

Prioritization of Micro-watersheds of 4C3I1 to 4C3I8 Watersheds of 4C3I Subcatchment (Non RVP) of 4C3, Pennar Catchment, Anantapur district of Andhra Pradesh and Chitradurg, Kolar & Tumkur district of Karnataka state

ABSTRACT

01.	Surveyed Area :	4C3I1 to 4C3I8 Watersheds of 4C3I Subcatchment (Non RVP) of 4C3, Pennar Catchment, Anantapur district of Andhra Pradesh and Chitradurg, Kolar & Tumkur district of Karnataka state
02.	Location :	13 ⁰ 21' to 14 ⁰ 34' North Latitude 77 ⁰ 9' to 79 ⁰ 36' East Longitude
03.	Total Area :	5,69,752 ha.
04.	Nos. of Microwatersheds :	690 Nos.
05.	Agro climatic zone:	Southern Plateau and Hill region (zone-X)
06.	Kind of Survey :	Rapid Reconnaissance Survey
07.	Period of Survey :	December 2006 to March 2007
08.	Base Map :	Survey of India, Topographical Maps on 1:50000 scale
09.	Hydrological division :	a. Region 4 - (Drainage flowing in to Bay of Bengal)
		b. Basin 4C - (Cauvery and Krishna)
		c. Catchment 4C3 - (Pennar)
		d. Sub-catchment 4C3I
		e. Watershed 4C3I1 to 4C3I8
		f. Sub-watershed 4C3I1a to 4C3I1b etc.
		g. Micro-watershed 4C3I1a1, 4C3I1a2 etc.

10. Aerial Extent of different Run-off Potential Mapping Units

S. No	Runoff Potential Mapping Unit (RPMU)	Total Area (Ha.)	Area (%)
1	AL01	10188	1.79
2	AL02	629	0.11
3	AL03	3203	0.56
4	DL01	1117	0.2
5	GR01	3903	0.69
6	GR02	2600	0.46
7	GR03	2782	0.49
8	GR04	1930	0.34
9	GR05	10458	1.84
10	GR06	7747	1.36
11	GR07	66868	11.74
12	GR08	58174	10.21
13	GR09	16677	2.93
14	GR10	4213	0.74
15	GR11	1293	0.23
16	GR12	207073	36.34
17	GR13	20466	3.59
18	GR14	647	0.11
19	GR15	4525	0.79
20	GR16	32794	5.76
21	GR17	7110	1.25
22	GR18	4100	0.72
23	GR19	15260	2.68
24	GR20	29841	5.24
25	GR21	23293	4.09
26	GR22	886	0.16
27	SS01	27	0
28	SS02	548	0.1
29	Hab.	2010	0.35
30	RESERVOIR	618	0.11
31	RIVER	5349	0.94
32	ROC	272	0.05
33	Tank	23151	4.06
	Total	569752	100

11. Districtwise distribution of Runoff Potential Mapping Unit area(Ha.)

SI No	RPMU	A.P.	Karnataka				Total Area (Ha.)	Area (%)
		Anantapur	Bangalore Rural	Chitradurga	Kolar	Tumkur		
1	AL01	4627	0	489	1797	3275	10188	1.79
2	AL02	629	0	0	0	0	629	0.11
3	AL03	2187	0	157	6	853	3203	0.56
4	DL01	710	57	289	61	0	1117	0.2
5	GR01	1102	434	956	1321	90	3903	0.69
6	GR02	715	0	331	1524	30	2600	0.46
7	GR03	205	1500	177	0	900	2782	0.49
8	GR04	1014	0	916	0	0	1930	0.34
9	GR05	3296	235	1871	3525	1531	10458	1.84
10	GR06	4084	70	573	2346	674	7747	1.36
11	GR07	31352	2773	5152	17007	10584	66868	11.74
12	GR08	24301	847	9282	11675	12069	58174	10.21
13	GR09	3449	423	853	11217	735	16677	2.93
14	GR10	2303	0	1831	0	79	4213	0.74
15	GR11	440	87	0	401	365	1293	0.23
16	GR12	95162	4327	56619	12493	38472	207073	36.34
17	GR13	16654	0	3678	102	32	20466	3.59
18	GR14	283	0	50	0	314	647	0.11
19	GR15	2933	0	0	1168	424	4525	0.79
20	GR16	17422	2327	3502	6527	3016	32794	5.76
21	GR17	994	5080	239	797	0	7110	1.25
22	GR18	76	619	0	3405	0	4100	0.72
23	GR19	5158	369	1082	4966	3685	15260	2.68
24	GR20	4859	981	8541	11590	3870	29841	5.24
25	GR21	9600	1427	1752	9306	1208	23293	4.09
26	GR22	134	0	517	235	0	886	0.16
27	SS01	27	0	0	0	0	27	0
28	SS02	383	14	0	151		548	0.1
29	Hab.	1171		378	208	253	2010	0.35
30	RESERV OIR	618	0	0	0	0	618	0.11
31	RIVER	2846	34	556	1134	779	5349	0.94
32	ROC	172	0	100	0	0	272	0.05
33	Tank	12953	238	2625	3787	3548	23151	4.06
		251859	21842	102516	106749	86786	569752	100

12. Priority Category wise area (Ha.) with number of micro-watersheds.

Sl No	Priority Category	No. of Micro-watersheds	Total Area (Ha.)	Area (%)
1	Very High (above 70)	24	21744	3.82
2	High (66-70)	97	81948	14.38
3	Medium (61-65)	444	361871	63.51
4	Low (56-60)	125	104189	18.29
	G. Total	690	569752	100

13. Watershedwise distribution of area under different priority category area(Ha.)

S No.	Sub-watersheds	Very High	High	Medium	Low	Total Area
1	4C3I1	0	2313	51456	2392	56161
2	4C3I2	1960	15088	50659	564	68271
3	4C3I3	1881	10271	34155	864	47171
4	4C3I4	2351	16124	70458	0	88933
5	4C3I5	734	7649	59485	25849	93717
6	4C3I6	4227	7165	18091	23127	52610
7	4C3I7	9580	13298	52864	42130	117872
8	4C3I8	1011	10040	24703	9263	45017
	G Total	21744	81948	361871	104189	569752

14. District wise priority category area (Ha.) of the subcatchment.

Priority Category	No .of Micro-watersheds	Anantapur	Bangalore Rural	Chitradurga	Kolar	Tumkur	Total Area (Ha.)	Area (%)
Very High (above 70)	24	2834	146	4002	13661	1101	21744	3.82
High (66-70)	97	22606	4993	25923	13721	14705	81948	14.38
Medium (61-65)	444	180155	15679	69757	39388	56892	361871	63.51
Low (56-60)	125	46264	1024	2834	39979	14088	104189	18.29
G Total	690	251859	21842	102516	106749	86786	569752	100

15. Salient Features

- Out of the total area of 5,69,752 ha 2,51,859 ha (44.20%) fall in the districts Anantapur (A.P.) followed by 106749 ha (18.7%) in Kolar, 102516 ha (18%) under Chitradurga, 86,786 ha under Tumkur and 21,842 ha under Bangalore rural districts of Karnataka state.
- Very high and high category of priority micro-watershed cover 103692 ha (18.20%) of the total Surveyed area and need immediate treatment measures.
- Moderate, moderate to severe and severe to very severe erosion hazards are prevalent over an area of 3,05,8574 ha (53.7%), 41, 952 ha (7.4%) and 6401 ha (1.2%) respectively.
- An area of 22,240 ha (3.91%) covered under forest, pasture and grassland occupy 74, 964 ha accounting for (13.16%) of the total area unculturable waste lands occupy an area of 20466 ha which is 3.59% of the total area.
- Very shallow to shallow soils cover an area of 69086 ha (12.1%) while shallow to moderately deep soil cover an area of 2,59,276 ha (45.5%) and moderately deep to deep occupy 134648 ha (23.6 %) of the total area.
- Out of total cultivated area of 5,69,7523 ha, 3,06,735 ha (53.84%), is under rainfed and 1,13,061 (19.85%) is under irrigation/multiple crop cultivation.

How to use Soil Survey Report

The report embodies the results of the rapid reconnaissance survey conducted in Microwatersheds of 4C3I1 to 4C3I8 watersheds of 4C3I Subcatchment of 4C3, Pennar, Non RVP Catchment for planning soil and water conservation measures and treatment plan for effective soil conservation practices.

The priority categories have been fixed on the basis of runoff potential index (RPI) values derived on computation by formula described in the chapter 3 of the report. Higher values of the RPI suggest higher priority and vice-versa.

The microwatersheds of 4C3I Subcatchment have been categories into five categories of priority termed as very high, high, medium, low and very low.

All the microwatersheds of the reported area are listed in Appendix I, showing Runoff Potential Mapping Unit (RPMU), their area, runoff potential value, Index and Priority grading. This annexure is very useful to know any information at microwatershed level. All the microwatersheds have been listed in descending order of their sediment yield index in Annexure II and graded in different priority categories.

The codification and delineation in National Watershed Atlas is demarcated upto watershed level e.g. 4C3I1 which connotes:

- 4 : for water resource region
- C : for basin
- 3 : for catchment
- I : for subcatchment
- 1 : for watershed

This delineation and codification is transferred on a priority demarcation map where two more delineations are made and an English alphabet followed by an Arabic number is suffixed to the watershed symbol to connote subwatershed and microwatershed respectively. Thus the 7 digit symbol e.g. 4C3I1a1 represents a microwatershed code on a priority delineation map. Different runoff potential mapping units are marked with capital English alphabet followed by Roman numbers if needed like AL01, AL02, AL03, GR01, etc. Each soil mapping unit denotes a set of soil and land attributes such as physiography, slope, depth, soil texture, land use, land cover, management practices, category of erosion, etc. Detailed description of soil mapping units has been given in chapter 4.

The user on the basis of the maps appended with the report needs to identify the location of the area of interest. On the map 7 digit code e.g. 4C3I1a1 is to be

noted along with the symbols of RPMU. To know the priority category **Annexure I** and **II** is to be referred. To get the area of different RPMUs mapped with in the microwatershed of interest Annexure I is to be consulted. The description of each RPMU is given in **Table 7** and RPMU differentiating characteristics in **Table 8**. The distribution of area under different priority

categories with reference to district wise area, slope, soil depth, management class and erosion hazards are given in **Table 10 to 14**. Priority categorization with reference to district wise area is depicted in **Table 18**.

Request for detailed soil survey for preparation of micro watersheds development plan or for the area of interest can be sent to the Chief Soil Survey Officer by giving the codes of Microwatersheds, at the address given below.

The findings of the rapid reconnaissance survey have been summarized in Chapter 5. The very high priority Microwatersheds are shown in the appended by vertical hachuring where as Microwatersheds of high priority by horizontal hachuring. These priorities are relative severity of the problems in the microwatershed against the urgency of the treatment.

In case any additional information or explanation is required, the reference may be made to.

<p>The Chief Soil Survey Officer Soil and Land Use Survey of India (Department of Agri. & Co-operation) Government of India I.A.R.I. Buildings, New Delhi- 110012 Ph.011-25841263, 25849686 Fax-011-25843811 E-mail-csso-slusi@nic.in</p>	<p>The Soil Survey Officer Soil and Land Use Survey of India Mrida Sarvekshan Bhavan, Rajendra Nagar Hyderabad- 500030 (Telangana State) Ph. & Fax-040-24010051 040-24010042 Email- ssohyderabad-slusi@nic.in soilap@nic.in Log on to – http://slusi.dacnet.nic.in</p>
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