

**REPORT ON PRIORITIZATION OF MICROWATERSHEDS IN 4B3E1 TO 4B3E5
WATERSHEDS OF 4B3E SUBCATCHMENT (NON-RVP) IN MANDYA, HASSAN,
TUMKUR, RAMNAGAR AND BANGALORE RURAL DISTRICTS OF KARNATAKA
STATE.**

ABSTRACT

- 1. Survey area** : 4B3E1 TO 4B3E5 watersheds of 4B3E Subcatchment (Non RVP) in Mandya, Hassan, Tumkur and Bangalore Rural districts of Karnataka state.
- 2. Location** : 76° 14' to 77°16' E Longitude
12° 47' to 13° 33' N Latitude
- 3. Total area surveyed** : 414245 ha
- 4. No. of microwatersheds** : 351
- 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** : November to December 2009
- 8. Base map** : Survey of India toposheets on 1:50,000 scale
- 9. Topo-sheets** : 57C/08, 57C/11, 57C/12, 57C/15, 57C/16
57 D/09, 58D/13
57G/03, 57G/04, 57G/07, 57G/08
- 10. Hydrological divisions** : a) Region – 4
b) Basin – 4B
c) Catchment – 4B3
d) Subcatchment – 4B3E
e) Watersheds – 4B3E1 to 4B3E7
f) Sub watersheds - 4B3E1a, 4B3E1b
g) Micro-watersheds - 4B3E1a1, 4B3E1a2...

11. Area Extent of different Run-off Potential Mapping Units

Sl.No.	RPMU	Runoff Potential Value	Area in ha.	Percentage
1	G01	87	3418	0.83
2	G02	79	3857	0.93
3	G03	64	2725	0.66
4	G04	67	7531	1.82
5	G05	54	132431	31.97
6	G06	56	23784	5.74
7	G07	61	133056	32.12
8	G08	70	29835	7.20
9	G09	60	10551	2.55
10	G10	55	9167	2.21
11	G11	58	8842	2.13
12	G12	59	495	0.12
13	G13	58	1211	0.29
14	G14	69	19759	4.77
15	Habitation	0	5624	1.36
16	RIVER	0	1615	0.39
17	ROC	0	4704	1.14
18	Tank	0	15640	3.78
Grand Total			414245	100.00

12. Priority Categorization:

S.No	Priority Category	No of Micro watersheds	Area in ha.	Area Percentage
1	Very High (above 65)	10	12952	3.13
2	High (61-65)	97	115791	27.95
3	Medium (56-60)	241	282332	68.15
4	Low (51-55)	3	3170	0.77
Total		351	414245	100

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

Priority category	Subwatersheds					Total Area	%
	4B3E1	4B3E2	4B3E3	4B3E4	4B3E5		
Very High	4807	0	0	0	8145	12952	3.0
No. of MWS	4	0	0	0	6	10	
High	25112	26314	25756	4013	34596	115791	28.0
No. of MWS	22	22	21	3	29	97	
Medium	61005	27949	58410	51851	83117	282332	68.2
No. of MWS	54	24	50	45	68	241	
Low	3170	0	0	0	0	3170	0.8
No. of MWS	3	0	0	0	0	3	
TOTAL AREA	94094	54263	84166	55864	125858	414245	100.00
Total No of MWS	83	46	71	48	103	351	

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

Priority Category	Bangalore Rural	Hassan	Mandya	Ramanagar	Tumkur	Total Area	Percentage
Very High	1295	0	1383	0	10274	12952	3.1
No. of MWS	2	0	2	0	10	14	
High	5110	4752	10779	39	95111	115791	28.0
No. of MWS	11	7	13	3	84	118	
Medium	81	47402	33281	33	201535	282332	68.1
No. of MWS	1	55	34	1	184	275	
Low	0	0	2068	0	1102	3170	0.8
No. of MWS	0	0	3	0	2	5	
Total	6486	52154	47511	72	308022	414245	100
No. of MWS	14	62	52	4	280		

(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	10548	2.5
Slight to Moderate erosion	132431	32.0
Moderate erosion	176558	42.6
Moderate to Severe erosion	49594	12.0
Severe erosion	17531	4.2
Misc	27583	6.7
Total	414245	100.0

16. Salient features

- Out of 351 micro-watersheds only 10 falls under very high priority category, 97 falls under high, 241 under medium and 3 under low priority category. There are no very low priority categories in this subcatchment.
- Areawise about 3.13 % has been categorized under very high priority category accounting 12952 ha, followed by 27.95% under high priority category accounting 115791 ha; 68.15% ha under medium category accounting 282332 ha and 0.8% under low category accounting 3170 ha.
- Moderate erosion hazards are present in 176558 ha (42.6%); moderate to severe erosion hazard are prevalent over an area of 49594 ha (12.0 %) and slight to moderate erosion in 132431 ha (32.0%).
- Out of the total surveyed area very gentle to gentle slope occupies majority of the area 282680 ha (68.2%) followed by gentle to moderate slope 86654 ha (21.0%)
- Upper pediplains occupy maximum area of 282680 ha (68.2%) followed by pediments 83929 ha (20.3%) in the surveyed area.
- Majority of the area 386662 ha (93.3%) is under Granitic landscape.
- Agriculture is the mainstay of the area representing 49.2% (203749 ha) share and orchards representing 37.7%. (156215 ha) with remaining area under forests, grasslands and open scrub.
- Deep to very deep soils occupy majority of the area with a spread of 327068 ha (79.0%) followed by shallow to moderately deep soils 59594 ha (14.4%).

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 4B3E1 to 4B3E5 watersheds of 4B3E subcatchment. The survey area covers an area of 414245 hectare comprising 351 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 4B3E 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 4B3E1a1, 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; ‘ E ‘ 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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