REPORT ON PRIORITIZATION OF MICROWATERSHEDS IN 4B3D1 TO 4B3D7 WATERSHEDS OF 4B3D SUBCATCHMENT (NON-RVP) IN MANDYA, MYSORE, RAMANAGAR AND TUMKUR DISTRICTS OF KARNATAKA STATE.

ABSTRACT

1. **Survey area** : 4B3D1 TO 4B3D7 watersheds of 4B3D Subcatchment (Non RVP) in Mandya, Mysore, Ramanagar and Tumkur districts of Karnataka state.

2. **Location** : 76° 34' to 77°20' E Longitude
12 °9' to 13° 11' N Latitude

3. **Total area surveyed** : 581734 ha

4. **No. of microwatersheds** : 513

5. **Agro-climatic region** : Zone VI & VII – Southern Dry Zone and Southern Transition Zone

6. **Type of survey** : Rapid Reconnaissance Survey for priority Delineation of microwatersheds

7. **Period of survey** : December 2007-March 2008

8. **Base map** : Survey of India toposheets on 1:50,000 scale

9. **Topo-sheets** : 58C/7, 58C/8, 58C/12, 58C/16
58 D/9, 58D/10, 58D/13, 58D/14, 58D/15
58H/1, 58H/2, 58H/3, 58H/4,58H/58H/6,
58H/7, 58H/8, 58H/11, and 58H/12

10. **Hydrological divisions** : a) Region – 4
b) Basin – 4BA
c) Catchment – 4B3
d) Subcatchment – 4B3D
e) Watersheds – 4B3D1to 4B3D7
f) Sub watersheds - 4B3D1a, 4B3D1b
g) Micro-watersheds - 4B3D1a1, 4B3D1a2…

7. Area Extent of different Run-off Potential Intensity Mapping Units

	Sl.No.	RPMU	Runoff Potential Value	Area in ha.	Area (%)
	1	**A01**	59	2995	0.51
	2	**G01**	75	6749	1.16
	3	**G02**	89	1939	0.33
	4	**G03**	88	2852	0.49
	5	**G04**	63	260	0.04
	6	**G05**	62	9060	1.56
	7	**G06**	73	17479	3.00
	8	**G07**	58	9758	1.68
	9	**G08**	65	20236	3.48
	10	**G09**	68	4382	0.75
	11	**G10**	74	10921	1.88
	12	**G11**	65	19445	3.34
	13	**G12**	56	35254	6.06
	14	**G13**	62	41236	7.09
	15	**G14**	58	74770	12.85
	16	**G15**	56	122627	21.08
	17	**G16**	60	27805	4.78
	18	**G17**	57	42058	7.23
	19	**G18**	59	103355	17.77
	20	**H**	0	7481	1.29
	21	**R**	0	5296	0.91
	22	**ROC**	0	3365	0.58
	23	**T**	0	12411	2.13
			Grand Total	**581734**	**100.00**

12. Priority Categorization:

S.No	Priority Category	No of Micro watersheds	Area in ha.	Area Percentage
1	Very High (above 65)	24	24605	4.23
2	High (61-65)	130	145657	25.04
3	Medium (56-60)	359	411472	70.73
Total		**513**	**581734**	**100.0**

13. Watershed wise Distribution of area (ha) and number of microwatersheds under different priority categories

Priority category/ No. of MWS	Subwatersheds							Total Area	%
	4B3D1	4B3D2	4B3D3	4B3D4	4B3D5	4B3D6	4B3D7		
Very High	6610	968	4544	2948	0	3696	5839	24605	4.23
No. of MWS	8	1	4	3	0	3	5	24	
High	16697	6910	28313	21377	15506	14924	41930	145657	25.04
No. of MWS	18	6	27	19	13	12	35	130	
Medium	45470	70047	84200	50558	101303	41648	18246	411472	70.73
No. of MWS	40	62	76	47	87	33	14	359	
TOTAL AREA	68777	77925	117057	74883	116809	60268	66015	581734	100.00
Total No of MWS	66	69	107	69	100	48	54	513	

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

State/Priority Category /No of MWS	Karnataka					
	Ramanagar	Mandya	Mysore	Tumkur	Total Area	Percentage
Very High	6527	17065	0	1013	24605	4.23
No of MWS	8	19		1	28	
High	35316	96387	2044	11910	145657	25.04
No of MWS	36	90	2	13	141	
Medium	88658	211479	31415	79920	411472	70.73
No of MWS	101	219	36	91	447	
Total	130501	324931	33459	92843	581734	100.00
Total No of MWS	145	328	38	105	616	100.00

(Note: As some of the Microwatersheds falling in more than one district, the total number of microwatersheds may vary with the actual number of microwatersheds)

15. Distribution of area under different erosion classes

Erosion	Area(Ha)	Percentage
None to slight erosion	298840	51.4
Moderate erosion	170965	29.4
Moderate to Severe erosion	67664	11.6
Severe erosion	4791	0.8
Severe to Very severe erosion	10921	1.9
Misc	28553	4.9
Total	581734	100.0

16. Salient features

- A survey was undertaken under 4B3D subcatchment consisting of 513 micro-watersheds. The data reveals that 24 mocrowatersheds falls under very high priority category, 130 falls under high, 359 under medium priority category. It is also observed that none of the microwatersheds falls under low or verylow priority category.

- Geographically, out of total surveyed area of 581734 ha, only 24605 ha (4.2%) falls under very high priority category; 145657 ha (25.4%) falls under high priority and 411472 (70.73) falls under medium category.

- Geographically, moderate erosion hazards are present in 12853 ha (6.1%); moderate to severe erosion hazard are prevalent over an area of 44150 ha (20.9 %) and none to slight erosion in 298840 ha (51.4%).

- Upper pediplains occupy maximum area of 266438 (45.8%) ha in the surveyed area followed by stream banks 156334 (26.9) ha and pediments 89075 (15.3%) ha.

- Granite landscape occupies maximum area i.e., 550186 (94.6%) ha, followed by Alluvium landscape.

- Very gentle to gentle slope together covers an area of 53% (308496 ha) ha while area under gentle to moderate slope together covers an area of 99996 ha (17.2%). Similarly nearly 18.3% (106350 ha) area is together under nearly level to very gentle slope class

- Majority of the area are under cultivated lands, i.e., 434291 (74.7%) ha.

- Overall the surveyed area occupies deep to very deep soils and deep soils to an extent of 262645 ha (45.2%) and 148408 ha (25.5%) respectively; while shallow to moderately deep soils accounts to 140189 ha (24.1%).

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 4B3D1 to 4B3D7 watersheds of 4B3D subcatchment. The survey area covers an area of 518734 hectare comprising 513 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 4B3D 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 4B3D1a1, which is the representative abbreviated microwatershed code. In this code, first numeral '4' indicates water resources region (flowing to bay of Bengal); 'B' indicates basin (Cauvery Basin);'3' denotes catchment; ' D ' for Subcatchment; ' 1' for watershed , 'a' for sub watershed and '1' for microwatershed. Within each microwatersheds runoff potential mapping units (RPMU) are marked according to geological landscapes such as A01, G01, G02 …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 Annexure I. Whereas Annexure-II 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. Annexure-III lists microwatersheds 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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