

ABSTRACT

1	Survey Area	: East Khasi Hill district, Meghalaya
2	Agro climatic Zone	: Eastern Himalayan zone (Zone No-II as per National Planning Commission)
3	Geographical location	: 25 ⁰ 07'25" to 25 ⁰ 40'45" N latitude and 91 ⁰ 21'25" to 92 ⁰ 09'35" E longitude
4	Base Map used	: i. Toposheet (1:50,000). ii. IRS ID LISS-III satellite Imageries in the scale of 1:50,000
5	Total Area	: 2,80,422 ha
6	Period of field visit	: May, 2017
7	Type of Survey	: Reconnaissance Survey for Soil Resource Mapping using Remote Sensing Technique

8. Extent of area under different Mapping Unit and Association of Soil Series

SL. No.	Map Symbol	Mapping Unit	Soil Association	Area (ha)	Area (%)
1	7.1	ACp4a1	Mawphalang-II-Laitlyngkhai-I	4540	1.62
2	7.3	ACp4c1	Chisopara-Laitlyngkhai-I	699	0.25
3	7.2	ACp4d1	Chisopara-Laitlyngkhai-I	1156	0.41
4	1.3	CMi4a1	Mawkyntrew-Upper Shillong	591	0.21
5	1.1	CMi4c1	Upper Shillong-Mawdiang-Nongshyrngan	779	0.28
6	1.2	CMi4d1	Nongshyrngan-Upper Shillong	809	0.29
7	4.6	CMn6a1	Umthli-Laitlyngkhai-II	7653	2.73
8	4.1	CMn6c1	Umphyrnai-Khatarsnong	2108	0.75
9	4.2	CMn6c2	Mawjongka-I-Mawjongka	11646	4.15
10	4.3	CMn6c3	Saitwait-Shillong Peak-II	3650	1.30
11	4.4	CMn6d1	Cherapunjee-Wahlyngkhat	9161	3.27
12	3.1	CMn7c1	Khatarsnong-Umphyrnai	2369	0.84
13	3.2	CMn7c2	Mawjongka-Laitkroh	10133	3.61
14	3.3	CMn7c3	Shillong Peak-II-Lyngngai	4097	1.46
15	3.4	CMn7d1	Wahlyngkhat-Cherapunjee-I-Mawphalang-I	4838	1.73
16	2.1	CMn8c1	Khatarsnong-Umphyrnai	3886	1.39
17	2.2	CMn8c2	Pommura-Laitkroh-Dobu	37018	13.20
18	2.3	CMn8c3	Lyngngai-Shillong Peak-II	32883	11.73
19	2.4	CMn8d1	Mawphalang-I-Cherapunjee-I-Wahlyngkhat	6125	2.18
20	5.6	CMy5a1	Shillong Peak	6469	2.31
21	5.1	CMy5c1	Shillong Peak-I-Pamnakrai	721	0.26
22	5.2	CMy5c2	Shillong Peak-I-Mylliem	8682	3.10
23	5.3	CMy5c3	Mylliem-Shillong Peak-I	1060	0.38
24	5.4	CMy5d1	Pamnakrai-Shillong Peak-I	6751	2.41
25	12.1	GNi4a1	Kyrphei	635	0.23
26	12.3	GNi4c1	Mawkhanu-Dolwaregiri	411	0.15
27	12.2	GNi4d1	Dolwaregiri-Mawkhanu	1098	0.39
28	10.6	GNn6a1	Dobu	3235	1.15
29	10.1	GNn6c1	William nagar-Dobu	108	0.04
30	10.2	GNn6c2	Sohrarim-Puriang	5471	1.95
31	10.3	GNn6c3	Dobu-Darang	1527	0.54
32	10.4	GNn6d1	Mawsynram-Mawsynram-I	6041	2.15
33	9.1	GNn7c1	Dobu-William nagar	1617	0.58
34	9.2	GNn7c2	Sohrarim-Puriang	7101	2.53
35	9.3	GNn7c3	Darang-Rangsohkham	2185	0.78
36	9.4	GNn7d1	Masighat-Mawsynram	1947	0.69
37	8.1	GNn8c1	Dobu-Nengkhra	1371	0.49

SL. No.	Map Symbol	Mapping Unit	Soil Association	Area (ha)	Area (%)
38	8.2	GNn8c2	Puriang-Sohrarim	12694	4.53
39	8.3	GNn8c3	Rangsohkham-Darang	14722	5.25
40	8.4	GNn8d1	Masighat-Mawsynram	456	0.16
41	13.1	GNo4a1	Gomnigiri-Nengsat	56	0.02
42	13.2	GNo4d1	Gomnigiri-Nengsat	85	0.03
43	11.6	GNy5a1	Mawphlang-Nengsat	3913	1.40
44	11.2	GNy5c2	Sawlad Marbisu-Nengsat	2489	0.89
45	11.4	GNy5d1	Sawlad Marbisu-Nengsat	3591	1.28
46	18.1	SDi4a1	Rongbilbanggiri-Jenggitchukgiri	312	0.11
47	18.2	SDi4d1	Jenggitchukgiri-Rongbilbanggiri	475	0.17
48	16.1	SDn6c1	Debgiro-Siju	146	0.05
49	16.2	SDn6c2	Pynursla-Mawshun	7129	2.54
50	16.3	SDn6c3	Ampang giri II-Pongtung	3926	1.40
51	16.4	SDn6d1	Pynursla-I-Debgiro-Siju	306	0.11
52	15.1	SDn7c1	Siju-Debgiro	75	0.03
53	15.2	SDn7c2	Dabit Ampharng-Mawshun	2392	0.85
54	15.3	SDn7c3	Pongtung-Bagmara II	5719	2.04
55	15.4	SDn7d1	Siju-Debgiro	260	0.09
56	14.2	SDn8c2	Damukgrithim-Dabit Ampharng	290	0.10
57	14.4	SDn8d1	Debgiro-Siju	52	0.02
58	17.5	SDy5a1	Pomshutia	1216	0.43
59	17.1	SDy5c1	Mindikgiri	273	0.10
60	17.2	SDy5c2	Mindikgiri-Pomshutia	1578	0.56
61	17.3	SDy5c3	Pomshutia-Mindikgiri II	2557	0.91
62	17.4	SDy5d1	Mindikgiri	665	0.24
63	HS	Habitation		13932	4.97
64	RI	River		247	0.09
65	T	Tank		5	0.00
66	WB	Waterbody		290	0.10
Grand Total				280422	100.00

9. Extent of area under different Slope wise

Sl. No.	Slope class	Area (ha)	Area (%)
1.	Gently to moderately sloping (3-10%)	11646	4.15
2.	Moderately sloping to strongly sloping (5-15%)	39965	14.25
3.	Strongly to moderately steep slope (10-25%)	62107	22.15
4.	Moderately steep to steep sloping (15-33%)	42733	15.24
5.	Very steep to extremely steep sloping (>33%)	109497	39.05
6.	Misc	14474	5.16
Total		280422	100.00

10. Extent of area under different Physiography

Sl. No.	Physiography	Area (ha)	Area (%)
1	Hill top	5110	1.82
2	Hill side slope	214337	76.43
3	Foot hill slope	141	0.05
4	Rolling upland	39965	14.25
5	Narrow hill valleys	6395	2.28
6	Misc.	14474	5.16
Total		280422	100.00

11. Extent of area under different Depth Classes

Sl. No	Depth class	Area (ha)	Area (%)
1.	Shallow(d2)	85205	30.38
2.	Moderately deep(d3)	64108	22.86
3.	Deep(d4)	49124	17.52
4.	Very deep(d5)	67511	24.07
5.	Misc.	14474	5.16
Total		280422	100.00

12. Extent of area under different Landuse/Land cover

Sl. No.	Land use / Land cover	Area (ha)	Area (%)
1.	Agriculture	28620	10.21
2.	Barren lands with few open scrub	43816	15.62
3.	Forest and others vegetation	178949	63.81
4.	Thin /Degraded forest	14563	5.19
5.	Misc.	14474	5.16
Total		280422	100.00

13. Extent of area under different Erosion Classes

Sl. No.	Erosion Class	Area (ha)	Area (%)
2.	Moderate erosion	74563	26.59
3.	Moderate to severe erosion	139427	49.72
4.	Severe erosion	51958	18.53
5.	Misc.	14474	5.16
Total		280422	100.00

14. Extent of area under different Land Capability Classes

Land Capability Classes	Area (ha)	Area (%)
III: Land suitable for cultivation, moderately good land with major limitations	6134	2.19
III-IV: Land suitable for cultivation, moderately good land to fairly good land with occasional cultivation with major limitations	22874	8.16
IV: Land suitable for cultivation, fairly good land with occasional cultivation and major limitations	14242	5.08
VI: Land not suitable for cultivation, suitable for pasture and forestry with minor limitations	15508	5.53
VI-VII: Land not suitable for cultivation, suitable for pasture and forestry with minor to major limitations	7045	2.51
VII: Land not suitable for cultivation, suitable for pasture and forestry with major limitations	6633	2.36
F: Forest area	193512	69.01
Misc.	14474	5.16
Total	280422	100.0

15. Salient features

- ⇒ The survey area is dominated by Hill side slope physiography (76.43 %) followed by rolling upland (14.25%) and narrow hill valley (2.28%).
- ⇒ The very steep to extremely steep (33-50 % & >50 %) of hilly terrain accounts for 39.05 % followed by strongly to moderately steep slope (10-25 %) is 22.15% and moderately sloping to strongly sloping (5-15%) occupies about 15.24 % area.
- ⇒ Forest and others vegetation land occupies about 63.81 % followed by Barren lands with few open scrub 15.62 % and about 10.21 % is under agricultural land.

- ⇒ Nearly 30.38% area is under shallow soil followed by very deep (24.07%), moderately deep (22.86%) and deep soil (17.52%).
- ⇒ Most of the areas are affected by moderate to severe erosion.
- ⇒ Soils of the area are taxonomically classified into three orders i.e. Entisols, Inceptisols, and ultisols.

HOW TO USE SOIL SURVEY REPORT

This report embodies the results of the Soil Resource mapping of East Khasi Hills district of Meghalaya and furnishes information on the geographical setting of the district, such as location, extent, physiography, relief, drainage, climate, geology, natural vegetation, agriculture, land use and soils.

Other information on interpretative grouping of soil and land resources provides management guidelines on land capability classes, soil suitability grouping and recommended crops; horticulture development; forest, forage and grassland development; rehabilitation of saline, alkali and other degraded soils, water harvesting, water storage and water management. The genesis and classification of the soils of the district are also discussed.

East Khasi Hills district is spread over an area of 280422 ha. The district is covered by 10 SOI topographical sheets on the scale of 1:50,000 which have been used as base maps. Each soil mapping unit is marked with symbols like CMi4c1 indicating Conglomerate landscape, Hill top / Ridge with 3-10% slope, forest land use and soils series association which has dominance of Upper Shillong in association with Mawdiang and Nongshyrngan series. Association of soil series is in general restricted to the maximum of three soil series.

For the use of soil resource report, first it is to locate the area of interest on the map and note down the soil mapping units. Permanent features such as road, stream, Lakes and village/habitation etc. shown on the map help to locate the area of interest on the map. For the detailed information on soil mapping unit in respect of soil series of the area of interest, its extent, present and proposed land uses, reference may be made to **Chapter-4, 6** and **Appendix– I & II**.

The symbol used in soil mapping represents the five level of mapping i.e. GGi4c1 may be referred to as :

“GG” represents Granite gneisses Landscape, “n” represents Hill side slope,

“7” represents 15-33% Slope Class, “c” represents Forest Land Use Class,

“1” represents Association of Soil Series along with the descriptions of soils, soil erosion and their management.

For any further details and suggestion, correspondence or personal contact maybe made to:

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