Report on Detailed Soil Survey and Land Use of 3C3A7c7, 3C3A7d6, 3C3A7d7, 3C3A8h3, 3C3A8h4, 3C3A8h5, 3C3A8h6, 3C3A8h7 and 3C3A8h8 Microwatersheds of Brahmaputra Basin of P.S. Bishalgarh, Srinagar, Amtali and Takerjola of West Tripura district, Tripura using Remote Sensing and GIS Technique

Abstract

1.	**Survey area**	3C3A7c7, 3C3A7d6, 3C3A7d7, 3C3A8h3, 3C3A8h4, 3C3A8h5, 3C3A8h6, 3C3A8h7 and 3C3A8h8 Microwatersheds of Brahmaputra Basin of P.S. Bishalgarh, Srinagar, Amtali and Takerjola of West Tripura district, Tripura
2.	**Geographical location**	$23^{o}39'0''$ to $23^{o}45'35''$ North Latitude and 91^{o} 14′ 0″ to $91^{o}27'30''$ East Longitude
3.	**Type of Survey**	Detailed Soil Survey using Remote Sensing Technique
4.	**Base Map used**	i. SOI Toposheet ii. Satellite Imagery on 1:8,000 scale
5.	**Total map area**	11826 ha
6.	**Agro-climatic region**	Eastern Himalayan region-II as per National Planning Commission(1989)
7.	**Period of Survey**	January, 2013 to May, 2013.

8. Name of Soil series and their areal extent mapped in different micro watersheds

Sl.No.	Name of Soil Series	No. of mapping units	Area in ha	Percentage
1	Amtali	1	10	0.08
2	Bishalgarh	2	222	1.88
3	Champamura	7	1125	9.51
4.	Gopinagar	2	59	0.50
5.	Melaghar	5	1223	10.34
6.	Murabari	7	6732	56.93
7.	Rautkhola	4	245	2.07
8.	Sutarmura	4	1195	10.10
9.	Misc.(Habitation Reservoir waterbody, tank and river)	4	1015	8.58
	Total	**36**	**11826**	**100.00**

9. Distribution of area under different soil erosion classes.

Erosion classes	Area in ha	Percentage
None to slight water erosion	2987	25.26
Moderate water erosion	5740	48.54
Severe water erosion	2084	17.62
Misc.	1015	8.58
Total	**11826**	**100**

10. Distribution of area under different slope classes

Slope Classes	Area in ha	Percentage
Nearly level(0-1%) sloping	1565	13.23
Very gently(1-3%) sloping, terraced to nearly level(0-1%)	1389	11.75
Gently(3-5%) sloping	4263	36.05
Gently(3-5%) sloping, terraced to nearly level(0-1%)	33	0.28
Moderately(5-10%) sloping	2436	20.60
Strongly(10-15%) sloping	618	5.23
Moderately steep (15-25%) sloping	507	4.29
Misc.	1015	8.58
Total	**11826**	**100.00**

11. Distribution of area under different land capability classes

LCC	Area in ha	Percentage
II	1565	13.23
III	6790	57.42
IV	1331	11.25
VI	372	3.15
VII	753	6.37
Misc.	1015	8.58
Total	**11826**	**100.00**

12. Salient Features of the area:-

1. Entire survey area is covered by very deep soil.

2. About 1125 ha(9.52%) area falls under strongly sloping to moderately steep hill side slope, 6732 ha (56.93%) area is under gently to moderately sloping upland, and the remaining 2954 ha(24.98%) area is under nearly level to very gently sloping valleys and stream banks.

3. About 2084 ha(17.62%) area is suffering from severe water erosion and requires integrated soil conservation measures urgently.

4. Nearly 2954 ha(24.98%) area is well managed and covered under agriculture.

5. About 8355ha (70.65%) area comes under land capability class II & III which can be used for intensive agriculture by providing effective soil-water conservation measures and assured irrigation facility.

6. Nearly 61.03% area under survey having slope classes of nearly level to gently sloping which have the land capability class II & III are best for suited agriculture production.

How to Use Soil Survey Report

The present report furnishes detailed information on various characteristics of the studied 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 given and corrective measures have also been suggested. The modern technologies in the form of remote sensing and geographical information system have provide great vistas for acquisition, analysis & monitoring of soil & land resources on real time basis.

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 AM5kB(A)1 where 'AM' represents for 'Amtali' Soil Series, '5' for very deep soil depth, 'k' for sandy clay loam surface texture, 'B(A)' for nearly level to very gently sloping (0-3%) bunded with nearly level to level(0-1%), '1' for none to slight water erosion.

The detailed of the soil mapping units, their description and multipurpose interpretative groupings have been shown in **Appendix-I** (Guide to Soil Mapping Units). The differentiating characteristics of Soil Series are furnished in **Table-7** and the Typifying Pedon of the Soil Series are described in **Appendix-II**. Microwatershed-wise mapping units along with their area extent, present land use, management and Land capability 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.

Any comment and suggestion on the report would be welcome. For any further enquiry / or clarification, correspondence or personal contact may be established, with the

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