	Ri Bhoi	15.39	122.77
5	East Jaintia Hills	7.97	106.32
6	West Jaintia Hills	5.64	101.73
7	East Garo Hills	7.44	89.61
8	North Garo Hills	2.67	86.34
9	South Garo Hills	9.37	108.71
10	South West Garo Hills	3.05	83.72
11	West Garo Hills	12.95	82.95

Forest Carbon Stock (in million tons)



Figure-16

Carbon Stock per Hectare (in tons/ha)



Figure-17

- ❖ Forest Carbon Stock is maximum in Eastern West Khasi Hills & West Khasi Hills Districts put together followed by East Khasi Hills District.
- ❖ In terms of Forest Carbon Stock per ha, Ri-Bhoi District has the highest Density amongst the Districts, followed by South Garo Hills District.



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