REPORT ON DEMARCATION OF PRIORITY MICRO WATERSHEDS IN 4C1B (LOWER PONNAIYAR UPTO SATHANUR DAM) AND 4C1C (UPPER PONNAIYAR BEYOND SATHANUR DAM) SUBCATCHMENTS (RVP), CHITTOR DISTRICT ANDHRA PRADESH, BANGALORE (RURAL & URBAN) AND KOLAR DISTRICTS, KARNATAKA, CUDDALORE, DHARAMPURI, SALEM, THIRUVANNAMALAI, VELLORE AND VILLUPURAM DISTRICTS TAMILNADU AND PONDICHERRY

ABSTRACT

1. Survey area		:Report On Demarcation Of Priority Micro Watersheds In 4C1B (Lower Ponnaiyar Upto Sathanur Dam) And 4C1C (Upper Ponnaiyar Beyond Sathnur Dam) Subcatchments (RVP), Chittor District Andhra Pradesh, Bangalore (Rural & Urban) And Kolar Districts, Karnataka, Cuddalore, Dharmapuri, Salem, Thiruvannamalai, Vellore, and Villupuram Districts Tamilnadu, and Pondicherry.
2. Location	:	11° 37'50" to 13° 30'45" N Latitude and 77° 32'10" to 79° 49'5" Longitude
3. Total area surveyed	:	15, 17,508 hectares
4. Agro climatic region	:	10 (semiarid subtropical with excessive evapo-transpiration)
5. Type of survey	:	RR survey for priority delineation
6. Period of survey	:	1993-1998
7. Base maps	:	1:50,000 scale survey of India topographic maps
8. Topo-sheet nos.	:	58 I / 1, 5, 9, 13 58M/ 1, 2, 5, 6, 9, 10, 13, 14 57 H/9, 10, 13, 14 57L/ 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, 14, 15, 16 57/P 3, 4, 8, 57 G/10, 11, 12, 14, 15, 16, 57K/ 4
9. Hydrological divisions		
a) Region		- 4
b) Basin		- 4C
c) Catchment		- 4C1
d) Sub catchments		- 4C1B & 4C1C
e) Watersheds		- 4C1B1 to 4C1B5, and 4C1C1 to 4C1C9
f) Subwatersheds		- 230
g) Microwatersheds		- 1585

10. SUB WATERSHEDS AND MICROWATERSHEDS

Sl.No.	Water-sheds	Number of Sub watersheds	No of micro water-sheds	Area in Hectare	Sl. No	Water-sheds	Number of Sub watersheds	No of micro watersheds	Area in Hectare
1	4C1B1	21	146	138642	6	4C1C1	18	122	100408
2	4C1B2	10	71	59191	7	4C1C2	16	116	100787
3	4C1B3	19	106	102016	8	4C1C3	15	111	107589
4	4C1B4	7	36	33471	9	4C1C4	15	82	72199
5	4C1B5	20	121	92610	10	4C1C5	22	175	181494
	Total	**77**	**480**	**425750**	11	4C1C6	17	103	93783
					12	4C1C7	20	137	140445
					13	4C1C8	20	139	164655
					14	4C1C9	18	120	130398
						Total	**161**	**1105**	**1091758**
						Grand Total	**230**	**1585**	**1517508**

11. Priority categorization

Sl. No.	Priority category	Silt yield index	No. of Micro-watersheds	Area in ha.	Percentage
1	Very high	1200 and above	66	53578	3.5
2	High	1100-1199	108	100788	6.6
3	Medium	1000-1099	338	326211	21.5
4	Low	900-999	455	446888	29.5
5	Very low	Less than 900	618	590043	38.9
		Total	1585	1517508	100.0

12. Soil Erosion hazard

Sl. No.	Erosion	Area in ha.	Percentage
2	Slight Erosion	487622	32.1
3	Slight to moderate Erosion	89286	6.0
4	Moderate Erosion	779550	51.4
5	Moderate to severe Erosion	16697	1.1
6	Severe Erosion	3535	0.2
7	Severe to very severe Erosion	8228	0.5
	Total	1384918	91.3
	Miscellaneous	132590	8.7
	Total	1517508	100%

13. Distribution of the area vis a vis land use types

Sl. No.	Land use category	Area (ha.)	Percentage
1	Area under rain fed cultivation	426349	28.09
2	Area under irrigated cultivation	416764	27.48
3	Plantation Crops	234910	15.48
4	Barren/Fallow	10901	0.72
5	Forest	115228	7.59
6	Sparse vegetation/bushy vegetation uncultivated	180504	11.89
7	Quarying	262	0.02
	Total	1384918	91.26
	Misc.	132590	8.74
	Total	1517508	100.0

14. Distribution of soils vis a vis soil texture and erosion categories

Sl. No.	Textural classes	Slight erosion	Slight to moderate erosion	Moderate erosion	Moderate to severe erosion	Severe erosion	Severe to very severe erosion	Misc. lands	Total area in ha.	%
1	Coarse sand	612	151	1744	-	-	-	-	2507	0.2
2	Gravelly fine	-	9333	-	-	-	-	-	9333	0.6
3	Moderately fine to fine	298953	711	2793	-	-	-	-	302457	19.9
4	Moderately fine gravelly	27038	48782	117299	15435	466	-	-	209020	13.8
5	Fine loamy to fine	-	-	884	-	-	-	-	884	0.06
6	Moderately coarse gravelly	-	370	400	-	-	-	-	700	0.05
7	Moderately coarse	-	-	5244	1106	262	-	-	6612	0.4
8	Medium texture	-	-	26339	-	-	-	-	26339	1.7
9	Moderately fine	159967	11325	598376	156	2807	226	-	772857	50.9
10	Fine loamy	-	617	-	-	-	4470	-	5087	0.3
11	Fine	1052	10631	329	-	-	3352	-	15544	1.0
12	Moderately fine to coarse	-	-	5829	-	-	-	-	5829	0.4
13	Moderately coarse to moderately fine	-	7366	280	-	-	-	-	7646	0.5
14	Fine to coarse	-	-	15846	-	-	-	-	15846	1.0
15	Moderately fine to loamy	-	-	4187	-	-	-	-	4187	0.3
	Subtotal								1384848	91.3
16	Miscellaneous							132590	132590	8.7
	Total	487622	89286	779500	16697	3535	8228	132590	1517508	100

15. Distribution of soils of the area vis a vis soil depth

Sl. No.	Depth Category	Area (ha.)	Percentage
	Very Shallow to Shallow Soils	67991	4.48
1	Shallow to moderately deep Soils	306649	20.21
2	Moderately deep to deep Soils	49761	3.28
3	deep to very deep Soils	661196	43.57
4	Very deep Soils	299271	19.72
	Total	1384918	91.26
5	Misc.	132590	8.74
	Total	1517508	100.0

16. Distribution of soils of the area vis a vis physiographic position

Sl. No.	Physiographic Position	Area (ha.)	Percentage
1	River /Streams	16406	1.08
2	Sand beaches	1365	0.08
3	Delta alluvium/marine alluvium	278	0.02
4	Valley plains	299719	19.75
5	Pediplains	795057	52.39
6	Pediments	57876	3.81
7	Subdued hills	24140	1.59
8	Hill Valley	3433	0.23
9	Hill side slopes	183112	12.07
10	Gullied lands	3532	0.23
	Total	1384918	91.26
11	Misc.	132590	8.74
	Total	1517508	100.0

17. Distribution of Soils vis a vis different slope categories

Sl. No.	Slope category	Area (ha.)	Percentage
1	Nearly level to Very Gently Sloping (0-3 %)	450910	29.7
2	Very Gently Sloping to Gently Sloping (1-5 %)	543602	35.8
3	Gently Sloping to Strongly sloping (1-15 %)	66652	4.5
4	Gently Sloping to Strongly Sloping (3-10 %)	123005	8.1
5	Moderately Sloping Strongly Sloping(5-15 %)	13761	0.9
6	Strongly Sloping to Moderately Steep to Steep (10-25 %)	28031	1.8
7	Steep to Very Steep (25-50 %)	158957	10.5
	Total	1384918	91.3
	Misc.	132590	8.7
	Total	1517508	100

18. Distribution of Area in different Priority Categories vis a vis Diffeent States and its District

Sl.No.	State	Districs	Very High	High	Medium	Low	Very Low	Total	%
1	Andra pradesh	Chittoor	120	1093	7053	2013	454	10733	0.7
2	Karnataka	Bangalore	1851	2245	13089	79650	104792	201627	13.3
3	Karnataka	Kolar	14	4638	29006	56294	74345	164297	10.8
4	Tamil nadu	Dharmapuri	17129	43775	178463	213744	117488	570599	37.6
5	Tamil nadu	North Arcot	26326	32280	76884	59719	72102	267311	17.6
6	Tamil nadu	Pondicherry	0	0	0	0	7868	7868	0.5
7	Tamil nadu	Salem	65	4539	3378	8553	2925	19460	1.3
8	Tamil nadu	South Arcot	8073	12218	18338	26915	210069	275613	18.2
		Total	53578	100788	326211	446888	590043	1517508	100.0

19. Distribution of Area in different Priority Categories vis a vis Watersheds

Sl.No.	Watersheds	Very High	High	Medium	Low	Very Low	Total	%
1	4C1B1		-	9795	14557	114110	138462	9.1
2	4C1B2	-	-	-	-	59191	59191	3.9
3	4C1B3	-	-	5023	8593	88400	102016	6.7
4	4C1B4	-	-	-	836	32635	33471	2.2
5	4C1B5	11582	3104	5766	19399	52759	92610	6.1
6	4C1C1	8463	19479	24662	16376	31428	100408	6.6
7	4C1C2	-	463	13693	36609	50022	100787	6.6
8	4C1C3	-	-	5527	63168	38894	107589	7.1
9	4C1C4	1569	3406	9777	36519	20928	72199	4.8
10	4C1C5	-	1278	9252	49958	121006	181494	12
11	4C1C6	-	-	1841	11498	80444	93783	6.2
12	4C1C7	-	2383	10325	35100	92637	140445	9.3
13	4C1C8	-	-	1622	15489	147544	164655	10.9
14	4C1C9	-	1851	3505	18109	106933	130398	8.6
	Grand Total	21614	31964	100788	326211	1036931	1517508	100

20. Distribution of Area in different States and its Districts vis a vis Watersheds

Sl.No.	Water sheds	AP	Pondicherry	Karnataka		Tamilnadu				Total	%
		Chittoor	Pondicherry	Bangalore	Kolar	S.Arcot	N.Arcot	Dharmapuri	Salem		
1	4C1B1	-	-	-	-	138462 (146)	-	-	-	138462 (146)	9.1
2	4C1B2	-	7868 (24)	-	-	51323 (70)	-	-	-	59191 (71)	4
3	4C1B3	-	-	-	-	24884 (40)	77132 (89)	-	-	102016 (106)	6.7
4	4C1B4	-	-	-	-	33471 (36)	-	-	-	33471 (36)	2.2
5	4C1B5	-	-	-	-	23423 (38)	69187 (100)	-	-	92610 (121)	6.1
6	4C1B	-	7868 (24)	-	-	271563 (330)	146319 (189)	-	-	425750 (480)	28
7	4C1C1	-	-	-	-	4050 (11)	34971 (48)	59972 (87)	-	100408 (122)	6.6
8	4C1C2	-	-	-	-	-	-	82742 (106)	1415 (3)	100787 (116)	6.6
9	4C1C3	2478 (5)	-	-	-	-	17405 (34)	87706 (102)	18045 (25)	107589 (111)	7.1
10	4C1C4	1603 (3)	-	-	-	-	68616 (80)	1980 (6)	-	72199 (82)	4.8
11	4C1C5	34 (1)	-	-	-	-	-	181460 (175)	-	181494 (175)	12
12	4C1C6	-	-	-	180 (2)	-	-	93603 (103)	-	93783 (103)	6.2
13	4C1C7	6618 (15)	-	-	95097 (94)	-	-	38730 (58)	-	140445 (137)	9.3
14	4C1C8	-	-	124422 (117)	15827 (23)	-	-	24406 (34)	-	164655 (139)	11
15	4C1C9	-	-	77205 (83)	53193 (57)	-	-	-	-	130398 (120)	8.6
16	4C1C	10733 (24)	-	201627 (200)	164297 (176)	4050 (11)	120992 (162)	570599 (671)	19460 (28)	1091758 (1105)	72
	Total	10733 (24)	7868 (24)	201627 (200)	164297 (176)	275613 (341)	267311 (351)	570599 (671)	19460 (28)	1517508 (1585)	100

21. Extent of area under different erosion intensity mapping units:

Sl. No.	EIMUs	Area in ha.	Percent
1.	A4	16406	1.08
2.	CA1	287	0.02
3.	CA3	1052	0.07
4.	CA4	278	0.02
5.	CA5	612	0.04
6.	CA6	315	0.02
7.	CD3	151	0.01
8.	G1	35278	2.32
9.	G1.1	1209	0.08
10.	G1.2	145	0.01
11.	G2	40079	2.64
12.	G2.1	18530	1.22
13.	G2.2	20241	1.33
14.	G2.3	5271	0.35
15.	G2.4	1986	0.13
16.	G2.5	1298	0.09
17.	G2.6	21735	1.43
18.	G2.7	2545	0.17
19.	G2.8	806	0.05
20.	G2.9	241	0.02
21.	G3	2881	0.19
22.	G4	5244	0.35
23.	G5	4065	0.27
24.	G5.1	558	0.04
25.	G5.2	262	0.02
26.	G5.3	2494	0.16
27.	G5.4	8792	0.58
28.	G5.5	4390	0.29
29.	65.6	112	0.01
30.	G6	894	0.06
31.	G7.1	868	0.06
32.	G8	280	0.02
33.	G8.1	5425	0.36
34.	G8.2	548	0.04
35.	G8.3	1563	0.10
36.	G8.4	760	0.05
37.	G9	896	0.06
38.	G9.1	15846	1.04
39.	G9.3	2156	0.14
40.	G10	40854	2.69
41.	G10.1	62123	4.09
42.	G10.4	11210	0.74
43.	G10.5	1025	0.07
44.	G10.6	8805	0.58
45.	G10.7	19730	1.30
46.	G10.9	29089	1.92
47.	G12	207091	13.65
48.	G12.1	35656	2.35
49.	G12.2	1313	0.09
50.	G12.3	466	0.03
51.	G12.4	7366	0.49
52.	G12.5	117103	7.72
53.	G12.6	747	0.05
54.	G12.9	452	0.03
55.	G12.10	8881	0.59
56.	G13	1681	0.11
57.	G14	32234	2.12
58.	G14.1	722	0.05
59.	G14.2	12841	0.85
60.	G14.3	864	0.06
61.	G15	1836	0.12
62.	G16	370	0.02
63.	G16.1	400	0.03
64.	G17	401	0.03
65.	G18	7094	0.47
66.	G18.1	884	0.06
67.	G19	25202	1.66
68.	G22	9053	0.60
69.	G22.1	911	0.06
70.	G23.1	3356	0.22
71.	G24	1578	0.10
72.	G26	296350	19.53
73.	G26.1	85962	5.66
74.	G26.2	3284	0.22
75.	G26.3	4845	0.32
76.	G26.5	2317	0.15
77.	G27	2232	0.15
78.	G28.2	617	0.04
79.	G29.4	1944	1.13
80.	G29.5	1617	1617
81.	G30	552	0.04
82.	G30.1	176	0.01
83.	G31	2551	0.17
84.	G31.2	154	0.01
85.	G32	1242	0.08
86.	G33	1565	0.10
87.	G33.1	225	0.01
88.	G33.2	156	0.01
89.	G37	51694	3.41
90.	G37.1	4187	0.28
91.	G39.1	4470	0.29
92.	G40	226	0.01
93.	L1*	329	0.02
94.	L7*	201	0.01
95.	LT1	1144	0.08
96.	LT2	23534	1.55
97.	LT2.1	5163	0.34
98.	LT3	1661	0.11
99.	LT4	408	0.03
100	LT5	382	0.23
101	LT6	3532	0.23
102	LT7	711	0.5
103	LT8	3650	0.24
	Total	1384918	91.26
Miscellaneous			
Marshy lands.		122	0.01
ROC		5325	0.35
Habitation		51525	3.40
River/stream		17175	1.13
Tank		58443	3.85
MISC TOTAL		132590	8.74
	Total	1517508	100.0