

Inventory of Soil Resources of Darrang District, Assam Using Remote Sensing and GIS Techniques

ABSTRACT

1. **Survey Area** : Darrang district, Assam
2. **Geographical Extent** : 91⁰43' to 92⁰21' E Longitudes and
26⁰10' to 27⁰05' N Latitudes
3. **Agro Climatic Region** : Eastern Himalayan Region (Zone no. II as
per planning commission)
4. **Total area of the district** : **348100 ha.**
5. **Kind of Survey** : Soil Resources Mapping using remote
sensing techniques.
6. **Base map** : a) IRS – ID Geocoded Satellite Imagery (1:
50000 scale)
b) SOI –toposheet (1:50000 scale)
7. **Scale of Mapping** : 1 : 50000
8. **Period of Survey** : February2010 to March 2010
9. **Soil Series association mapped and their respective area**

Mapping Symbol	Mapping Unit	Soil-Association	Total Area (ha)	Area (%)
1	ACx4c1	Tangla	602	0.17
2	ACx3a1	Bamanjuli-Koramore	15301	4.40
3	ACx3a2	Koramore-Paneri	18200	5.23
4	ACx2a1	Darrang-Betabari	7642	2.20
5	ACx2b1	Orangajuli-Tangla	9813	2.82
6	ACx2b2	Paneri-Sonajuli	11189	3.21
7	ACx2d1	Paneri-Koramore	875	0.25
8	ALb1a1	Banglagarh-Keotpara	43516	12.50

Mapping Symbol	Mapping Unit	Soil-Association	Total Area (ha)	Area (%)
9	ALb1a2	Hazarika Para-Thekarabari-Darrang	53787	15.45
10	ALb1a3	Panikheti -Keotpara	1642	0.47
11	ALn2a1	Rangamati-Thekarabari-Keotpara	4535	1.30
12	ALn2a2	Panikheti-Rangamati	26958	7.74
13	ALb2b1	Banglagarh-Orang	7516	2.16
14	ALb2b2	Darrang-Banglagarh	68442	19.66
15	ALb2c1	Orang-Kurua	5784	1.66
16	ALe3d1	Kurua-Gadhuwa	6529	1.88
17	ALd2d1	Mahuliapara-Bhutiamari	6654	1.91
18	ALe2d1	Gadhuwa-Mahuliapara	23707	6.81
19	ALf1a1	Keotpara-Thekarabari	295	0.08
20	ALg2a1	Bhutiamari-Panikheti	842	0.24
21	ALg3b1	Panikheti -Bhutiamari	3616	1.04
23	SDn7c1	Kherkherria	2072	0.60
24	GGn7c1	Barkhola-Ghatuapara	496	0.14
25	GGn6c1	Barkhola-Ghatuapara	268	0.08
26	GGr6c1	Ghatuapara-Barkhola	84	0.02
98	HS	Habitation	1753	0.50
99	RI	River or Stream	24292	6.98
97	WB	Water Bodies	1690	0.49
Total			348100	100.00

Mapping Symbol	Mapping Unit	Soil-Association	Total Area (ha)	Area (%)
1	ACx4c1	Tampra	612	0.17
2	ACx3a1	Bhampur-Karnam	17301	4.98
3	ACx3a2	Karnam-Pan	18700	5.37
4	ACx2a1	Darrang-Thekarabari	7442	2.14
5	ACx2b1	Orangguli-Tampra	1813	0.52
6	ACx3b2	Pantri-Sorajuli	11800	3.39
7	ACx2a1	Pantri-Karnam	837	0.24
8	ALb1a1	Banglagarh-Keotpara	4510	1.30

10. Salient Features

» Soils of the Darrang district, Assam mainly fall under four major physiography

- Hill side slope 2836 ha (0.28%)
- Hillock /subdued hills 84 ha (0.02%)
- Piedmont plain 63622 ha (18.28%)
- Alluvial / Flood plain 253823 ha (72.92%)

» Soils of the district fall in five slope classes

- Nearly level to very gentle slope 229732 ha (66.0%)
- Nearly level to gentle slope 5258 ha (1.51%)
- Very gently to gentle slope 82455 ha (23.69%)
- Strong to moderately steep slope 848 ha (0.24%)
- Moderately steep to steep slope 2072 ha (0.60%)

» Soils of the district fall under five erosion classes

- None to slight erosion 177684 ha (51.04%)
- Slight to moderate erosion 67230 ha (19.31%)
- Moderate erosion 73295 ha (21.06%)
- Moderate to severe erosion 2072 ha (0.60%)
- Severe erosion 84 ha (0.02%)

» Soils of the district fall under three depth classes

- Moderately deep 848 ha (0.24%)
- Deep 48239 ha (13.86%)
- Very deep 271278 ha (77.93%)

» Soils under different Land Capability classes

- II 206691 ha (59.38%)
- III 22691 ha (6.52%)
- II-III 35270 ha (10.13%)
- III-IV 52793 ha (15.17%)
- VI 352 ha (0.10%)
- VII 2568 ha (0.74%)