Report on Detailed Soil Survey and Land Use of 2C1B8f3, 4, g1-3, 5-8, h4, j1-6, k2, 3, m5, t2-8, u3-5, v2-5, w1-7, x1-5, y7, 8, z1-3, 6-9 Micro-watersheds of LB-Upper Ken Sub-catchment of Ken Catchment (FPR), Tehsil - Rajnagar and District- Chhattarpur, Madhya Pradesh State

Abstract

1. ***Survey area*** : 2C1B8f3, 4, g1-3, 5-8, h4, j1-6, k2, 3, m5, t2-8, u3-5, v2-5, w1-7, x1-5, y7, 8, z1-3, 6-9 Micro-watersheds of LB-Upper Ken Subcatchment of Ken Catchment (FPR), Tehsil-Rajnagar and District-Chhattarpur, Madhya Pradesh State
2. ***Geo-graphical Location*** : Lies between $24^0\,41'$ to $25^0\,01'$ N Latitude and between $79^0\,40'$ to $80^0\,05'$ E Longitude
3. ***Type of Survey*** : Detailed Soil Survey using Remote sensing techniques
4. ***Base map used*** : Google maps
5. ***Total area mapped*** : 45589 ha
6. ***Agro Climatic Region*** : Central Plateau & Hill region (zone No. VIII)
7. ***Period of Survey*** : October, 2012 and January, 2013
8. ***Scale of map*** : Google maps on 1:12,500 Scale

9. Names of Soil Series and their extent:

Sl. No.	Series Name	No. of mapping unit	Area (ha)	Percentage
1.	Bamitha (B)	6	4200	9.21
2.	Devgaon (D)	7	2000	4.39
3.	Garapura (G)	6	4047	8.88
4.	Kandolan (KL)	10	7687	16.86
5.	Khajuraho (KH)	3	1197	2.63
6.	Koda (KD)	3	341	0.75
7.	Patan (P)	1	281	0.62
8.	Rajnagar (R)	3	397	0.87
9.	Udaipura (U)	10	21018	46.10
10.	Tiger Reserve (RF)	-	1497	3.28
11	Water Bodies (W. B)	-	1683	3.69
12	Misc Land (ML)	-	1241	2.72
	Total	**49**	**45589**	**100.00**

10. Distribution of Area under Different Depth Classes:

Soil Depth Class	Area in ha	Percentage
Shallow	7794	17.10
Moderately deep	21018	46.11
Deep	7687	16.86
Very deep	4669	10.24
Tiger Reserve Forest	1497	3.28
Water bodies	1683	3.69
Miscl. Lands	1241	2.72
Total	**45589**	**100%**

11. Distribution of Area under Different Soil Erosion Classes:

Erosion Class	Area in ha.	Percentage
None to slight erosion	269	0.59
Moderate erosion	35247	77.32
Severe erosion	5652	12.40
Tiger Reserve Forest	1497	3.28
Water bodies	1683	3.69
Miscl. Lands	1241	2.72
Total	**45589**	**100%**

12. Distribution of Area under Different Land Capability Classes:

Land Capability Class	Name of Soil Series	Area in ha	Percentage
II	Kandolan, Koda Garapura	10691	23.45
III	Garapura, Kandolan, Udaipura	20907	45.86
IV	Bamitha,Garapura, Devgaon	6927	15.20
VI	Khajuraho	1111	2.44
VII	Khajuraho	86	0.19
Forest	-	1446	3.17
Tiger Resrve (RF)	-	1497	3.28
Water bodies	-	1683	3.69
Miscl. Lands	-	1241	2.72
	Grand Total	**45589**	**100.00**

13. Distribution of area under different slope classes

Slope Classes	Area in ha.	Percentage
Very gentle Slope (B)	26722	58.62
Gentle Slope (C)	12023	26.37
Moderate Slope (D)	829	1.82
Strong Slope (E)	530	1.16
Moderately steep Slope (F)	724	1.59
Steep Slope (G)	340	0.75
Tiger Reserve (RF)	1497	3.28
Water bodies	1683	3.69
Miscl. land	1241	2.72
Total	**45589**	**100.00**

14. Salient Features of the area:

- 12356 ha (27.10 %) area is covered by deep to very deep soils.
- 21018 ha (46.11 %) area is covered by moderately deep soils.
- 7794 ha (17.10 %) area is covered by shallow soils.
- 5652 ha (12.40%) are subjected to severe erosion and thus urgently require integrated soil conservation measure.
- 32441 ha (71.16%) area is suitable for agriculture and 6084 ha (13.35%) area is marginally suitable for agriculture.
- 1197 ha (2.63%) area may be brought under agro-horticulture or pasture development.

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 descriptions 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, gradient erosion status and surface features like gravelliness, stoniness and rockiness. The soil mapping unit is demarcated as S3dC2 where 'S' represents for 'Satna' Soil Series, '3' for Moderately deep soil depth, 'd' for gravelly sandy loam surface texture, 'C' for gentle sloping (3-5%), '2' for Moderate water erosion

The detailed 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.** An analytical method is described in **Annexure –IV.**The Glossary of Scientific terms used in this report is given in **Annexure –V. T**he symbols used in the report are also illustrated in **Annexure-VI.**

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