

REPORT ON PRIORITIZATION OF MICROWATERSHEDS IN 5A3A1-A8 WATERSHEDS (EXCEPT 5A3A5 & 5A3A8 PART) OF 5A3A SUBCATCHMENT (NON RVP) OF DAKSHINA KANNADA AND COORG DISTRICTS, KARNATAKA AND KANNUR, KASARAGOD AND WAYANAD DISTRICTS, KERALA

ABSTRACT

1. **Survey area** : 5A3A1 to 5A3A8 watersheds of 5A3A Subcatchment (Non RVP) in Dakshina Kannada and Kodagu districts of Karnataka, Kannur, Kasaragod and Wayanad districts of Kerala.
2. **Location** : 74° 30' to 76°00' E Longitude
11° 49' to 12° 38' N Latitude
3. **Total area surveyed** : 4, 45,999 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 Microwatershed
7. **Period of survey** : February 2008 to March 2009
8. **Base map** : Survey of India toposheets on 1:50,000 scale
9. **Toposheets** : 48L/14&15, 48P/ 02, 03, 04, 06, 07,08,10,11, 12 & 16, 49M/05, 09 & 13
10. **Hydrological divisions** : a) Region – 5
b) Basin – 5A
c) Catchment – 5A3
d) Subcatchment – 5A3A
e) Watersheds – 5A3A 1 to 5A3A 8
f) Sub watersheds - 5B1A1a, 5B1A1b
g) Micro-watersheds – 5A3A a1, 5A3A a2.... etc.

11. Area extent of different runoff potential mapping units

Sl.No.	RPMU	Runoff Potential Value	Area (ha)	Percentage
1	CA01	56	235	0.1
2	CA02	53	31073	7.0
3	CA03	53	4340	1.0
4	G01	70	91669	20.3
5	G02	64	10471	2.3
6	G03	85	6706	1.5
7	G04	63	41289	9.3
8	G05	79	11483	2.6
9	G06	60	7870	1.8
10	G07	57	3375	0.8
11	G08	59	20166	4.5
12	G09	59	8359	1.9
13	G10	57	3287	0.7
14	G11	57	15479	3.5
15	G12	56	15214	3.4
16	G13	53	10276	2.3
17	LT01	64	443	0.1
18	LT02	64	30582	6.9
19	LT03	63	6949	1.6
20	LT04	60	18915	4.2
21	LT05	62	17731	4.0
22	LT06	57	9651	2.2
23	LT07	56	7495	1.7
24	LT08	61	15064	3.4
25	LT09	72	6226	1.4
26	LT10	61	32266	7.2
27	LT11	57	1934	0.4
28	H	0	2886	0.6
29	RIVER	0	10689	2.4
30	ROC	0	3876	0.9
Total			445999	100.0

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

Priority Category/No of MWS	Karnataka State		Kerala State			Total No. of MWS	Total Area	Percentage
	Dakshina Kannada	Kodagu/Coorg	Kannur	Kasaragod	Wayanad			
Very High	1545	14120	11565	246	12	-	27488	6.2
No. MWS	1	13	11	1	1	27	-	-
High	10783	49570	36098	5275	1671	-	103397	23.2
No. MWS	16	53	42	9	3	123	-	-
Medium	21524	13107	73088	50851	0	-	158570	35.5
No. MWS	24	22	64	50	0	160	-	-
Low	12370	22328	71018	19551	0	-	125267	28.1
No. MWS	12	20	60	20	0	112	-	-
Very Low	0	0	23890	7387	0	-	31277	7.0
No. MWS	0	0	21	8	0	29	-	-
Total Area	46222	99125	215659	83310	1683	-	445999	100
Total No. MWS	53	108	198	88	4	451	-	-

Note: Total number of micro watersheds may vary due to few of the micro watersheds falling in two districts and states.

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

Priority Category	WATERSHED CODES								Total
	5A3A1	5A3A2	5A3A3	5A3A4	5A3A5	5A3A6	5A3A7	5A3A8	
Very High	0	9000	7555	0	0	4342	6591	0	27488
No. of MWS	0	8	7	0	0	3	6	0	24
High	19345	30020	19012	0	0	5674	29346	0	103397
No. MWS	17	24	19	0	0	4	24	0	88
Medium	29347	22312	13024	19103	1281	25678	42462	5363	158570
No. of MWS	25	21	11	15	1	23	36	5	137
Low	33162	36908	8815	17480	2342	3184	16705	6671	125267
No. MWS	28	32	6	15	2	3	13	5	104
Very Low	11116	0	3760	15122	1279	0	0	0	31277
No. MWS	8	0	3	12	1	0	0	0	24
Total Area	92970	98240	52166	51705	4902	38878	95104	12034	445999
Total MWS	78	85	46	42	4	33	79	10	377

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

Sl.No.	Priority Category	No. of MWS	Area in ha.	Percentage
1	Very High (above 70)	24	27488	6.2
2	High (66-70)	88	103397	23.2
3	Medium (61-65)	137	158570	35.5
4	Low (56-60)	104	125267	28.1
5	Very Low (55 & below)	24	31277	7.0
Total		377	445999	100.0

15. Distribution of area under different erosion classes

Sl No.	Erosion	Area (ha)	Percentage
1	None to slight erosion	16550	3.7
2	Moderate erosion	230853	51.8
3	Moderate to Severe erosion	148879	33.4
4	Severe erosion	32266	7.2
5	MISC	17451	3.9
	Total	445999	100

Salient features

- Out of 377 micro-watersheds only 24 MWS have been identified under very high and 88 MWS under high priority categories that need immediate attention for suitable run off control measures. 137 MWS under medium and 104 MWS under low priority categories.
- Area wise 6% has been categorized under very high priority category accounting 27488 ha, followed by 23 % under high priority category accounting 103396 ha, 35.5 % under medium and 28% under low priority accounting 158570 ha and 125267 ha respectively. Among the districts, Coorg / Kodagu has the highest spatial extent of very high and high priority categories covering to 14120ha and 49570ha respectively followed by Kannur district spreading over to 11565ha and 36098ha respectively.
- Area surveyed represents only 7.2% of the area under severe erosion hazards followed by 33% under moderate to severe erosion hazard with remaining 55% under none to slight to moderate erosion hazards.
- Nearly 50% of the area is under steep to very steep slope and rest of the area are distributed under other slope categories with an average of 15 to 17 percent coverage excepting level to very gentle slope with 1-5 per cent area.
- Agriculture is the mainstay of the area representing 30% under orchards, Estates and Forest respectively, while about 4 per cent area covered under low lying cultivable land.
- Major portion of the surveyed area (95 %) has very deep soils with only 5 % area under shallow to moderately deep soils.
- Majority of the area is under Granite landscape (55%) followed by Laterite (33%) and Coastal alluvium (8%).

HOW TO USE SOIL SURVEY REPORT

The report infers 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 the study area was generated through field traverse during the rapid reconnaissance survey carried out in 5A3A1 to 5A3A8 watersheds of 5A3A subcatchment. The survey area covers an area of 4, 45, 999 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 5A3A sub catchment on 1:50000 scale are appended with this report.

Micro watershed has been codified with a code like 5A3A1a1, 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); ‘3’ 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, LT02, G05...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.

The details of legend description and Differentiating Characteristics of Run off Potential Mapping Units have been depicted in Annexure I and Table No. 6 respectively. Whereas Annexure-II of the report furnishes information on Microwatershed and District wise distribution of Runoff Potential Mapping Units (RPMU), their runoff potential value, relative RPI and Runoff Potential Index and grading of microwatersheds with priority category. Annexure-III furnishes information on micro watersheds in the descending order of their priority.

The themes on slope, land use, depth, management and erosion are appended with the report which provides simple and added information on the database. 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 further clarification, information and comments/suggestions may contact to:

The Chief soil Survey Officer, Soil and Land Use Survey of India IARI Buildings, New Delhi 110 012 Phone: +91-11-25841263 / 25849486 Fax : +91-11-25843811 Email: cso-slusi@nic.in	The Soil Survey Officer Soil and Land Use Survey of India Survey No.207, Kodigehalli, Vidyaranya pura (P), Bangalore - 560 097. Phone : 080-23640761,080-23641119. Fax : 080-23640751,Email: soilkar@nic.in
Log on to: http://slusi.dacnet.nic.in	