Abstract

1. **Survey area** : 2C1C3c4, c6, h5, j1, k3, k4, 2C1C4d3, j2, j6 and 2C1D3b5, c1, c2, c4, g4, h1 to h4, h6, j2, j5, j6, k1, k6 to k8, m1, m2, m4, n1 to n3, n5, p2, q2, s1 to s3, s5 to s8 Microwatersheds in LB- Lower Ken Subcatchment, Ken FPR Catchment (2C1), Taluka – Gourihar, Loundi, District- Chhatarpur & Taluka- Ajaigarh, District- Panna, Madhya Pradesh and Taluka- Mahoba, Charkhari, District- Mahoba & Taluka- Maudaha, District- Hamirpur & Taluka- Naraini, District- Banda, Uttar Pradesh

2. **Geo-graphical Location** : Lies between 25^{o} 15′ to 25° 37′ N Latitude and 79^{o} 41′ to 80^{o} 0′ E Longitude & lies between 24^{o} 56′ to 25^{0} 14′ N Latitude to 80^{o} 4′ to 80^{o}26′ E Longitude

3. **Type of Survey** : Detailed Soil Survey using Remote sensing techniques

4. **Base map used** : High Resolution Satellite Imagery on 1:12,500 scales and Survey of India Toposheets

5. **Total area mapped** : 37560 ha

6. **Agro Climatic Region** : VIII- Central Plateau & Hill region

7. **Period of Survey** : December, 2013 to January, 2014

❖ **Names of Soil Series and their Extent**

S. No.	Soil Series	No. of mapping unit	Area (ha)	Area (%)
1.	**Amha (A)**	5	4406	11.72
2.	**Bamitha (B)**	3	679	1.81
3.	**Banipur (BN)**	6	4478	11.91
4.	**Chandipatti (CP)**	4	600	1.60
5.	**Garapura (G)**	6	3350	8.91
6.	**Harbanspur (HB)**	6	6582	17.50
7.	**Kandolan (KL)**	1	140	0.37
8.	**Khajuraho (KH)**	3	778	2.07
9.	**Mohana (M)**	9	6959	18.50
10.	**Parwar (P)**	3	3582	9.53
11.	**Rajnagar (R)**	3	857	2.39
12.	**Satna (S)**	4	433	1.14
13.	**Habitation (H)**	-	1636	4.35
14.	**Water Bodies (River, Canal, Tank)**	-	2589	6.89
15.	**Misc. Lands (ROC, OS)**	-	491	1.31
TOTAL		**53**	**37560**	**100.00**

ROC: Rock Out Crop, OS: Open Scrub

❖ **Distribution of Area under different Soil Depth Class**

S. No.	Soil Depth Class	Area (ha)	Area (%)
1.	Shallow	2314	6.16
2.	Moderately deep	433	1.15
3.	Deep	140	0.37
4.	Very deep	29957	79.76
5.	Habitation (H)	1636	4.36
6.	Water Bodies (River, Canal, Tank)	2589	6.89
7.	Misc. Lands (ROC, OS)	491	1.31
	Total	**37560**	**100.00**

❖ **Distribution of Area under different Soil Erosion Class**

S. No.	Soil Erosion Class	Area (ha)	Area (%)
1.	None to slight erosion	945	2.52
2.	Moderate erosion	21392	56.95
3.	Severe erosion	6925	16.37
4.	Very severe erosion	3582	9.54
5.	Habitation (H)	1636	4.36
6.	Water Bodies (River, Canal, Tank)	2589	6.89
7.	Misc. Lands (ROC, OS)	491	1.31
	Total	**37560**	**100.00**

❖ **Distribution of Area under different Land Capability Class**

S. No.	Land Capability Class	Area (ha)	Area (%)
1.	II	14404	38.35
2.	III	7505	19.98
3.	IV	1370	3.65
4.	VI	8188	21.79
5.	VII	143	0.38
6.	Forest	1234	3.29
7.	Habitation (H)	1636	4.36
8.	Water Bodies (River, Canal, Tank)	2589	6.89
9.	Misc. Lands (ROC, OS)	491	1.31
	Total	**37560**	**100.00**

❖ **Distribution of Area under different Slope Class**

S. No.	Slope Class	Area (ha)	Area (%)
1.	Very gentle Slope	14576	38.81
2.	Gentle Slope	9652	25.69
3.	Moderate Slope	3399	9.05
4.	Strong Slope	3909	10.41
5.	Moderately Steep Slope	1127	3.00
6.	Steep Slope	181	0.48
7.	Habitation (H)	1636	4.36
8.	Water Bodies (River, Canal, Tank)	2589	6.89
9.	Misc. Lands (ROC, OS)	491	1.31
	Total	**37560**	**100.00**

❖ **Salient Features of the Area**

- About 29957 ha (79.76 %) of total surveyed area in falls under very deep soil depth, of which 38.35 % area is under LCC– II good land for cultivation and can be adopted for crop based farming system and 19.98 % area falls under LCC– III fairly good for cultivation, suitable for horticultural based cropping system and about 3.65 % land is under IV, 21.79 % land is under VI and about 0.38 % is under LCC-VII which are suitable for any pasture development.
- 2314 ha (6.16 %) area has shallow soils, which may be brought under Agro-Horticulture or Pasture development.
- 433 ha (1.15 %) area has moderate soils.
- 10507 ha (27.97 %) are subjected to severe to very severe erosion and thus urgently require integrated soil conservation measures.
- 21909 ha (58.33 %) area is suitable for agriculture.

HOW TO USE SOIL SURVEY REPORT

The present report furnishes a detailed account of various characteristics of the surveyed area like physiography, relief, geology, climate, natural vegetation, land use and soils. Detailed description of soils series recognized in the area and interpretation of different soil mapping units for various applied aspects of agricultural development, such as land use planning, soil and water management, soil conservation are given in relevant chapters. Different problems of the area have been depicted and corrective measures have also been suggested.

In order to use the report, the user will locate the area of his interest on the soil map appended with the report. On the map, each soil mapping unit has been delineated and represented by symbolic expression. The abbreviated symbol of mapping unit reflects information about the name of soil series, soil depth, surface texture, land slope, erosion status and surface features like gravelliness, stoniness and rockiness. The soil mapping unit is demarcated as **M5fC2** where **'M'** represents for 'Mohana' Soil Series, **'5'** for very deep soil depth**, 'f'** for silt loam surface texture, **'C'** for gentle sloping (3-5 %), **'2'** for moderate water erosion.

The details of the soil mapping units, their description and multipurpose interpretative groupings have been shown in **Annexure- I** (Guide to Soil Mapping Units). The Differentiating Morphological Characteristics of Soil Series are furnished in **Table- 5** and the Morphological Description of Soil Series is described in **Annexure- II.** Micro watershed wise mapping unit list is given in **Annexure– III.** Analytical methods are described in **Annexure- IV.** The glossary of scientific terms used in this report is given in **Annexure– V.** The symbols used in the report are also illustrated in **Annexure- VI.**

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