

# REPORT ON PRIORITIZATION OF PRIORITY MICRO WATERSHEDS IN 4C1A (BETWEEN CAUVERY AND PANNIYAR) SUBCATCHMENT (NON RVP) DHARMAPURI, SALEM, SOUTH ARCOT AND TIRUCHIRAPALLI, DISTRICTS TAMILNADU

## ABSTRACT

1. Survey area : Report on prioritization of micro watersheds in 4C1A Subcatchment (Between Cauvery and Ponnaiyar) (Non RVP) in, Dharmapuri, Salem, South Arcot and Tiruchirapalli Districts Tamilnadu
2. Location : 11° 11' 15" to 12° 58' 20" N Latitude and 78° 14' 10" Longitude to 79° 47' 80" Longitude
3. Total area surveyed : 827159 hectares
4. Agro climatic region : 10 (semiarid subtropical with excessive evapo-transpiration)
5. Type of survey : Rapid Reconnaissance 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/ 2, 5, 6, 7, 9, 10, 11, 12, 13, 14, 15, 16  
58 M/ 1, 2, 3, 4, 6, 7, 11, 14, 15
9. Hydrological divisions
- a) Region - 4
- b) Basin - 4C
- c) Catchment - 4C1
- d) Sub catchments - 4C1A,
- e) Watersheds - 4C1A1 to 4C1A8
- f) Sub watersheds and Microwatersheds

S.No.	Water sheds	Number of Sub - watersheds	No of micro watersheds	Area in Hectare
1	4C1A1	20	97	113016
2	4C1A2	19	126	121434
3	4C1A3	22	137	105599
4	4C1A4	12	72	66087
5	4C1A5	21	146	130026
6	4C1A6	22	150	124891
7	4C1A7	14	81	73646
8	4C1A8	15	90	92460
	Total	145	899	827159

**10. Priority categorization:**

S. No.	Priority category	Silt yield index	No. of Micro-watershed	Area in ha.	Percentage
1	Very high	1200 and above	82	76394	9.23
2	High	1100-1199	63	54712	6.62
3	Medium	1000-1099	114	108287	13.09
4	Low	900-999	154	146898	17.76
5	Very low	Less than 900	486	440868	53.30
		Total	899	827159	100.00

**11. Distribution of area and number of microwatersheds in different priority categories vis a vis different districts**

S.NO	PRIORITY	TAMILNADU				TOTAL
		SALEM	DHARAMPURI	SOUTH ARCOT**	TRICHIRAPPALLI	
1	Very high	27302 (32)	0 (0)	45222 (54)	3870 (3)	76394 (*82)
2	High	19248 (24)	0 (0)	20974 (28)	14490 (18)	54712 (*63)
3	Medium	52217 (57)	1075 (2)	37660 (44)	17335 (20)	108287 (*114)
4	Low	56125 (60)	3345 (6)	45137 (55)	42264 (50)	146898 (*154)
5	Very low	81596 (110)	4505 (6)	268237 (286)	86530 (114)	440868 (*486)
	<b>Total</b>	236515 (283)	8925 (14)	417230 (467)	164489 (205)	827159 (*899)

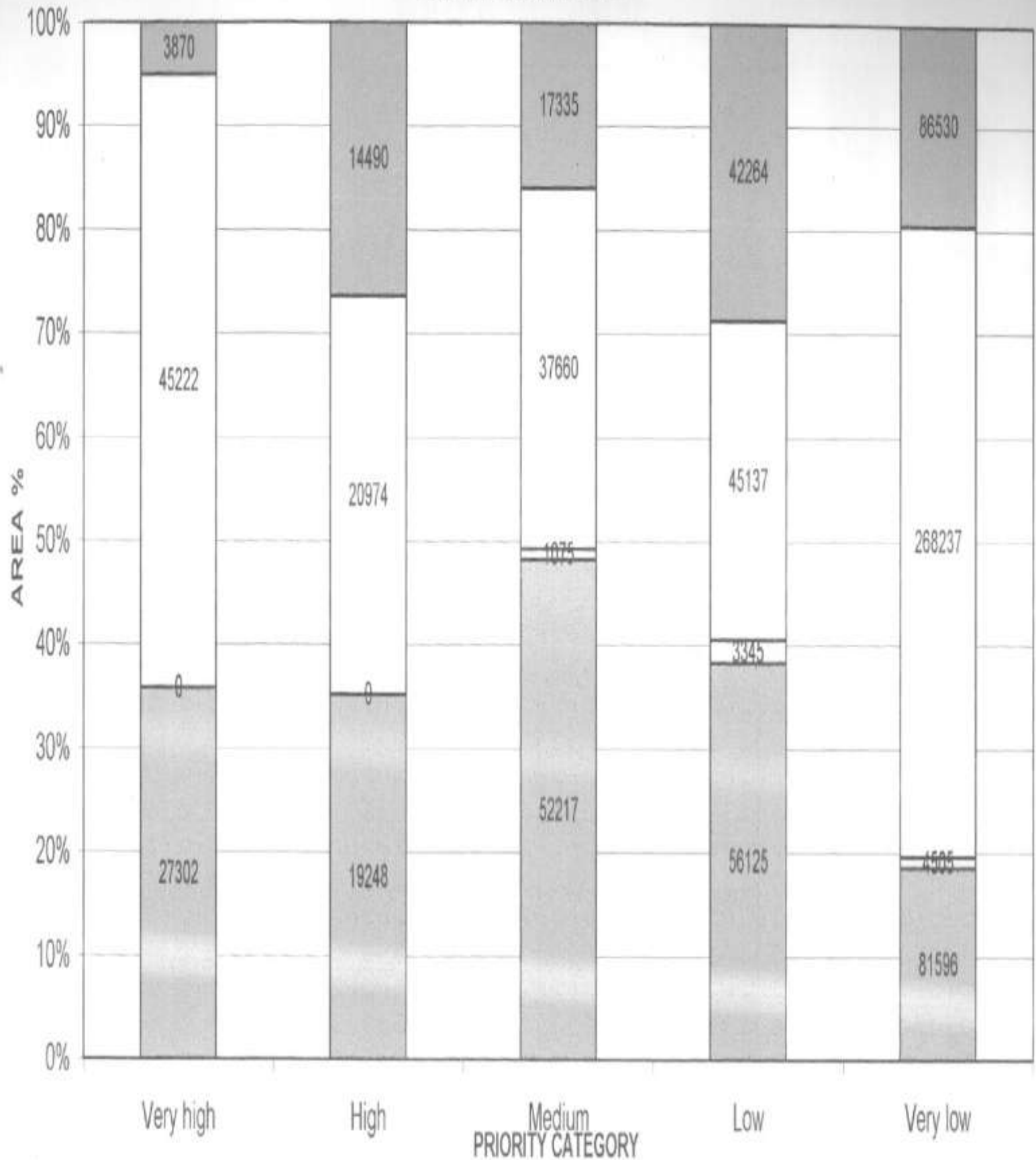
\* Total number of microwatersheds may not tally with the total number of microwatersheds as some of the microwatersheds fall in more than one district

\*\*denotes the areas of Cuddalore and Villupuram districts presently.

**12. Distribution of area under different priority categories vis-à-vis different watersheds**

Watersheds	Priority category					Total
	Very High	High	Medium	Low	Very Low	
4C1A1	6006 (5)	8983 (8)	8011 (8)	6011 (5)	84005 (71)	113016 (97)
4C1A2	14023 (15)	6899 (8)	13634 (13)	14109 (15)	72769 (75)	121434 (126)
4C1A3	24174 (30)	7222 (10)	16514 (21)	22213 (27)	35476 (49)	105599 (137)
4C1A4	0 (0)	0 (0)	0 (0)	2942 (3)	63145 (69)	66087 (72)
4C1A5	24001 (25)	12757 (16)	29204 (33)	30714 (31)	33350 (41)	130026 (146)
4C1A6	1519 (2)	13337 (16)	13673 (15)	35997 (39)	60365 (78)	124891 (150)
4C1A7	3652 (3)	0 (0)	1940 (2)	3999 (5)	64055 (71)	73646 (81)
4C1A8	3019 (2)	5514 (5)	25311 (22)	30913 (29)	27703 (32)	92460 (90)
Total	76394 (82)	54712 (63)	108287 (114)	146898 (154)	440868 (486)	827159 (899)

# DISTRIBUTION OF AREA PRIORITY CATEGORYWISE VS DISTRICTWISE



SALEM
  DHARAMPURI
  SOUTH ARCOT
  TRICHIRAPPALLI

**13. Distribution of area vis a vis different soil erosion classes**

S No.	Erosion	Area in ha.	Percentage
1	Slight(e1)	388591	46.98
2	Slight to moderate(e1-e2)	104522	12.64
3	Moderate(e2)	223968	27.08
4	Moderate to severe(e2-e3)	35433	4.28
5	Severe (e3)	19223	2.32
6	Severe to very severe (e3-e4)	3032	0.37
	Total	774769	93.67
	Miscellaneous	52390	6.33
	Total	827159	100.00

**14. Distribution of area vis a vis different soil depth classes**

S. No.	Depth Category	Area (ha.)	Percentage
1	Very Shallow to Shallow	17503	2.12
2	Shallow to moderately deep	211965	25.63
3	Moderately deep to deep	30107	3.64
4	Deep to very deep	303086	36.64
5	Very Deep	212108	25.64
	Total	774769	93.67
	Misc.	52390	6.33
	Total	827159	100.00

**15. Distribution of the area vis a vis different land use types:**

S. No.	Land use category	Area (ha.)	Percentage
1	Area under rain fed cultivation	224142	27.1
2	Area under irrigated cultivation	319194	38.7
3	Plantations(Forest based)	49956	6.0
4	Forest	161565	19.5
5	Sparse vegetation	273	0.03
6	Thin Bushy vegetation/Thorny Bushes	3161	0.4
7	Fallow lands	15919	1.9
8	Querying	559	0.06
	Total	774769	93.69
	Misc.	52390	6.3
	Total	827159	100.0

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

S.No	Soil Color	Area(ha)	Percent
1	Red Soil	433619	52.42
2	Black Soil	326452	39.47
3	Red & Black Mixed soils	14698	1.78
	Subtotal	774769	93.67
	Misc.	52390	6.33
	TOTAL	827159	100.00

**17. Distribution of the area vis a vis different physiographic position:**

S. No.	Physiographic Position	Area (ha.)	Percentage
1	River Streams	15697	1.9
2	Sand beaches/delta	14191	1.7
3	Delta alluvium	8731	1.1
4	Valley plains	188737	22.8
5	Lower Hill Valley	2642	0.3
6	Pediaplains	357495	43.2
7	Pediments	14183	1.7
8	Low subdued hills	2087	0.3
9	Subdued hills	173	0.02
10	Upper Hill Valley	18530	2.2
11	Hill side slopes	144321	17.4
12	Hill crest and side slopes	6919	0.8
13	Intermontane valley	680	0.1
14	Gullied lands	383	0.004
	Total	774769	93.7
13	Misc.	52390	6.3
	Grand Total	827159	100.0

**18. Distribution of soils of the area vis a vis different textural classes:**

S.No.	Textural Type	Area(ha)	Percentage
1	Coarse sand	14235	1.7
2	Moderately fine to fine	194075	23.5
3	Moderately fine gravelly	80938	9.8
4	Moderately coarse gravelly	556	0.03
5	Moderately coarse	9471	1.15
6	Fine gravelly	206	0.02
7	Moderately fine	315749	38.2
8	Fine	99136	12.0
9	Fine loamy to fine	814	0.1
10	Medium gravelly	3834	0.5
11	Fine saline	1596	0.2
12	Medium textured	36871	4.5
13	Moderately fine to moderately coarse	16794	2.0
14	Gravelly fine loamy	494	0.05
	Grand Total	774769	93.75
	Misc.	52390	6.3
	Total	827159	100.0



### 19. Distribution of Soils vis a vis different slope categories:

S. No.	Slope category	Area (ha.)	Percentage
1	Nearly level to level (0-1%)	195268	23.61
2	Nearly level to level to Very gently sloping (0-3%)	237609	28.73
3	Very gently sloping (1-3%)	21916	2.65
4	Very gently to gently sloping (1-5%)	105163	12.71
5	Very gently to moderately sloping (1-10%)	14276	1.73
6	Gently sloping to moderately sloping (3-10%)	45225	5.47
7	Gently sloping (3-5%)	849	0.10
8	Moderately sloping to strongly sloping (5-15%)	561	0.07
9	Strongly sloping to Moderately steep to steep (10-25%)	20168	2.44
10	Steep to very steep (25-50%)	133734	16.17
	Total	774769	93.67
	Misc.	52390	6.33
	Total	827159	100.00

### 20. Salient features:

- a. Out of the total surveyed area only 131106 hectare (15.85%) falls under very high and high priority categories and in need of immediate soil degradational control measures as per the availability of resource;
- b. Severe to very severe erosion area and moderate to severely eroded affected area is 57688 hectare in the surveyed area;
- c. Physiographically maximum area is covered by Pediplains, valley plains and hill side slopes
- d. Red soil cover an area of 433619 hectare and black soils cover an area of 326452 hectare;
- e. The majority of the soils of the area are moderately fine to fine in texture;
- f. Depth-wise 515194 hectare (62.3%) soils are more than 50 cm deep ;