

Report on Prioritisation of Micro-watersheds of 3A5B, 3A5C and 3A5D Sub-catchment of Brahmaputra Basin, East Siang, West Siang, Upper Siang, Lower Dibang, Upper Subansiri district of Arunachal Pradesh and Dhemaji district of Assam

ABSTRACT

1. **Survey Area** : 3A5B, 5C and 5D Subcatchment (Siang catchment) of 3A5 Catchment in the Water Resource Region-3, East Siang, West Siang, Upper Siang, Lower Dibang and Upper Subansiri districts of Arunachal Pradesh and Dhemaji district of Assam
2. **Location** : 27° 40' to 29° 20' N Latitudes and 93° 38' to 95° 38' E Longitudes
3. **Total Area** : 1640735 ha
4. **Period of field visit** : January to March 2009
5. **Type of Survey** : Rapid Reconnaissance Survey using Remote Sensing Technique
6. **Base Material** : Survey of India Toposheets (1:50,000) and IRS-P6 LISS-III Precision Geo-coded FCC(3, 2, & 1) Satellite Imagery (1:50,000)

7. Extent of different Runoff Potential Mapping Units

Sl. No.	RPMU	Runoff Potential Value	Area in ha.	Area(%)
1.	AC01	59	5572	0.34
2.	AC02	64	3175	0.19
3.	AC03	59	2865	0.17%
4.	AC04	57	2794	0.17%
5.	AL01	55	5545	0.34
6.	AL02	54	22913	1.40
7.	AL03	55	10501	0.64
8.	AL04	55	18482	1.13
9.	AL05	59	11122	0.68
10.	AL06	55	4761	0.29
11.	AL07	54	10491	0.64
12.	AL08	59	820	0.05%
13.	AL10	56	27173	1.66
14.	AL11	56	1070	0.07
15.	SQ01	62	5189	0.32
16.	SQ02	61	1900	0.12
17.	SQ03	64	299754	18.27
18.	SQ04	63	145667	8.88

<i>Sl. No.</i>	<i>RPMU</i>	<i>Runoff Potential Value</i>	<i>Area in ha.</i>	<i>Area(%)</i>
19.	<i>SQ06</i>	68	244147	14.88
20.	<i>SQ07</i>	72	114631	6.99
21.	<i>SQ08</i>	85	57331	3.49
22.	<i>SQ09</i>	76	150000	9.14%
23.	<i>SQ10</i>	92	19809	1.21
24.	<i>SQ11</i>	85	113917	6.94
25.	<i>SQ12</i>	84	35939	2.19
26.	<i>SQ13</i>	91	16588	1.01
27.	<i>SQ14</i>	58	15275	0.93
28.	<i>SQ15</i>	60	21825	1.33
29.	<i>SQ16</i>	65	28269	1.72
30.	<i>SQ17</i>	68	11298	0.69
31.	<i>SQ18</i>	80	4045	0.25
32.	<i>SQ19</i>	75	17052	1.04
33.	<i>SQ20</i>	82	4714	0.29
34.	<i>SQ21</i>	76	2895	0.18
35.	<i>SQ22</i>	59	3626	0.22
36.	<i>SQ23</i>	62	5894	0.36
37.	<i>SQ24</i>	65	2941	0.18
38.	<i>SQ25</i>	77	3095	0.19%
39.	<i>SQ28</i>	59	2899	0.18%
40.	<i>SQ29</i>	60	728	0.04
41.	<i>SQ30</i>	72	612	0.04%
42.	<i>HS</i>	0	5640	0.34
43.	<i>LS</i>	0	3626	0.22
44.	<i>RI</i>	0	46377	2.83
45.	<i>SN</i>	0	127768	7.79
	<i>Grand Total</i>		<i>1640735</i>	<i>100</i>

8. Hydrological Divisions :Water Resource Region (3)

Basin (3A)

Catchment (3A5)

Subcatchment (3A5B)

Watersheds (3A5B 1, 2,)

Subwatersheds (3A5B 1a,.b, .c.....,)

Microwatersheds (3A5B1a1..., 3A5B2a1, ...)

9. Soil Erosion Status of the survey area:

Erosion Classes	Dhemaji	East Siang	West Siang	Upper Siang	Lower Dibang Valley	Upper Subansiri	Area (ha)	%
None to slight erosion	9168	85752	216101	165252	9484	15480	501237	30.55
Slight to Moderate erosion	7828	63997	112407	104270	15957	418	304877	18.58
Moderate erosion	1867	46341	57477	87310	9177	3555	205727	12.54
Moderate to Severe erosion	270	43379	43613	100999	20059		208320	12.70
Severe erosion		47844	60650	114949	13718	2	237163	14.45
Miscellaneous	12299	24608	51974	83468	3599	7463	183411	11.18
Total	31432	311921	542222	656248	71994	26918	1640735	100

10. Priority Categorization :

Sl. No.	Priority Category	No.of Microwatersheds	Area (ha)	Percentage
1	Very High (above 70)	391	333943	20.35
2	High (66-70)	435	373930	22.79
3	Medium (61-65)	492	434640	26.49
4	Low (56-60)	381	338030	20.60
5	Very Low (55 & below)	130	160192	9.76
	Grand Total	1829	1640735	100

11. State and District wise Priority Categorization:

Priority Category	Dhemaji	East Siang	West Siang	Upper Siang	Lower Dibang Valley	Upper Subansiri	Area (ha)	%
Very High (above 70)		53208	61689	189912	29134		333943	20.35
High (66-70)		53749	110782	192467	15463	1469	373930	22.79
Medium (61-65)		54754	210394	148582	14242	6668	434640	26.49
Low (56-60)		52395	156507	109487	1405	18236	338030	20.60
Very Low (55 & below)	31432	97815	2850	15800	11750	545	160192	9.76
Total	31432	311921	542222	656248	71994	26918	1640735	100

12. Salient Features:

- 3A5B, C, D subcatchments have been subdivided into 1829 microwatersheds following the delineation and codification method outlined in Watershed Atlas of India (1:1 M scale).
- Out of 1640735 hectares surveyed area, 333943 ha. (20.35%) covered by 391 microwatersheds have been categorized under very high priority and 373930ha. (22.79%) covered by 435 microwatersheds have been categorized as high priority area which need immediate attention for suitable runoff control measures under integrated watershed management programme.
- Among the districts, Upper Siang, West Siang, East Siang and Lower Dibang Valley districts of Arunachal Pradesh are the most affected by runoff water which occupies the entire very high priority area comprising about 189912 ha, 61689 ha, 53208 ha and 29134 ha respectively. On the other hand Dhemaji district of Assam and Upper Subansiri district of Arunachal Pradesh have no very high priority area. But Upper Siang, West Siang, East Siang, Lower Dibang Valley and Upper Subansiri districts of Arunachal Pradesh and have 192467 ha, 110782 ha, 53749ha, 15463ha and 1469 ha area with high priority whereas Dhemaji district of Assam has no high priority areas.
- About 322656 ha (19.66%) area of the survey area is unmanaged to poorly managed while 437927 ha. (26.69%) area is moderately managed.
- Severely eroded lands occupying 237163 ha (14.45%) and moderately to severely eroded land covering 208320 ha (12.70%) need proper soil water conservation measures.