

Soil Resource of East Champaran (Motihari) District, Bihar

Abstract

1. **Surveyed Area** : East Champaran district, Bihar
2. **Location** : Latitude 26°15' 16 ''to 27° 01' 13'' N
Longitude 84°29' 13'' to 85° 17' 55'' E
3. **Agroclimatic Region** : Middle Gangetic Plain
(Zone – IV as per planning commission)
4. **Total Area of the District** : 396803 ha
5. **Kind of Survey** : Soil Resource Mapping using Remote Sensing and GIS Techniques
6. **Base Map** : IRS-ID Geocoded Satellite Imagery (1:50,000 scale)
Survey of India Topographical maps on 1:50,000 scale.
7. **Scale of Mapping** : 1:50,000
8. **Period of Survey** : January, 2015

9. Soil Series Association mapped and their respective area:

Sl. No.	Mapping Unit	Soil Series Association	Area(ha)	Area%
01	ALb1a1	Kesaria, Rariaha	29773	7.50
02	ALb1a2	Bhawanipur, Partapur, Jhitkahia	70624	17.80
03	ALb1a3	Champapur, Jhajhara, Karmoulia	40742	10.27
04	ALb1a4	Bhakhari, Mathia Mohan	82363	20.75
05	ALb2a1	Mathbanbari, Jhakra	83043	20.93
06	ALb2a2	Sakrar, Parsaunikapur, Fatuha	29482	7.43
07	ALb2b1	Dhekha, Fatuha	2073	0.52
08	ALe2a1	Dumariya Ghat, Madhubani Ghat	10277	2.59
09	ALe2d1	Dumariya Ghat	7279	1.83
10	ALg3a1	Piprakothe, Jitwara	6968	1.76
11	ALn2a1	Tharghatma, Jitwara	9828	2.48
12	Miscellaneous	Habitation	4035	1.02
		River & Waterbody	20316	5.12
		Grand Total	396803	100

10. Salient Features:

⇒ Physiographic division of the soils of the East Champaran district of Bihar:

Landscape	Physiography	Area (ha)	Area(%)
Alluvium	Alluvial Plain	338100	85.20
	Flood Plain	9828	2.48
	Levee	17556	4.42
	Stream/River Banks	6968	1.76
Miscellaneous	Habitation	4035	1.02
	River & Waterbody	20316	5.12
Total		396803	100

⇒ Soils of the district fall in two slope classes:

Sl. No.	Slope Classes	Area (ha)	Area (%)
1.	Nearly level	223502	56.33
2.	Very gently slope	141982	35.77
3.	Very gentle to gentle slope	6968	1.76
	Misc.	24351	6.14
Total		396803	100

⇒ Various land use / land cover classes of the district are as under

Sl.No.	Land Use	Area (ha)	Area (%)
1.	Agriculture (Single/Multi crop)	363100	91.51
2.	Plantation	2073	0.52
3.	Open scrub/scrub's lands	7279	1.83
	Misc. Land	24351	6.14
Total		396803	100

⇒ Erosion classes of the soils of the district are as under

- The soils comprising of 336027 ha. (84.68 %) fall under non to slight erosion.
- The soils comprising of 29457 ha. (7.42 %) fall under slight to moderate erosion.
- The soils comprising of 6968 ha (1.76 %) fall under moderate to severe erosion
- Miscellaneous 24351 ha (6.14%)

⇒ Soils of the area are taxonomically classified into three orders i.e Alfisols, Inceptisols. and Entisols. All the 21 soils series identified in the area are further classified into 6 sub order, 6 great group, 11 sub group and 17 families.

HOW TO USE SOIL RESOURCE MAPPING REPORT

This report embodied the results of the Soil Resource Mapping of East Champaran district, Bihar providing information on the geographical setting of the district such as location, extent, physiography, relief, drainage, climate, geology, natural vegetation, agriculture, land use and soils.

The report contains other information on interpretative grouping of soils (**Chapter 7**) such as land capability classes, land irrigability classes, soil suitability grouping and hydrological grouping and also recommendation for crops; horticulture development, forest, forage and grassland development; water harvesting, water storage and water management that are essential for soil and land resource management. The genesis and classification of the soils are also discussed in **Chapter 5**.

East Champaran district of Bihar is spread over an area of 396803 ha. The district is covered by 10 SOI topographical sheets on the scale of 1:50,000 which are used as base material along with satellite imageries.

Each soil mapping units is marked by mapping unit i.e ALb1a1 (Alluvium; alluvial plain; 0-1% slope; agriculture land use; soil series association describing Kesaria as dominant series in association with Rariaha series). Each soil association is restricted to a maximum of three soil series.

For the use of the soil resource report, first 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 and reference may be made to **Chapter 4, Appendix I and II**.

The mapping unit used in soil mapping represents the five levels of mapping i.e ALb2a1 may be referred as follows:

AL	-	Alluvium	-	Landscape
b	-	Alluvial plain	-	Physiography
1	-	0-1% slope	-	Slope Class
a	-	Agriculture land	-	Land Use
1	-	Association of soil series with erosion and management soil unit.		

Any comment and suggestion on the report would be welcome. For further enquiry or clarification, correspondence or personal contact may be established with either of the following address

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