Detailed Soil Survey and Land Use Plan of 2A2E4f2, h1, h2, j1, m1, p1, q1 and2A2E5m1, n1, n2, p1, p2 & v2 microwatershedsinMaithan Dam Catchment(DVC) of Dist. Giridih, Jharkhand.

Abstract

1.	**Survey Area**	2A2E4f2, h1, h2, j1, m1, p1, q1 and 2A2E5m1, n1, n2, p1, p2, v2 microwatersheds of Maithan Dam Catchment(DVC) of P.S.- Giridih, Birhi, Bengabad, Jamua, Dist. Giridih, Jharkhand State
2.	**Geographical location**	Lies between 85º58′ to86º24′ East Longitude. and between 24º03′to 24º20′ North Latitude
3.	**Type of Survey**	Detailed Soil Survey using Remote Sensing technique
4.	**Total map Area**	43,264 ha
5.	**Agro-climatic region**	Eastern plateau and hills (zone no. 7) as per National Planning Commission(1989)
6.	**Base Map used**	High Resolution Satellite Imageries on 1:12,500 scale
7.	**Period of Survey**	May, 2012 to June,2012.

Soil Series Mapped and their Area Extent

Sl.No.	Name of Soil Series	No. of Mapping Units	Area (ha)	Area (%)
1	Bargarha	5	3,178	7.35
2	Bariabad	5	1,857	4.29
3	Bekolalpur	3	2,890	6.68
4.	Demnatanr	5	5,451	12.60
5.	Dhengadih	2	892	2.06
6.	Gazipur	3	698	1.61
7.	Giridih	2	801	1.85
8.	Kasiadih	2	402	0.93
9.	Leda	3	1,873	4.33
10.	Mahuatanr	5	3,781	8.74
11.	Mundradih	4	832	1.92
12.	Nawahar	3	1,533	3.54
13.	Paphundih	5	833	1.93
14.	Pesratanr	4	4,106	9.49
15.	Pokhariadih	5	3,345	7.73
16.	Sagarlal	3	897	2.07

Sl.No.	Name of Soil Series	No. of Mapping Units	Area (ha)	Area (%)
17.	Sikdardih	4	4,091	9.46
18.	Misc	4	5,804	13.42
Total		**67**	**43,264**	**100.00**

Distribution of Area under Different Soil Erosion Classes.

Sl. No.	Erosion classes	Area (ha)	Area (%)
1.	None to slight water erosion	15,171	35.07
2.	Moderate water erosion	7,496	17.33
3.	Severe water erosion	10,199	23.57
4.	very severe water erosion	4,594	10.62
5.	Misc.	5,804	13.42
	Total	**43,264**	**100.00**

Distribution of Area under Different Slope Classes

Sl. No.	Slope Classes	Area (ha)	Area (%)
1.	Very gently(1-3%) sloping	10,352	23.93
2.	Very gently(1-3%) sloping, terraced to nearly level(0-1%)	8,112	18.75
3.	Gently(3-5%) sloping	12,580	29.08
4.	Gently(3-5%) sloping, terraced to nearly level(0-1%)	5,314	12.28
5.	Moderately(5-10%) sloping	269	0.62
6.	Strongly(10-15%) sloping	652	1.51
7.	Steep(25-33%) sloping	148	0.34
8.	Very steep(33-50%) sloping	33	0.08
9.	Misc.	5,804	13.42
	Total	**43,264**	**100.00**

Distribution of Area under Different Land Capability Classes

Sl. NO.	LCC	Area (ha)	Area (%)
1.	II	13782	31.86
2.	III	8503	19.65
3.	IV	5524	12.77
4.	VI	8818	20.38
5.	VII	833	1.93
6.	Misc.	5804	13.42
	Total	**43,264**	**100.00**

Salient Features of the Area

i) The survey area comprises 14 microwatersheds

ii) Out of a total of 43,264 ha of the survey area 10,199ha(23.57%) and 4,594 ha (10.62%) suffers from severe and very severe water erosion respectively, which needs immediate attention for appropriate soil conservation measures.

iii) About 64% of area is suitable for agriculture.

iv) Seventeen soil series have been identified and mapped in the study area.

v) About 13,782ha(31.86%) comes under class II land which have great potential for wide variety of crops and can be advised for cereal based cropping system.

vi) The areas under study have rainfed crop area. So assured irrigation and effective crop rotation is highly needed for increasing cropping intensity.

vii) About 12.77% area placed under LCC – IV marginally suited for agriculture can be adopted for silvi-pastoral system, whereas nearby 20.38% area categorized under class VI is suitable for pasture/ grassland under restricted biotic interference.

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 may locate the area of his interest on the soil map appended with the report. On the map, each soil mapping unit has been delineated are represented by symbolic expression. The abbreviated symbol of mapping unit reflects information about the name of soil series, soil depth, surface texture, land slope and gradient erosion status. The soil mapping unit is demarcated as MT3cC3S^R^where 'MT' represents for 'Mahuatanr' Soil Series, '3' for moderately deep soil depth, 'c' for loamy sand surface texture, 'C' for gently sloping (3-5%), '3' for severe water erosion and S^R^ for moderately stony rocky.

The details of the soil mapping units, their description and multipurpose interpretative groupings have been shown in **Appendix-I** (Guide to Soil Mapping Units). The differentiating/morphological characteristics of Soil Series are furnished in **Table-6** and the Pedondescription of the Soil Series are described in **Appendix-II**. Microwatershedwise mapping units along with their area extent, present land use and management status are given in **Appendix -IV**.

The analytical methods used for soil analysis and the symbols used in the report are also illustrated in **Appendix-III & V** respectively.

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