

Inventory of Rapid Reconnaissance Survey Prioritization of Micro-watersheds of 4C3E1 to 4C3E9 Watersheds in 4C3E Subcatchment, 4C3(Pennar) Non RVP Catchment, Districts Anantapur, Cuddapah, Kurnool & Prakasam of Andhra Pradesh State

ABSTRACT

01.	Surveyed Area	4C3E1 to 4C3E9 Watersheds of 4C3E Subcatchment, 4C3(Pennar) Non RVP Catchment, Districts Anantapur, Cuddapah, Kurnool & Prakasam of Andhra Pradesh State
02.	Location	14 ⁰ 60' to 15 ⁰ 79' North Latitude 77 ⁰ 85' to 78 ⁰ 81' East Longitude
03.	Total Area	873176 Ha.
04.	Nos. of Microwatersheds	1004 microwatersheds.
05.	Agro climatic zone	Southern Zone (Zone-III)
06.	Kind of Survey	Rapid Reconnaissance Survey for priority categorisation of microwatersheds
07.	Period of Survey	2006-2007
08.	Base Map	Survey of India, Topographical Maps on 1:50000 scale
09.	Toposheets	57E15,16, I01,02,03,04,05,06,07,08,09,10,11,12, 13,14, 15,16, 57J01, 05,09,10 & 13.
10.	Hydrological division	a. Region 4 - (Drainage flowing in to Bay of Bengal)
		b. Basin 4C - (Pennar)
		c. Catchment 4C3 - (Pennar)
		d. Sub-catchment 4C3E
		e. Watershed 4C3E1 to 4C3E9
		f. Sub-watershed 4C3E1a to 4C3E2a etc.
		g. Micro-watershed 4C3E1a1, 4C3E2a1 etc.

11. Distribution of area (ha) under different watersheds

S.No.	Watersheds	Total Area (ha)	Area (%)	S No.	Watersheds	Total Area (ha)	Area (%)
1	4C3E1	94596	10.8	6	4C3E6	61753	7.1
2	4C3E2	147952	16.9	7	4C3E7	63430	7.3
3	4C3E3	111901	12.8	8	4C3E8	81939	9.4
4	4C3E4	99523	11.4	9	4C3E9	77183	8.8
5	4C3E5	134899	15.4	Grand Total		873176	100.0

12. Priority categorization

Sl.No.	Priority Category	No. of Microwatersheds	Area in ha.	Area (%)
1	Very High (above 70)	429	365148	41.8
2	High (66-70)	211	183503	21.0
3	Medium (61-65)	201	166732	19.1
4	Low (56-60)	163	157793	18.1
	Grand Total	1004	873176	100.0

13. Watershed wise Area (ha.) and number of micro watersheds under different priority categories

Watersheds	Very High	High	Medium	Low	Total Area (ha)	Area (%)
4C3E1	11770	23108	8388	51330	94596	10.8
4C3E2	54273	32883	31079	29717	147952	16.9
4C3E3	45267	28385	11956	26293	111901	12.8
4C3E4	65100	21745	12027	651	99523	11.4
4C3E5	79943	24336	26656	3964	134899	15.4
4C3E6	48601	7992	4353	807	61753	7.1
4C3E7	14994	22876	17583	7977	63430	7.3
4C3E8	35576	15954	18456	11953	81939	9.4
4C3E9	9624	6224	36234	25101	77183	8.8
Grand Total	365148	183503	166732	157793	873176	100.0

14. State & District wise distribution of area (ha) under different watersheds

S No.	Watersheds	ANDHRA PRADESH				Total Area (Ha.)	Area (%)
		ANANTAPUR	CUDDAPAH	KURNOOL	PRAKASAM		
1	4C3E1	0	91848	2748	0	94596	10.8
2	4C3E2	0	4022	143930	0	147952	16.9
3	4C3E3	2793	57696	51412	0	111901	12.8
4	4C3E4	1515	0	98008	0	99523	11.4
5	4C3E5	0	0	134899	0	134899	15.4
6	4C3E6	0	0	61753	0	61753	7.1
7	4C3E7	0	0	62224	1206	63430	7.3
8	4C3E8	0	0	81939	0	81939	9.4
9	4C3E9	0	0	77027	156	77183	8.8
	Grand Total	4308	153566	713940	1362	873176	100.0

15. Districtwise distribution of microwatersheds under different priority categories

Priority Category	No of mws	Anantapur	Cuddapah	Kurnool	Prakasam	Total Area (ha)	Area (%)
Very High (above 70)	456	959	22536	341497	156	365148	41.8
High (66-70)	233	3349	38235	141263	656	183503	21.0
Medium (61-65)	206	0	17817	148365	550	166732	19.1
Low (56-60)	177	0	74978	82815	0	157793	18.1
Total	1072	4308	153566	713940	1362	873176	100.0

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

Sl. No.	RPMU	Runoff Potential Value	Area in ha.	Area (%)
1	AL01	58	65748	7.53
2	AL02	56	6288	0.72
3	AL03	68	2860	0.33
4	LS01	60	1352	0.15
5	SS01	64	36212	4.15
6	SS02	86	257238	29.46
7	SS03	74	47734	5.47
8	SS04	68	19713	2.26
9	SS06	65	51299	5.87
10	SS07	69	62811	7.19
11	SS08	61	687	0.08
12	SS09	57	57428	6.58
13	SS10	62	55947	6.41
14	SS11	66	755	0.09
15	SS12	69	3278	0.38
16	SS13	61	1064	0.12
17	SS14	64	71703	8.21
18	SS15	56	37318	4.27
19	SS16	56	16836	1.93
20	SS17	60	676	0.08
21	SS18	66	1873	0.21
22	SS19	60	7013	0.8
23	SS20	70	8869	1.02
24	SS21	60	6408	0.73
25	SH02	59	249	0.03

Sl. No.	RPMU	Runoff Potential Value	Area in ha.	Area (%)
26	SH03	75	264	0.03
27	Habitation		1878	0.22
28	River		7421	0.85
29	ROC		25647	2.94
30	Tank		12123	1.39
31	Reservoir		3378	0.39
32	Quarry		1106	0.13
	Total		873176	100.00

16. Salient Features

- Out of the total area of 873176 ha., 4308 area falls under Anantapur, 153566 ha, under Cuddapah, 713940 ha under Kurnool and 1362 ha under Prakasam district of Andhra Pradesh.
- Very High category of priority micro-watersheds cover 365148 ha (41.8%), High covers 183503 ha (21.0%), Medium covers 166732ha (19.1%) and Low covers 157793ha (18.1%) of the total surveyed area.
- 30.3 percent of the surveyed area is under severe erosion, 14.3 percent under moderate to severe erosion hazard, 26.6 percent under moderate erosion, 2.9 percent under slight to moderate erosion and 20.1 percent under none to slight erosion hazard.
- An area of 271706 ha (31.1%) is under agriculture, 105532 ha (12.1%) under forest, 52363 (6.0%) under mixture of open scrub and agriculture and 392022 ha (44.9%) under open scrub.

How to Use Soil Survey Report

The report embodies the results of the rapid reconnaissance survey conducted in Microwatersheds of 4C3E1 to 4C3E9 watersheds of 4C3E 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 4C3E Subcatchment have been categorized 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. 4C3E1 which connotes:

- 4 : for water resource region
- C : for basin
- 3 : for catchment
- E : 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. 4C3E1a1 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, SS01, 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. 4C3E1a1 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 6 and RPMU differentiating characteristics in table 7. The distribution of area under different priority categories with reference to district wise area, soil depth, management class and erosion hazards are given in Table 8 to 13. Priority categorization with reference to district wise area is depicted in Table 15.

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>and/or</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</p>
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