

Report on Detailed Soil Survey and Land Use of 2C1B8a1, 2, 3, 4, 5, 6, 7 & 8, b1, 2, 3, 4, 5 & 6, c1 & 4, d1, 2, 5, 6 & 7, f1, 5, m2, 3 & 6, n1 & 4, q3, 4, 5, 6 & 7, r1 & 3, s1, 3, 4, 5, u2, 6 and 7 Micro watersheds of Lower Ken Sub Catchment of Ken FPR Catchment, Tehsil-Rajnagar, District- Chhatarpur, Madhya Pradesh.

## ABSTRACT

1. **Survey area** : Report on Detailed Soil Survey and Land Use of 2C1B8a1, 2, 3, 4, 5, 6, 7 & 8, b1, 2, 3, 4, 5 & 6, c1 & 4, d1, 2, 5, 6 & 7, f1, 5, m2, 3 & 6, n1 & 4, q3, 4, 5, 6 & 7, r1 & 3, s1, 3, 4, 5, u2, 6 and 7 Micro watersheds of Lower Ken Sub Catchment of Ken FPR Catchment, Tehsil-Rajnagar, District- Chhatarpur, Madhya Pradesh.
2. **Geo-graphical Location** : Lies between 24° 45' to 25° 0' N Latitude and between 79° 30' to 80° 5' E Longitude
3. **Type of Survey** : Detailed Soil Survey using Remote sensing techniques
4. **Base map used** : Survey of India Toposheets & Google maps
5. **Total area mapped** : 30,798 ha
6. **Agro Climatic Region** : VIII-Central Plateau & Hill region
7. **Period of Survey** : December, 2012 and January, 2013
8. **Scale of map** : Survey of India Toposheets on 1:50,000 scale (Enlarged on 1:12500 scale) & 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)	8	4498	14.61
2.	Devgaon(D)	8	6252	20.30
3.	Garapura(G)	4	1838	5.97
4.	Karri(K)	5	4309	13.99
5.	Khajuraho(KH)	2	1469	4.77
6.	Koda(KD)	2	420	1.36
7.	Piaya(P)	2	351	1.14
8.	Rajnagar(R)	1	453	1.47
9.	Satna(S)	6	7890	25.62
10.	Water Bodies	-	2781	9.03
11.	Miscl. Lands	-	537	1.74
	<b>Total</b>	<b>38</b>	<b>30,798</b>	<b>100.00</b>

10. **Distribution of Area under Different Depth Classes:**

Soil Depth Class	Area in ha	Percentage
Shallow	12672	41.15
Moderately deep	8241	26.76
Deep	4309	13.99
Very deep	2258	7.33
Water bodies	2781	9.03
Miscl. Lands	537	1.74
<b>Total</b>	<b>30,798</b>	<b>100.00</b>

11.

**Distribution of Area under Different Soil Erosion Classes:**

Erosion Class	Area in ha.	Percentage
None to slight erosion	544	1.77
Moderate erosion	20466	66.46
Severe erosion	6470	21.00
Water bodies	2781	9.03
Miscl. Lands	537	1.74
<b>Total</b>	<b>30,798</b>	<b>100.00</b>

12. **Distribution of Area under Different Land Capability Classes:**

Land Capability Class	Area in ha	Percentage
II	5214	16.93
III	9594	31.15
IV	10750	34.91
VI	1469	4.77
VII	453	1.47
Water Bodies	2781	9.03
Miscl. Lands	537	1.74
<b>Total</b>	<b>30,798</b>	<b>100.00</b>

13. **Distribution of Area under Different Slope Classes:**

Slope Classes	Area in ha	Percentage
Very gentle slope(B)	11613	37.70
Gentle slope(C)	12469	40.49
Moderate slope(D)	1416	4.79
Strong slope(E)	867	2.81
Moderately steep slope(F)	602	1.96
Steep slope(G)	453	1.48
Water bodies	2781	9.03
Miscl. Lands	537	1.74
<b>Total</b>	<b>30798</b>	<b>100.00</b>

#### **14. Salient Features of the area:**

- ❖ 6567 ha (21.32 %) area is covered by deep to very deep soils.
- ❖ 12672 ha (41.15 %) area is covered by shallow soils.
- ❖ 8241 ha (26.76) area is covered by moderately deep soils.
- ❖ 6470 ha (21.00 %) area is affected by severe erosion and thus urgently require integrated soil conservation measures.
- ❖ 14808 ha (48.08%) area is suitable for agriculture and 10750 ha (34.91%) area is marginally suitable for agriculture.
- ❖ 1922 ha (6.24%) lands may be brought under agro-horticulture or pasture development.
- ❖ 2781 ha (9.03%) area is under water bodies (Tank, River etc) and 537 ha (1.74%) area is covered under miscellaneous land ( Habitation, Road etc. ).

## 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. The symbols used in the report are also illustrated in Annexure-VI.

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