

REPORT ON PRIORITIZATION OF MICROWATERSHEDS IN 5B1A1 TO 5B1A7 WATERSHEDS OF 5B1A SUBCATCHMENT (NON RVP) IN DHARWAD, HAVERI, SHIMOGA AND UTTAR KANNADA DISTRICTS OF KARNATAKA

ABSTRACT

- 1. Survey area** : 5B1A1 to 5B1A7 watersheds of 5B1A Subcatchment (Non RVP) in Dharwad Haveri, Shimoga and Uttar Kannada districts of Karnataka.
- 2. Location** : 74° 15' to 75°05' E Longitude
14° 15' to 15° 30' N Latitude
- 3. Total area surveyed** : 5,33,569 ha
- 4. No. of microwatersheds** : 377
- 5. Agro-climatic region** : Zone XII – The West Coast Plain and Hill region
- 6. Type of survey** : Rapid Reconnaissance Survey for Priority delineation of microwatersheds
- 7. Period of survey** : February 2006 -March 2008
- 8. Base map** : Survey of India toposheets on 1:50,000 scale
- 9. Toposheets** : 48I/12, 13,14,15,16, 48J/05,06,07, 08, 09, 10,11,12,13,14,15,16, 48M/03, 04 and 48N/01
- 10. Hydrological divisions** :
 - a) Region - 5
 - b) Basin - 5B
 - c) Catchment - 5B1
 - d) Subcatchment - 5B1A
 - e) Watersheds - 5B1A1 to 5B1A8
 - f) Sub watersheds - 5B1A1a, 5B1A1b
 - g) Micro-watersheds- 5B1A1a1, 5B1A1a2.... etc

11. Extent of different Runoff Potential Mapping Units

Sl.No.	RPMU	Runoff Potential Value	Area in ha.	Area (%)
1	A01	54	9877	1.85%
2	A02	55	364	0.07%
3	CA01	53	980	0.18%
4	CA02	55	2089	0.39%
5	CA03	52	3231	0.61%
6	G01	67	58951	11.05%
7	G02	64	5639	1.06%
8	G03	67	2268	0.43%
9	G04	64	294	0.06%
10	G05	60	800	0.15%
11	G06	62	14606	2.74%
12	G07	60	5423	1.02%
13	G08	65	548	0.10%
14	G09	66	534	0.10%
15	G10	59	1324	0.25%
16	G11	58	7004	1.31%
17	G12	56	11019	2.07%
18	G13	56	402	0.08%
19	G14	57	602	0.11%
20	G15	66	200	0.04%
21	G16	59	3551	0.67%
22	G17	56	4596	0.86%
23	G18	56	4794	0.90%
24	G19	57	8884	1.67%
25	GW01	65	3454	0.65%
26	GW02	63	30132	5.65%
27	GW03	67	8898	1.67%
28	GW04	60	12044	2.26%
29	GW05	66	9518	1.78%
30	GW06	65	18943	3.55%
31	GW06	64	1735	0.33%
32	GW07	57	322	0.06%
33	GW08	57	18024	3.38%
34	GW10	62	19864	3.72%
35	GW11	54	23472	4.40%
36	GW12	60	982	0.18%
37	GW13	61	162	0.03%
38	GW14	57	8664	1.62%
39	GW15	56	17537	3.29%
40	GW16	55	56777	10.64%
41	GW17	53	3393	0.64%
42	GW18	61	19953	3.74%
43	GW19	55	38066	7.13%
44	GW20	58	41252	7.73%
45	LT01	66	3177	0.60%
46	LT02	73	2137	0.40%
47	LT03	62	2728	0.51%
48	LT04	64	1160	0.22%
49	LT05	64	315	0.06%

Sl.No.	RPMU	Runoff Potential Value	Area in ha.	Area(%)
50	LT06	56	6281	1.18%
51	LT07	55	1462	0.27%
52	LT08	57	1419	0.27%
53	LT09	60	146	0.03%
54	LT10	58	17178	3.22%
55	LT11	56	647	0.12%
56	HAB	0	6319	1.18%
57	TANK	0	1411	0.26%
58	ROC	0	1016	0.19%
59	RIVER	0	5212	0.94%
60	ML	0	1789	0.33%
TOTAL			533569	100.00%

12. District wise distribution of area (ha) under different priority categories

State/Priority Category/No of MWS	Karnataka				Total	Perce-ntage
	Dharwad	Haveri	Shimoga	Uttar Kannada		
Very High	0	0	0	11159	11159	2.09
MWS	0	0	0	8	8	
High	5820	0	46	183976	189842	35.58
MWS	4		1	132	137	
Medium	92741	13416	1699	195760	303616	56.90
MWS	68	20	3	147	238	
Low	2197	0	0	26755	28952	5.426
MWS	3	0	0	18	21	
Total	100758	13416	1745	417650	533569	100
Total No of MWS	75	20	4	305	404	

(Note: Since some of the microwatersheds falls in different districts the total number of microwatersheds may vary in the table above)

13. Watershed wise Distribution of area under different priority categories

Watersheds/ Priority category No. of MWS	Watersheds							Total
	5B1A1	5B1A2	5B1A3	5B1A4	5B1A5	5B1A6	5B1A7	
Very High	4708	3697	2754	0	0	0	0	11159
No. of MWS	3	3	2	0	0	0	0	8
High	26238	65383	47900	30892	11512	2097	5820	189842
No. of MWS	17	51	31	23	8	2	4	136
Medium	16072	26111	10727	13156	45323	75843	116384	303616
No. of MWS	12	17	7	10	31	55	82	214
Low	3124	0	0	0	1110	20497	4221	28952
No. of MWS	2				1	13	3	19
Total Area	50142	95191	61381	44048	57945	98437	126425	533569
TOTAL No. of MWS	34	71	40	33	40	70	89	377

14. Distribution of area and number of micro watersheds under different priority categories

Sl.No.	Priority Category (RPI)	No. of Microwatersheds	Area in(ha)	Percentage
1	Very High (above 65)	8	11159	2.09
2	High (61-65)	136	189842	35.58
3	Medium (56-60)	214	303616	56.9
4	Low (51-55)	19	28952	5.43
Grand Total		377	533569	2.09

15. Distribution of area under different erosion classes

Sl. No.	Erosion	Area (ha)	Percentage
1	None to slight erosion	78442	14.7
2	Slight to Moderate erosion	6792	1.27
3	Moderate erosion	321053	60.17
4	Moderate to Severe erosion	59019	11.07
5	Severe erosion	52516	9.84
6	Misc	15747	2.95
	Total	533569	100.0

Salient features

- (i) Out of 377 micro watersheds, only eight falls under very high priority while 136 falls under high priority category, 214 falls under medium priority and 19 falls under low priority category.
- (ii) Out of total surveyed area of 5, 33,569 ha area, 11159 ha (2.09%) falls under very high priority category and 1, 89,842 ha (35.58%) falls under high priority category.
- (iii) Moderate erosion is prevalent over an area of 3,21,053 ha (60.17%) while moderate to severe erosion and severe erosion hazards are prevalent over an area of 59019 ha (11.07%) and 52516 ha (9.84%) respectively in the surveyed area.
- (iv) Hillside slopes steep to very steep (25-50%) covers an area of 115750 ha (21.69%) in the surveyed area whereas an area of 68,878 ha (12.91%) is under strong to steep slope (10-25%) .
- (v) Out of five landscapes such as alluvial, coastal alluvial, granite, greywacke and laterite occurring the area, Grey wacke and granite landscape occupies majority of the area with 333192 (62.45%) and 1,31,439 ha (24.63%) respectively. In other landscapes, laterite covers about 7% where as alluvium and Coastal Alluvium covers about 3% of the total area.
- (vi) Nearly 3,08,076 ha (57.74%) area is under deciduous dense to moderately dense forest; 31,645ha (5.8%) under different types of plantation (Orchard, cashew nut, coconut, mango etc), 1,38,608 ha (25.9%) under cultivation and 8999ha (1.7%) under grasslands and open scrubs in the surveyed area.
- (vii) Very Deep soil covers an area of 30,219 ha (5.7%) Deep to very deep soils occupy 4,84,570 ha (91%) and shallow to moderately deep soils occupy 3033 ha (0.6%) of the total surveyed area.

HOW TO USE SOIL SURVEY REPORT

The report embodies the results of “Rapid Reconnaissance Survey” which aims at identifying the micro watersheds which are relatively more prone to soil erosion and need immediate suitable soil and water conservation measures. Further this report furnishes information on the general characteristics of the catchment such as location and extent, physiography, relief, drainage, geology, climate, land use, agriculture, natural vegetation and soils.

The database for this report was generated through field traverse during the rapid reconnaissance survey carried out in 5B1A1 to 5B1A7 watersheds of 5B1A subcatchment. The survey area covers an area of 5,33,569 hectare comprising 377 microwatersheds. The priorities are fixed on the basis of “Runoff Potential Index “Higher value of RPI suggests high priority and vice versa. Demarcated microwatersheds map sheets pertaining to 5B1A subcatchment on 1:50000 scale are appended with this report

In the maps that are appended with this report, each microwatershed has been marked with a code like 5B1A1a1, which is the representative abbreviated microwatershed code. In this code, first numeral ‘5’ indicates water resources region (flowing to Arabian sea); ‘B’ indicates basin (Southern Western Ghats); ‘1’ denotes catchment; ‘ A ‘ for Subcatchment; ‘ 1’ for watershed , ‘a’ for sub watershed and ‘1’ for microwatershed. Within each microwatershed Runoff Potential Mapping Units (RPMU) are marked according to geological landscapes such as CA01, CA02...etc. Each RPMU units connotes a set of soil and land characteristics viz. physiography, slope, landform, land use, soil depth, color, texture, stoniness, type of erosion, soil conservation practices. For details, of the legend description of mapping units reference can be made to the Table Description of Mapping Units. Annexure-I of the report furnishes information on Microwatershed wise distribution of Runoff Potential Mapping Units (RPMU) their runoff potential value, relative RPI and Runoff Potential Index microwatershed codes, runoff potential index and grading of microwatersheds with priority category. In Annexure II Distribution of Micro-watersheds under different priority categories has been given in the descending order of priority.

The very high and high priority micro-watersheds are shown on appended map by horizontally hatching. These priorities are suggestive of the relative severity of runoff problem in the catchment. For any clarification and comment on this report contact may be made to the following addresses

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