

Inventory of Rapid Reconnaissance Soil Survey for Prioritization of Watersheds in 4C3F1 and 4C3F2, 4C3F Subcatchment (Non RVP) of 4C3 Pennar Catchment, District Cuddapah, Andhra Pradesh State

ABSTRACT

01. **Surveyed Area** : 4C3F1 to F2 Watersheds of 4C3F Sub-catchment (Non-RVP) in Cuddapah district of Andhra Pradesh
02. **Location** : 14^o 36' to 14^o 52' North Latitude
78^o 11' to 78^o 41' East Longitude
03. **Total Area** : 1, 29,468 ha.
04. **Nos. of Microwatersheds** : 107 microwatersheds.
05. **Agro climatic zone:** Southern Zone (Zone-III)
06. **Kind of Survey** : Rapid Reconnaissance Survey
07. **Period of Survey** : January, 2006 to March 2006
08. **Base Map** : Survey of India, Topographical Maps on 1:50000 scale
09. **Toposheet Used** : 57J01,02,05,06,07,09,10, & 57J11
10. **Hydrological division** : a. Region 4 - (Drainage flowing in to Bay of Bengal)
b. Basin 4C - (Pennar)
c. Catchment 4C3 - (Pennar)
d. Sub-catchment 4C3F
e. Watershed 4C3F1 and F2
f. Sub-watershed 4C3F1a to 4C3F2a etc.
g. Micro-watershed 4C3F1a1, 4C3F2a2 etc.

11. Priority categorization

Sl. No	Priority Category	No. of Micro-watersheds	Total Area (ha)	Area (%)
1	Very High (above 70)	31	35670	27.55
2	High (66-70)	18	23651	18.27
3	Medium (61-65)	27	31914	24.65
4	Low (56-60)	31	38233	29.53
	Total	107	129468	100

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

S. No.	Watersheds	Very High	High	Medium	Low	Total Area(ha)	Area (%)
1	4C3F1	6102	4972	20009	19408	50491	39
2	4C3F2	29568	18679	11905	18825	78977	61
	Total	35670	23651	31914	38233	129468	100

13. District wise distribution of area (ha) under different watersheds

S.No.	Watersheds	Cuddapah (AP)	Total Area (ha)	Area (%)
1	4C3F1	50491	50491	39
2	4C3F2	78977	78977	61
		Total	129468	100

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

Sl. No	RPMU	RP value	Total Area (ha)	Area (%)
1	AL01	59	12265	9.47
2	AL02	57	1788	1.38
3	AL03	68	2300	1.78
4	DR01	78	123	0.10
5	LS01	60	16112	12.44
6	SS01	68	61	0.05
7	SS02	88	9479	7.32
8	SS03	75	864	0.67
9	SS04	58	58	0.04
10	SS05	71	11030	8.52
11	SS06	71	19492	15.06
12	SS07	61	11386	8.79
13	SS08	57	6188	4.78
14	SS09	67	37	0.03
15	SS10	69	2294	1.77
16	SS11	66	3591	2.77
17	SS12	59	8138	6.29
18	SS13	60	1180	0.91
19	SS14	80	4466	3.45
20	SH01	60	909	0.70
21	SH02	59	7646	5.91
22	RIVER	0	5916	4.57
23	TANK	0	1095	0.85
24	HABITATION	0	2010	1.55

25	SAND	0	694	0.54
26	QUERY	0	114	0.09
27	STREAM	0	232	0.08
	Total		129468	100.00

15. Salient Features

- Very High category of priority micro-watershed cover 35670 ha (27.55%) and medium category cover 31914 ha (24.65%) of the total Surveyed area.
- 60 percent of the total survey area is under slight to moderate erosion hazard with mere 40 percent under moderate to severe erosion hazard.
- An area of 69203 ha (53.46%) is under agriculture, mixed agriculture and mere 58 ha. under plantation, 925 ha (0.71%) covered under forest and 49221 ha accounting 38.02 percent under open scrub of the total surveyed area.
- Nearly 50 percent of the survey area is under deep to very deep soils with 50 percent under shallow to moderately deep soils.
- Nearly 42 percent of the area is under nearly level to very gently sloping lands 43.86 per cent under deep to very deep soils and 35.78 per cent under moderately to well managed soils.

How to use Soil Survey Report

The report embodies the results of the rapid reconnaissance survey conducted in Microwatersheds of 4C3F1 and 4C3F2 watersheds of 4C3F 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 4C3F 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. 4C3F1 which connotes:

- 4 : for water resource region
- C : for basin
- 3 : for catchment
- F : 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. 4C3F1a1 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, DR01, 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. 4C3F1a1 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, land use, slope, soil depth, textural class, erosion class and management hazards are given in table 9 to 14. Priority categorization with area is depicted in Table 17.

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.

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