

REPORT ON PRIORITIZATION OF MICROWATERSHEDS IN 5A2D1 TO 5A2D5 WATERSHEDS OF 5A2D SUBCATCHMENT (NON RVP) IN KANNUR, KOZHIKODE, AND WAYANAD DISTRICTS OF KERALA STATE AND MAHE DISTRICT OF PONDICHERY STATE.

ABSTRACT

1. Survey area	:	5A2D1 to 5A2D5 watersheds of 5A2D Subcatchment (Non RVP) in Kannur, Kozhikode, and Wayanad Districts of Kerala State and Mahe district of Pondicherry state.
2. Location	:	75° 37' to 75° 59' E Longitude to 11° 09' to 11° 56' N Latitude
3. Total area surveyed	:	244042
4. No. of microwatersheds	:	188
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 2008 to December 2008
8. Base map	:	Survey of India topo sheets on 1:50,000 scale
9. Toposheet Nos	:	49M/05, 06,09,10,11,13,14,15 and 16
10. Hydrological divisions	:	a) Water Resource Region – 5 b) Basin – 5A c) Catchment – 5A2 d) Subcatchment – 5A2D e) Watersheds – 5A2D1 to 5A2D5 f) Sub watersheds - 5A1D1a, 5A1D1b g)Micro-watersheds – 5A2D1a1, 5A2D1a2,..

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11. Extent of different Runoff Potential Mapping Unit

Sl.No.	RPMU	Runoff Potential Value	Area in ha.	Percentage
1	CA01	56	449	0.18
2	CA02	53	41403	16.97
3	CA03	53	8347	3.42
4	G01	66	16156	6.62
5	G02	64	3402	1.39
6	G03	84	873	0.36
7	G04	63	7346	3.01
8	G05	74	18483	7.57
9	G06	60	3066	1.26
10	G07	56	749	0.31
11	G08	59	3856	1.58
12	G09	59	5304	2.17
13	G10	57	229	0.09
14	G11	57	804	0.33
15	G12	56	2463	1.01
16	G13	53	946	0.39
17	LT01	64	1856	0.76
18	LT02	63	7196	2.95
19	LT03	60	4551	1.86
20	LT04	65	27393	11.22
21	LT05	57	3369	1.38
22	LT06	57	16005	6.56
23	LT07	57	1195	0.49
24	LT08	56	50014	20.50
25	LT09	71	5157	2.12
26	Habitation	0	7705	3.16
27	River	0	3745	1.53
28	ROC	0	1596	0.65
29	Tank	0	384	0.16
		Total	244042	100.00

12. Priority Categorization:

Sl.No	Priority Category	No of Micro watersheds	Area in ha.	Percentage
1	Very High (above 65)	26	30420	12.47
2	High (61-65)	54	68397	28.03
3	Medium (55-60)	81	110517	45.29
4	Low (51-55)	27	34708	14.21
	Total	188	244042	100.00

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

WATERSHEDS	Priority and No.of MWS								Total
	Very High	No.of MWS	High	No.of MWS	Medium	No.of MWS	Low	No.of MWS	
5A2D1	1088	1	14343	11	21455	15	8068	6	44954
5A2D2	980	1	3700	4	14757	11	9116	8	28553
5A2D3	21341	18	22327	17	20665	16	1369	1	65702
5A2D4	7011	6	12668	9	18351	12	5845	4	43875
5A2D5	0	0	15359	13	35289	27	10310	8	60958
Total	30420	26	68397	54	110517	81	34708	27	244042
Percentage	12.47		28.03		45.29		14.22		100

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

Priority Category	Districts and No.of Microwatersheds										Percentage
	KANNUR	No.of MWS	KOZHIKODE	No.of MWS	MAHE	No.of MWS	WAYANAD	No.of MWS	TOTAL AREA	No.of MWS	
Very High	721	3	26760	26	0	0	2939	10	30420	39	12.46
High	18992	17	48472	43	0	0	933	3	68397	63	28.03
Medium	40787	32	68994	53	736	4	0	0	110517	89	45.29
Low	10339	10	24211	19	158	2	0	0	34708	31	14.22
Total	70839	62	168437	141	894	6	3872	13	244042	222	100.00
Percentage	29.03		69.02		0.37		1.59				

Note: (As Some of the microwatersheds falls in more than one districts the number of microwatersheds may vary in the above table)

15. Distribution of area under different erosion classes

Erosion	Area	Percentage
None to slight erosion	11237	4.61
Moderate erosion	185952	76.20
Moderate to Severe erosion	6030	2.47
Severe erosion	27393	11.22
Misc	13430	5.50
Total	244042	100.00

16. Salient features

- Out of 188 micro-watersheds only 26 falls under very high priority category, 54 falls under high, 81 medium and 27 under low priority category;
- Out of total surveyed area of 2,44,042 ha, 30,420ha (12.47%) falls under very high priority category and 68,397(28.03%) falls under high priority category.
- Majority of the surveyed area, i.e., 185952ha (76.2%) suffers from Moderate erosion while moderate to severe erosion hazard are prevalent over an area of 6030 ha (2.47%), and Severe Erosion hazard has an area of 27393ha(11.22%).
- Hillside slopes (10-50%) occupy maximum area of 100231ha(41.07%) and Very gentle to Gentle slope (1-5%) covers 97520ha (39.96%) in the surveyed area
- Out of three landscapes occurring in the area, Laterite geology have an area of 116736ha (47.83%) followed by granite geology with an area of 63677ha (26.10%). And Coastal alluvial geology with 50199 ha (20.57 %) respectively.
- Orchards occupy 168261ha (69%) of the surveyed area whereas forest area covers 23602ha (9.6%), Cultivated lands occupies 10488ha and Open scrub lands 6479ha respectively.
- Moderately Deep to deep soils spread over 173115 ha area (71%), whereas the area under very deep soils are 52340 ha (11.2%) 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 5A2D1 to 5A2D5 watersheds of 5A2D subcatchment. The survey area covers an area of 244042 hectare comprising 188 microwatersheds. The priorities are fixed based on “Runoff Potential Index “Higher value of RPI suggests high priority and vice versa. Demarcated microwatersheds map sheets pertaining to 5A2D 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 5A2D1a1, 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); ‘2’ denotes catchment; ‘D’ 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 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

The Chief soil Survey Officer,
Soil and Land Use Survey of India
IARI Buildings, New Delhi 110 012
Phone: 091-11-25841263 Fax 091-11-25843811
Email: csso-slusi@nic.in

Visit us at: <http://slusi.dacnet.nic.in>

or

The Soil Survey Officer
Soil and Land Use Survey of India
Survey No.207, Kodigehalli,
VidyaranyaPura.P.O post, Bangalore 560 097
09180-23640761, 091-80-23641119, fax 091-80-23640751
Email: soilkar@nic.in Web site: <http://slusi.dacnet.nic.in>