

Report on prioritization of Micro-watersheds of 3A1B (1-4), 3A1C (1-8) and 3A1D 4 (Part) watersheds of Tista RVP Catchment of Brahmaputra Basin (Right Bank), Districts East, West, South and North of Sikkim and Darjeeling district of West Bengal – Using Remote Sensing & GIS Technique

Abstract

- 1. Survey Area** : 3A1B(1-4), 3A1C(1-8) and 3A1D4 (Part) watersheds of Tista RVP Catchment of Brahmaputra Basin (Right bank), Districts East, West, South and North of Sikkim and Darjeeling district of West Bengal
- 2. Total Area Mapped** : 781423 ha.
- 3. Location** : 88⁰ 00' to 88⁰ 55' E Longitudes
27⁰ 05' to 28⁰ 09' N Latitude
- 4. Agro-climatic Zone** : Humid High rainfall North Eastern Zone (3)
- 5. Kind of Survey** : RR Survey for demarcation of priority micro watersheds using Remote Sensing Technique.
- 6. Period of Survey** : November, 2006 to February, 2007
- 7. Base Map Used** : Survey of India toposheets on 1: 50,000 scale and IRS-P6 LISS-III Precision Geo-coded FCC(4, 3, & 2) Satellite Imagery (1:50,000)

8. Extent of areas under different Erosion Intensity Mapping Unit

Sl.No.	EIMU	Weightage Value	Delivery Ratio	Area (ha)	Area(%)
1	AL01	12	0.58	4724	0.60
2	AL02	14	0.66	148	0.02
3	AC04	13	0.55	54	0.01
4	GG01	15	0.65	363	0.05
5	GG02	15	0.65	1800	0.23
6	GG03	17	0.62	2143	0.27
7	GG04	18	0.67	9236	1.18
8	GG05	18	0.67	1798	0.23
9	GG06	18	0.68	46928	6.01
10	GG07	17	0.64	85086	10.89
11	GG08	18	0.74	82623	10.57
12	GG09	19	0.79	1583	0.20
13	GG10	19	0.81	12124	1.55
14	GG11	21	0.86	12849	1.64

10. Priority Categorisation

Sl. No.	Priority Category	No. of Microwatersheds	Area (ha).	Percentage
1	Very High (1700 and above)	149	213398	27.31
2	High (1600-1699)	24	28829	3.69
3	Medium (1500-1599)	34	43971	5.63
4	Low (1400-1499)	48	58502	7.49
5	Very Low (Below 1400)	355	436723	55.89
	Grand Total	610	781423	100.00

11. Districtwise distribution of Priority areas

Priority Category	No of M/S	WB	Sikkim				Area (ha)	%
		Darjeeling	East	West	North	South		
Very High	149		5334	18628	189098	338	213398	27.31
High	24		731	3771	24294	33	28829	3.69
Medium	34	953	5018	3721	30662	3617	43971	5.63
Low	48	952	5046	9806	36509	6189	58502	7.49
Very Low	355	68751	79978	80908	143957	63129	436723	55.89
Total	610	70656	96107	116834	424520	73306	781423	100

12. Salient Features

- ★ Out of total catchment area, 213398 ha (27.31%) covered by 149 micro watersheds comes under very high priority and 28829 ha (3.69 %) spread over 24 micro watersheds comes under high priority
- ★ North Sikkim is the worst suffered as compared to other districts. Darjeeling district has no priority watersheds under very high and high.
- ★ 3A1C6 watershed is the most vulnerable to degradation followed by 3A1C7 and 3A1C3 watershed.
- ★ Of the whole catchment, 118130 ha (15.12 %) land suffer from severe erosion hazards, 2624ha (0.34%) land suffer from severe to very severe erosion hazards and 13707 ha (1.75%) land suffer from moderate to severe erosion.
- ★ Nearly 14.32% of the total survey area is unmanaged and 4.86% is under poorly managed while 21.41% is moderately managed.
- ★ Steep to very very steep slope occupies 58.22% of the total area that demand suitable soil-water conservation measures under integrated watershed management programme.
- ★ Nearly 0.62% of the total survey area spreads over river terrace, and are used for agriculture under appropriate agronomic practices.