

# REPORT ON PRIORITIZATION OF MICRO WATERSHEDS IN 4B2 CATCHMENT (NON RVP) IN COIMBATORE, ERODE, KARUR, MADURAI (DINDIGUL&THENI) NAMAKKAL, SALEM, AND THIRUCHIRAPALLI DISTRICTS OF TAMILNADU AND IDUKKI DISTRICT, KERALA

## ABSTRACT

1. Survey area : 4 B2 Catchment in Coimbatore, Dindigal, Erode, Karur, Madurai, Namakkal, Salem, Tiruchirapalli and Theni Districts\* of Tamilnadu and Idukki District Kerala
2. Location : 10° 16 30 to 11° 30 12 N Latitude  
78° 10 45 to 78° 50 15 E longitude
3. Total area surveyed : 2099326 hectares
4. Hydrological divisions
- a) Region - 4
- b) Basin - 4B
- c) Catchment - 4B2
- d) Subcatchments - 4B2A, 4B2B, 4B2C & 4B2D
- e) Watersheds - 4B2A1 to 4B2A7, 4B2B1 to 4B2B4, 4B2C1 to 4B2C4 and 4B2D1 to 4B2D2
- f) Watersheds & Microwatersheds:

Sl. No	Water Shed Code	No. of Micro watersheds	Area in Hectare	Sl. No.	Water Shed Code	No. of Micro watersheds	Area in Hectare
1	4B2A1	135	126065	1	4B2C1	193	239167
2	4B2A2	125	137380	2	4B2C2	73	70283
3	4B2A3	164	173720	3	4B2C3	135	150499
4	4B2A4	71	86538	4	4B2C4	61	44213
5	4B2A5	118	89661		<b>Total</b>	<b>462</b>	<b>504162</b>
6	4B2A6	178	161184	1	4B2D1	117	93260
7	4B2A7	151	124486	2	4B2D2	149	148767
	<b>Total</b>	<b>942</b>	<b>894014</b>		<b>Total</b>	<b>266</b>	<b>242027</b>
1	4B2B1	101	96275	<b>Grand Total</b>		<b>2179</b>	<b>2099326</b>
2	4B2B2	157	133710				
3	4B2B3	162	152184				
4	4B2B4	89	76954				
	<b>Total</b>	<b>509</b>	<b>459123</b>				

- Madurai district has been subdivided into Madurai, Dindigal and Theni districts
- Tiruchirapalli district has been subdivided into Tiruchirapalli, Karur and Perambalur

5. Extent of area under different erosion intensity mapping units(EIMUs)

Sl. No.	EIMUs	Area (ha)	Percentage
1	A1 ✓	37392	1.78
2	A2 ✓	943	0.04
3	A3 ✓	3561	0.17
4	A4 ✓	23313	1.11
5	CA2 ✓	3261	0.16
6	CD1 ✓	191	0.01
7	G1 ✓	95818	4.56
8	G1.1 ✓	18507	0.88
9	G2 ✓	93595	4.46
10	G2.1 ✓	27725	1.32
11	G2.2 ✓	6221	0.30
12	G2.3 ✓	4093	0.19
13	G2.8 ✓	1078	0.05
14	G3 ✓	18951	0.90
15	G4 ✓	11259	0.54
16	G5 ✓	5352	0.25
17	G5.1 ✓	2038	0.10
18	G6 ✓	7651	0.36
19	G7 ✓	2019	0.10
20	G7.1 ✓	3307	0.16
21	G8 ✓	2194	0.10
22	G8.1 ✓	563	0.03
23	G8.3 ✓	2979	0.14
24	G9 ✓	12518	0.60
25	G9.1 ✓	2716	0.13
26	G10 ✓	17225	0.82
27	G11 ✓	3361	0.16
28	G12 ✓	181637	8.65
29	G12.1 ✓	1704	0.08
30	G12.2 ✓	65060	3.10
31	G12.4 ✓	1642	0.08
32	G12.5 ✓	6730	0.32
33	G12.6 ✓	18596	0.89
34	G13 ✓	67335	3.21
35	G14 ✓	230535	10.98
36	G14.1 ✓	2303	0.11
37	G15 ✓	37439	1.78
38	G16 ✓	4594	0.22
39	G16.1 ✓	431	0.02

40	G17 ✓	1076	0.05
41	G18 ✓	197039	9.39
42	G19 ✓	99758	4.75
43	G20 ✓	22173	1.06
44	G21 ✓	26284	1.25
45	G22 ✓	78457	3.74
46	G22.1 ✓	2137	0.10
47	G23 ✓	3002	0.14
48	G24 ✓	10450	0.50
49	G25 ✓	207	0.01
50	G25.1 ✓	8255	0.39
51	G26 ✓	298933	14.24
52	G26.1 ✓	43343	2.06
53	G27 ✓	77704	3.70
54	G28 ✓	32108	1.53
55	G28.1 ✓	14061	0.67
56	G29 ✓	2333	0.11
57	G30 ✓	365	0.02
58	G31 ✓	1090	0.05
59	G32 ✓	6315	0.30
60	G33.1 ✓	426	0.02
61	G33.2 ✓	1995	0.10
62	G34.1 ✓	770	0.04
63	G35 ✓	1810	0.09
64	G39 ✓	698	0.03
65	G40 ✓	18	0.00
66	L1 ✓	5591	0.27
67	L2 ✓	25864	1.23
68	L3 ✓	241	0.01
69	L5 ✓	1961	0.09
70	L6 ✓	4270	0.20
71	L7 ✓	2911	0.14
SUBTOTAL		1997482	95.15
1	HABIT	34403	1.64
2	RIVER/ST	22241	1.06
3	TANK	22535	1.07
4	ROC	21699	1.03
5	OTHERS	966	0.05
MISC. TOTAL		101844	4.85
GRAND TOTAL		2099326	100.00

28425

19560  
11315

1280

21225

35549

22429

22329

37798

23396

95320

94310

195

6. Agro climatic region : 10 (semiarid subtropical with excessive evapo-transpiration)
7. Type of survey : Reconnaissance survey for priority delineation
8. Period of survey : 1994-1997
9. Base maps : 1:50,000 scale Survey of India topographic maps
10. Toposheet nos. : 58E/ 1, 2,3,4,6,7,8, 9,10,11,12,13,14,15,16  
58F/1,2,3,4,5,6,7,8,9,10,11,12,13,14,15,16  
58J/1,2,3,4 ; 58 B/9, 13, 58A/12, 16

**11. Priority classification:**

Sl.No.	Priority category	Silt yield index	No. of Micro-watershed	Area in ha.	Percent age
1	Very high	1200 and above	126	107706	5.13
2	High	1100-1199	280	250971	11.95
3	Medium	1000-1099	509	485332	23.12
4	Low	900-999	569	586445	27.93
5	Very low	Less than 900	695	668872	31.86
Total			2179	2099326	100.00

**12. District wise distribution of area and number of microwatersheds in different priority categories**

S.NO	Priority category	TAMILNADU					Kerala	TOTAL
		Coimbatore	Erode	Madurai	Salem	Tiruchirapalli	Idukki	
1	Very high	68618 (68)	-	17568 (23)	212520 (25)	-	-	107706 (126)
2	High	134523 (171)	-	54237 (73)	49675 (41)	10574 (11)	1962 (2)	250971 (280)
3	Medium	233063 (266)	675 (1)	58456 (76)	122042 (113)	53833 (66)	17263 (24)	485332 (509)
4	Low	230241 (256)	2033 (3)	172932 (175)	133727 (115)	37630 (47)	9882 (15)	586445 (569)
5	Very low	362602 (415)	2068 (8)	116760 (123)	142019 (130)	35176 (40)	10247 (17)	668872 (695)
<b>TOTAL</b>		1029047 (1194)	4776 (12)	419953 (469)	468983 (424)	137213 (164)	39354 (58)	2099326 (2179)

- Madurai district has been subdivided into Madurai, Dindigal and Theni districts
- Tiruchirapalli district has been subdivided into Tiruchirapalli, Karur and Perambalur

13. Watershed wise distribution of area and number of microwatersheds in different districts

S.NO	Watershed Code	TAMILNADU					Kerala	TOTAL
		Coimbatore	Erode	Madurai * *	Salem	Tiruchi rapalli	Idukki	
1	4B2A1	-	-	66148 (78)	-	54517 (74)	-	*120665 (135)
2	4B2A2	-	-	137380 (125)	-	-	-	137380 (125)
3	4B2A3	56796 (64)	-	93611 (103)	-	23313 (35)	-	*173720 (164)
4	4B2A4	70993 (60)	-	-	-	15545 (14)	-	*86538 (71)
5	4B2A5	7238 (14)	-	82423 (109)	-	-	-	*89661 (118)
6	4B2A6	81439 (112)	-	40391 (54)	-	-	39354 (58)	*161184 (178)
7	4B2A7	12486 (151)	-	-	-	-	-	12486 (151)
	<b>TOTAL</b>	341332 (401)	-	419953 (469)	-	93375 (123)	39354 (58)	*894014 (942)
8	4B2B1	53609 (66)	-	-	-	42666 (39)	-	*96275 (99)
9	4B2B2	133710 (150)	-	-	-	-	-	133710 (150)
10	4B2B3	152184 (171)	-	-	-	-	-	152184 (171)
11	4B2B4	72178 (87)	4776 (12)	-	-	-	-	*76954 (89)
	<b>TOTAL</b>	411681 (474)	4776 (12)	-	-	42666 (39)	-	*459123 (509)
12	4B2C1	-	-	-	237995 (192)	1172 (2)	-	*239167 (193)
13	4B2C2	-	-	-	70283 (73)	-	-	70283 (73)
14	4B2C3	-	-	-	150499 (135)	-	-	150499 (135)
15	4B2C4	34007 (53)	-	-	10206 (24)	-	-	*44213 (61)
	<b>TOTAL</b>	34007 (53)	-	-	468983 (424)	1172 (2)	-	*504162 (462)
16	4B2D1	93260 (117)	-	-	-	-	-	93260 (117)
17	4B2D2	148767 (149)	-	-	-	-	-	148767 (149)
	<b>TOTAL</b>	242027 (266)	-	-	-	-	-	242027 (266)
	<b>GRAND TOTAL</b>	1029047 (1194)	4776 (12)	419953 (469)	468983 (424)	137213 (164)	39354 (58)	*2099326 (2179)

\* Denotes one microwatershed covers area in more than one district

\*\* Includes area of Dindigal & Theni.

#### 14. Watershed wise distribution of area and number of microwatersheds in different priority categories

S.No.	Watersheds	Very High	High	Medium	Low	Very Low	Total
1	4B2A1	-	4131 (4)	47040 (55)	58803 (61)	10689 (15)	120665 (135)
2	4B2A2	1049 (1)	7725 (8)	12156 (11)	56010 (48)	60440 (57)	137380 (125)
3	4B2A3	-	5432 (6)	35353 (36)	78373 (72)	54562 (50)	173720 (164)
4	4B2A4	-	2167 (2)	15245 (13)	28065 (21)	41061 (35)	86538 (71)
5	4B2A5	15325 (20)	35319 (49)	14668 (19)	11528 (14)	12821 (16)	89661 (118)
6	4B2A6	5709 (5)	24324 (27)	56637 (62)	38488 (41)	36026 (43)	161184 (178)
7	4B2A7	45744 (55)	29807 (36)	22959 (26)	18281 (21)	8075 (13)	12486 (151)
	<b>TOTAL</b>	67827 (81)	108905 (132)	204060 (222)	289548 (278)	223674 (229)	894014 (942)
8	4B2B1	-	10969 (11)	16800 (19)	17033 (15)	51473 (54)	96275 (99)
9	4B2B2	1590 (2)	24991 (31)	46336 (52)	37999 (42)	22794 (23)	133710 (150)
10	4B2B3	7978 (9)	10122 (12)	46845 (51)	45084 (48)	42155 (51)	152184 (171)
11	4B2B4	-	6881 (9)	3584 (4)	7860 (10)	58629 (66)	76954 (89)
	<b>TOTAL</b>	9568 (11)	52963 (63)	113565 (126)	107976 (115)	175051 (194)	459123 (509)
12	4B2C1	13600 (12)	40078 (30)	90640 (76)	63571 (49)	31278 (26)	239167 (193)
13	4B2C2	-	8171 (8)	18256 (21)	14155 (16)	29701 (28)	70283 (73)
14	4B2C3	-	1130 (1)	11557 (11)	55652 (47)	82160 (76)	150499 (135)
15	4B2C4	9048 (13)	3991 (6)	12540 (17)	11103 (14)	7531 (11)	44213 (61)
	<b>TOTAL</b>	22648 (25)	53370 (45)	132993 (125)	144481 (126)	150670 (141)	504162 (462)
16	4B2D1	-	15328 (19)	6653 (9)	13413 (17)	57866 (72)	93260 (117)
17	4B2D2	7663 (9)	20405 (21)	28061 (27)	31027 (33)	61611 (59)	148767 (149)
	<b>TOTAL</b>	7663 (9)	35733 (40)	34717 (36)	44440 (50)	119477 (131)	242027 (266)
	<b>GRAND TOTAL</b>	107706 (126)	250971 (280)	485332 (509)	586445 (569)	668872 (695)	2099326 (2179)

**15. Soil Erosion hazard**

Sl. No	Erosion classes	Area in ha.	Percentage
1	Slight erosion	768059	36.59
2	Slight to moderate erosion	426947	20.34
3	Moderate erosion	752810	35.86
4	Moderate to severe erosion	16771	0.80
5	Severe erosion	32895	1.57
	Total	1997482	95.15
	Misc. lands	101844	4.85
	<b>Grand Total</b>	<b>2099326</b>	<b>100.0</b>

**16. Distribution of area w.r.t. soil depth categories:**

Sl. No.	Depth Classes	Area in Hectare	Percentage
1	Very shallow to shallow	137774	6.56
2	Shallow to moderately deep	536357	25.55
3	Moderately deep to deep	99211	4.73
4	Deep to very deep	917233	43.69
5	Very deep	306907	14.62
	Total	1997482	95.15
	Misc. Lands	101844	4.85
	<b>Grand Total</b>	<b>2099326</b>	<b>100</b>

**17. Distribution of area w.r.t. physiographic position:**

Sl.No.	Physiographic position	Area in Hectare	Percentage
1	Hill side slopes	308930	14.72
2	Pediments	34653	1.65
3	Pedi plains	1284850	61.20
4	Valley plains	298933	14.24
5	Lower hill valley	365	0.02
6	Upper hill Valley	1090	0.05
7	Sand dunes	191	0.01
8	Delta	3261	0.16
9	Stream and River Banks	65209	3.11
	Total	1997482	95.15
10	Misc Lands	101844	4.85
	<b>Grand Total</b>	<b>2099326</b>	<b>100.0</b>

**18. Distribution of area w.r.t. soil management/Conservation Status:**

Sl. No.	Soil management / Conservation Status	Area in hectare	Percentage
1	Unconserved	1057491	50.37
2	Poorly conserved/Unmanaged	184186	8.77
3	Well conserved/Bunded	235452	11.22
4	Well bunded/terraced	409317	19.50
5	Poorly terraced/Poorly bunded	111036	5.29
	Total	1997482	95.15
	Misc. lands	101844	4.85
	<b>Grand Total</b>	<b>2099326</b>	<b>100.0</b>

**19. Distribution of area w.r.t. land use categories:**

Sl.No.	Details of Land use	Area in hectare	Percentage
1	Forest	309157	14.73
2	Coffee, tea, cardamom plantation	36871	1.76
3	Rainfed agriculture	1062664	50.62
4	Fallow lands	87722	4.18
5	Grass cover with thin thorny bushes	51947	2.47
6	Irrigated crops	443658	21.13
7	Quarries	241	0.01
8	Wastelands/open scrub	1961	0.09
9	Uncultivated bushy vegetation	3261	0.16
	Total	1997482	95.15
	Misc lands	101844	4.85
	Grand Total	2099326	100.00

**20. Distribution of area w.r.t. Textural categories:**

Sl. No.	Textural Type	Area in hectare	Percent
1	Fine	124071	5.91
2	Moderately fine	626397	29.84
3	Moderately fine to fine	411050	19.58
4	Moderately fine gravelly	741772	35.33
5	Moderately fine to coarse	6552	0.31
6	Moderately coarse	13297	0.63
7	Moderately coarse gravelly	5025	0.24
8	Medium gravelly	26284	1.25
9	Fine gravelly	34069	1.62
10	Coarse	8965	0.43
	Total	1997482	95.15
	Misc	101844	4.85
	Grand Total	2099326	100.00

**21. Salient features:**

- a. The total geographical area under report is 2099326 ha. This has been divided into 2179 microwatersheds.
- b. Out of the total area 20,99326 ha only 107706 ha falls under very high priority and number of micro watersheds is 126 whereas 250971 ha falls under high priority category with number of micro watersheds being 280.
- c. In the surveyed area 16771 ha is under moderate to severe erosion, 32895 ha is under severe erosion
- d. In the surveyed area red soils (gravelly and non-gravelly) have the maximum area of 1571665 ha constituting 74.87 % and black soils 416864 ha constituting 19.86% of the total geographical area and miscellaneous land use covers 101844 ha (4.85%).
- e. As for distribution of area under land use categories maximum area falls under rainfed cultivation covering 1062664 ha (50.62%) followed by area under irrigated agriculture is 443658 (21.13%), forest covers 309157 ha (14.73%).
- f. As for distribution of area under different soil management/conservation categories maximum area falls under unconserved, 1057491 ha (50.37%), followed by well conserved/terraced, 644769 ha (30.72%) and poorly managed/terraced, 295222 ha (14.06%).