

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

ABSTRACT

1.	Survey Area	:	Sivasagar district, Assam
2.	Geographical Extent	:	26 ^o 45' to 27 ^o 15' North latitude 94 ^o 21' to 95 ^o 25' East longitude
3.	Agro Climatic Region	:	Eastern Himalayan region (Zone no. II as per planning commission)
4.	Total area of the district	:	2,66,800 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	:	March, 2009 to April, 2009

9. Soil Series association mapped and their respective area

Mapping Unit	Mapping Symbol	Soil Association	Area(ha)	Area%
ALb2a1	01	Tekelachuk-Magnagaon-Ailamukh	22961	8.61
ALb2a2	02	Mismargaon-Hensua	54098	20.28
ALb3a1	03	Ailamukh-Magnagaon	5840	2.19
ALb3b1	04	Hensua	41719	15.64
ALb3c1	05	Namdang-Domar dollang	10627	3.98
ALb3d1	06	Rajabari-Magnagaon	16020	6.00
ALd3d1	07	Teliadong-Hulagaon	1046	0.39
ALe3d1	08	Majarbari-Sauraguri	1607	0.60
ALg3a1	09	Fulanibari-Methanchogaon	3480	1.30
ALk2e1	10	Disalgaon	8270	3.10

Mapping Unit	Mapping Symbol	Soil Association	Area(ha)	Area%
ALn1a1	11	Jaysagargaon-Majgaon-Majarbari	65284	24.47
SHr5b1	12	Bagabagoti-Dasalong	4536	1.70
SHr5c1	13	Dasalong-Bagabagoti	2046	0.77
SHf9c1	14	Tippling-Lunghua	652	0.24
SHn6b1	15	Dholbagaon-Lunghua	5763	2.16
SHn6d1	16	Lunghua-Dholbagaon	7115	2.67
Habitation	17		3359	1.26
River/Nala	18		12377	4.64
Grand Total			266800	100.00

10. Salient Features:

- ⇒ Total twenty two soil series have been mapped in Sivasagar district
- ⇒ Soils of the district are deep and very deep
- ⇒ *Soil of Sivasagar district, Assam mainly falls under six physiography.*
 - *Hill side slope - 13530ha(5.07%)*
 - *Low hill /Hillock - 6582ha(2.47%)*
 - *Alluvium plain & Flood plain - 216549ha(81.17%)*
 - *Marshy land - 8270ha(3.10%)*
 - *Levees - 1607ha(0.60%)*
 - *Stream bank/point bar complex - 4526ha(1.69%)*
- ⇒ *Soils of the district fall in five slope classes :-*
 - *Nearly level sloping - 65284ha(24.47%)*
 - *Nearly level to very gently sloping - 104829ha(39.29%)*
 - *Very gently to gently sloping - 67421ha(25.27%)*
 - *Strongly to moderately steep sloping - 12878ha(4.83%)*
 - *Very steep to extremely steep sloping - 652ha(0.24%)*
- ⇒ *Various land use / land cover classes of the district are as under*
 - *Cultivated land - 151663ha(56.85%)*
 - *Forest - 13325ha(4.99%)*
 - *Tea plantation - 52018ha(19.50%)*
 - *Open scrub and Wasteland - 34058ha(12.77%)*

⇒ *Soils of the area are taxonomically classified into four orders i.e. Alfisols, Entisols, Inceptisols and ultisols. All the twenty two soils series identified in the area are further classified into 8 sub-orders, 14 great groups, 22 subgroups and 22 families.*

⇒ Soils of the districts have four erosion classes

➤ None to slight water erosion	98894 ha	37.07%
➤ Slight to Moderate erosion	78105 ha	29.27%
➤ Moderate erosion	53953 ha	20.22%
➤ Moderate to severe erosion	20112ha	7.54%

⇒ Soils under different Land Capability classes

➤ II	77059 ha	28.88 %
➤ II-III	128557 ha	48.18 %
➤ III-IV	17066 ha	6.40 %
➤ IV-V	8270 ha	3.10 %
➤ IV-VI	4536 ha	1.70%
➤ VI	7809 ha	2.93%
➤ VI-VII	7115 ha	2.67%
➤ VII-VIII	652 ha	0.24%