

**REPORT ON PRIORITIZATION OF MICROWATERSHEDS IN 5A2A1 TO 5A2A4
WATERSHEDS OF 5A2A SUBCATCHMENT (NON-RVP), DISTRICT
MALAPPURAM, PALAKKAD AND THRISSUR OF KERALA STATE.**

ABSTRACT

1. **Survey area** : 5A2A1 to 5A2A4 watersheds of 5A2A Subcatchment (Non RVP) in Malappuram, Palakkad and Thrissur districts of Kerala.
2. **Location** : 76° 23' to 77°35' E Longitude
9°14' to 9° 16' N Latitude
3. **Total area surveyed** : 211615 ha
4. **No. of microwatersheds** : 149
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** : 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 – 5
b) Basin – 5A
c) Catchment – 5A2
d) Subcatchment – 5A2A
e) Watersheds – 5A2A1 to 5A2A4
f) Sub watersheds - 5A2A1a, 5A2A1b
g) Micro-watersheds - 5A2A1a1, 5A2A1a2...

11. Extent of different Runoff Potential Mapping Unit

Sl.No.	RPMU	Runoff Potential Value	Area in ha	Area (%)
1	A01	64	20424	9.7%
2	CA01	52	30087	14.2%
3	CA02	55	4148	2.0%
4	G01	69	29671	14.0%
5	G02	65	4534	2.1%
6	G03	60	3984	1.9%
7	G04	59	4335	2.1%
8	G05	57	4386	2.0%
9	G06	58	9344	4.4%
10	G07	54	4371	2.0%
11	G08	55	3569	1.7%
12	G09	60	47407	22.4%
13	LT01	68	886	0.4%
14	LT02	62	4249	2.0%
15	LT03	55	3771	1.8%
16	LT04	55	16559	7.8%
17	LT05	53	5101	2.4%
18	LT06	57	1430	0.7%
19	HAB	0	6737	3.2%
20	ML	0	1696	0.8%
21	River	0	2247	1.1%
22	ROC	0	351	0.2%
23	Tank	0	2328	1.1%
		Total	211615	100.0

12. Priority Categorization:

S.No	Priority Category	No of Micro watersheds	Area in ha.	Area Percentage
1	Very High (above 65)	14	18484	8.73
2	High (61-65)	41	60273	28.48
3	Medium (56-60)	68	95926	45.34
4	Low (51-55)	26	36932	17.45
Total		149	211615	100.0

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

Priority/MWS	WATERSHED CODES				Total	Percentage
	5A2A1	5A2A2	5A2A3	5A2A4		
Very High	0	18484	0	0	18484	8.7
No. of MWS	0	14	0	0	14	
High	13086	27761	17710	1716	60273	28.5
No. of MWS	10	19	11	1	41	
Medium	25083	30738	17998	22107	95926	45.3
No. of MWS	19	23	12	14	68	
Low	5123	0	13856	17953	36932	17.5
No. of MWS	4	0	9	13	26	
TOTAL AREA	43292	76983	49564	41776	211615	100
Total No of MWS	33	56	32	28	149	149

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

State/Priority Category /No of MWS	Kerala			Total Area(ha)	Percentage
	Malappuram	Palakkad	Thrissur		
Very High	0	0	18484	18484	8.7
No of MWS	0	0	14	14	
High	384	1569	58320	60273	28.5
No of MWS	1	3	40	44	
Medium	8234	6005	81687	95926	45.3
No of MWS	9	6	63	78	
Low	8690	0	28242	36932	17.5
No of MWS	9	0	20	29	
Total	17308	7574	186733	211615	100.0
Total No of MWS	19	9	137	165	

15. Distribution of area under different erosion classes

Sl No.	Erosion	Area (ha)	Percentage
1	None to slight erosion	92544	43.7
2	Slight to Moderate erosion	48709	23.0
3	Moderate erosion	12853	6.1
4	Moderate to Severe erosion	44150	20.9
5	Misc	13359	6.3
	Total	211615	100.0

16. Salient features

- Out of 149 micro-watersheds only 14 falls under very high priority category, 41 falls under high, 68 medium and 26 under low priority category;
- Out of total surveyed area of 211615 ha, 18484 ha (8.7%) falls under very high priority category and 60273 ha (28.5%) falls under high priority category.
- Moderate erosion hazards are present in 12853 ha (6.1%) and moderate to severe erosion hazard are prevalent over an area of 44150 ha (20.9 %).
- Hillside slopes (10-50%) occupy maximum area of 52045 (24.6%) ha in the surveyed area.
- Out of four landscapes occurring in the area, granite landscape occupies on nearly 111601 ha (52.7 %) of the total area whereas Alluvial, Costal Alluvial and Laterite landscape occupy 20424 (9.7%), 34235(16.2%), 31996 (15.1%), ha respectively.
- Majority of the area are under multiple crops with an area of 73921ha(35%) and orchards having an area of 67756 ha (32%) area, whereas dense forest, estates and open scrub are 40065 ha(19%), 8603 ha(4%) and 7911 ha(4%) respectively.
- Very deep soils occupy majority of the area with a spread of 111436 ha (53%) and deep to very deep soils occupy an area of 86820 ha (41%) 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 5A2A1 to 5A2A4 watersheds of 5A2A subcatchment. The survey area covers an area of 211615 hectare comprising 161 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 5A2A 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 5A2A1a1, which is the representative abbreviated microwatershed code. In this code, first numeral ‘5’ indicates water resources region (flowing to Arabian sea); ‘A’ indicates basin (southern western ghats); ‘1’ denotes catchment; ‘ A ‘ for Subcatchment; ‘ 2’ 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 CA1, CA2, CA3 ...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 on page No. In Annexure III Distribution of Microwatersheds under different priority categories has been given in the descending order of priority. Annexure-II of the report furnishes information on Microwatershed wise distribution of Runoff Potential Mapping Units (RPMU) their runoff potential value, relative priority, priority grading in the descending order of runoff potential index, relative priority.

The very high and high priority micro-watersheds are shown in 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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