

**REPORT ON DEMARCATION OF PRIORITY MICRO WATERSHEDS IN 4B3A and 4B3B SUBCATCHMENTS (NON RVP), BANGALORE, CHAMRAJNAGAR AND MYSORE, DISTRICTS, KARNATAKA, DHARAMPURI, ERODE\* AND SALEM DISTRICTS, TAMILNADU**

**ABSTRACT**

**1. Survey area**

REPORT ON DEMARCATION OF PRIORITY MICRO WATERSHEDS IN 4B3A and 4B3B SUBCATCHMENTS (NON RVP), BANGALORE, CHAMRAJNAGAR AND MYSORE, DISTRICTS KARNATAKA, DHARAMPURI, ERODE\* AND SALEM DISTRICTS, TAMILNADU

**2. Location**

: 11° 34 N to 13° 22 N Latitude 76° 47'E to 78° 18 E Longitude

**3. Total area surveyed**

: 1433693 hectares

**4. Hydrological divisions**

- a) Region - 4  
 b) Basin - 4B  
 c) Catchment - 4B3  
 d) Subcatchments - 4B3A, 4B3B,  
 e) Watersheds- 4B3A1 to 4B3A6, 4B3B1 to 4B3B8,

Watersheds	Area (in Ha)	No. of microwatersheds	Watersheds	Area (in Ha)	No. of microwatersheds
4B3A1	207769	170	4B3B1	102562	90
4B3A2	49291	64	4B3B2	41932	42
4B3A3	82005	78	4B3B3	154591	130
4B3A4	64314	59	4B3B4	94625	82
4B3A5	188229	178	4B3B5	133339	137
4B3A6	33994	42	4B3B6	85669	112
<b>4B3A</b>	<b>625602</b>	<b>591</b>	4B3B7	51278	48
			4B3B8	144095	138
			<b>4B3B</b>	<b>808091</b>	<b>779</b>
<b>Grand Total</b>				<b>1433693</b>	<b>1370</b>

**5. Agro climatic region**

: 10 (semiarid subtropical with excessive evapo-transpiration)

**6. Type of survey**

: RR survey for priority delineation

**7. Period of survey**

: April 95 to December 1997

**8. Base maps**

: 1:50,000 scale Survey of India topographic maps

**9. Topo-sheet nos.**

:57 G/ 3, 4, 7,8, 11, 12  
 57 O/ 16  
 57 H/1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,14,15,16  
 57 L/2, 3, 4, 8  
 58 A/ 13, 14  
 58 E/ 1, 2, 5, 6, 9, 10, 13, 14  
 58 I/1, 5

\*Erode district was earlier known as Periyar District. Area of Bangalore district comprises of Bangalore Rural and Bangalore Urban districts and in the area for Mysore district the area of Chamrajnagar is also included.

### 10. Priority classification

Sl. No.	Priority category	Silt yield index	No. of Micro-watersheds	Area (in ha)	Percentage
1	Very high	1200 and above	244	270742	18.87
2	High	1100-1199	336	379736	26.47
3	Medium	1000-1099	387	402094	28.03
4	Low	900-999	240	236170	16.46
5	Very low	Less than 900	163	144951	10.17
Total			1370	1433693	100.0

### 11. District wise, Priority category wise distribution of area and number of microwatersheds

S. No.	Priority	Tamilnadu				Karnataka		Total
		Salem	Dharampuri	Erode	Coimbatore	Mysore **	Bangalore **	
1	Very High	7144 (8)	122416 (113)	46797 (50)	-	79087 (77)	15298 (19)	270742 (244)
2	High	23829 (13)	116736 (104)	43322 (45)	-	98446 (92)	97403 (106)	379736 (336)
3	Medium	14239 (15)	102680 (98)	47044 (42)	-	89382 (970)	148749 (154)	402094 (387)
4	Low	9408 (10)	31696 (37)	41632 (43)	2239 (2)	62345 (71)	88850 (89)	236170 (240)
5	Very low	1265 (1)	1363 (2)	14271 (15)	-	73424 (77)	54628 (71)	144951 (163)
<b>Total</b>		55885 (47)	374891 (354)	193066 (195)	2239 (2)	402684 (413)	404928 (439)	1433693 (1370)

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

### 12. Area under different Land use classes

S. No.	Land use category	Area (ha.)	Percentage
1	Area under rain fed cultivation	536798	37.4
2	Area under irrigated cultivation	145948	10.2
3	Area under forest	653451	45.6
4	Area under plantation	16267	1.1
5	Thin grass cover with fodder crops	2567	0.2
6	Fallow lands	16232	1.1
7	Grass cover with thorny bushes	717	0.1
8	Miscellaneous	61713	4.3
<b>Total</b>		1433693	100.00

\*\* Area of Mysore district includes that of Chamrajnagar district and for Bangalore includes for Bangalore urban & Bangalore rural.

13. Area in erosion classes vs. Soil Textural Groupings

S. No.	Textural Classes	Slight	Slight to Moderate	Moderate	Moderate to severe	Severe	Total	Percent
1	Coarse (Sand, loamy sand)	-	5193	-	-	-	5193	0.4
2	Mod. Coarse( Sandy loam, fine sandy loam)	-	-	29310	8164	1234	38708	2.7
3	Mod. coarse gravelly( Sandy loam, fine sandy loam)	-	5511	-	164	493	6168	0.4
4	Mod. fine gravelly (Clay loam, sandy clay loam, silty clay loam)	35240	98635	250248	20722	2488	407333	28.4
5	Mod. fine to coarse( Clay loam, sandy clay loam, silty clay loam,	-	-	1758	-	-	1758	0.1
6	Mod. fine	280671	7766	371160	15912	6821	682330	47.6
7	Mod. fine to mod. coarse	-	-	20851	-	-	20851	1.5
8	Moderately fine to fine	171752	-	4454	2228	-	178434	12.4
9	Fine	309	30896				31205	2.2
	Misc.						61713	4.3
	Total	487972	148001	677781	47190	11036	1433693	
	Percent	34.0	10.3	47.3	3.3	0.8		100.0

14. Distribution of area in different soil depth classes vis a vis soil colour

S. No.	Soil Colour	Depth class					Total
		Very shallow to shallow	Shallow to Moderately deep	Moderately deep to deep	Deep to very deep	Very deep	
1.	Red	161670	514990	103546	489623	5193	1275022
2.	Black	-	2393	-	18411	-	20804
3.	Mixed	-	-	-	-	76154	76154
	Misc.	-	-	-	-	-	61713
	Total	161670	517383	103546	508034	81347	1433693

15. Watershed wise Priority category wise distribution of area and number of microwatersheds

Priority category – watersheds	Very High	High	Medium	Low	Very Low	Total
4B3A1	84168 (70)	43665 (29)	40488 (34)	30630 (28)	8818 (9)	207769 (170)
4B3A2	2153 (3)	9629 (27)	15035 (19)	18379 (25)	4095 (6)	49291 (64)
4B3A3	17190 (16)	31224 (27)	18123 (18)	9833 (10)	5635 (7)	82005 (78)
4B3A4	18718 (18)	15871 (15)	15091 (14)	9335 (8)	5299 (4)	64314 (59)
4B3A5	6054 (7)	57151 (49)	45869 (45)	30067 (31)	49088 (46)	188229 (178)
4B3A6	0 (0)	4954 (5)	6308 (139)	7972 (10)	14760 (18)	33994 (42)
<b>Subtotal</b>	128283 (114)	162494 (136)	140914 (139)	106216 (112)	87695 (90)	625602 (591)
4B3B1	20363 (19)	36774 (31)	31116 (27)	12907 (12)	1402 (1)	102562 (90)
4B3B2	14894 (15)	17754 (17)	7820 (8)	1464 (2)	0 (0)	41932 (42)
4B3B3	50333 (43)	35021 (28)	51742 (43)	17495 (16)	0 (0)	154591 (130)
4B3B4	42882 (37)	25904 (20)	15536 (15)	9077 (9)	1226 (1)	94625 (82)
4B3B5	10747 (11)	67683 (68)	48827 (50)	5699 (7)	383 (1)	133339 (137)
4B3B6	2491 (4)	9354 (12)	16716 (21)	16949 (20)	40159 (55)	85669 (112)
4B3B7	749 (1)	11546 (11)	16373 (14)	16560 (16)	6050 (6)	51278 (48)
4B3B8	0 (0)	13206 (13)	73050 (70)	49803 (46)	8036 (9)	144095 (138)
<b>Subtotal</b>	142459 (130)	217242 (336)	261180 (248)	129954 (128)	57256 (73)	808091 (779)
<b>Grand Total</b>	270742 (244)	379736 (336)	402094 (387)	236170 (240)	144951 (163)	1433693 (1370)

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

16. Area distribution under different Land conservation/management categories

Sl. No.	Soil management classes	Area in Hectares	Percent
1	Well Conserved/managed/bunded	90003	6.28
2	Well bunded and terraced	104310	7.28
3	Unbunded/unmanaged/unconserved/not conserved/poorly bunded/poorly managed	930235	64.89
4	Poorly conserved poorly managed	156002	10.88
5	Poorly bunded moderately managed	22403	1.56
6	Poorly bunded poorly terraced	64260	4.48
7	Terraced but poorly bunded	4767	0.33
	Misc. lands	61713	4.3
	<b>Total</b>	1433693	100.0

17. Watershed wise and district wise distribution of area and number of microwatersheds (Figures in ha)

S.NO	W.S.C	TAMILNADU				KARNATAKA		TOTAL
		SALEM	D.PURI	ERODE	COIMBATORE	MYSORE*	BANGALORE*	
1	4B3A1	27613 (20)	0 (0)	135114 (128)	0 (0)	45042 (42)	0 (0)	207769 (170)
2	4B3A2	0 (0)	0 (0)	0 (0)	0 (0)	49291 (64)	0 (0)	49291 (64)
3	4B3A3	0 (0)	0 (0)	1464 (3)	2239 (2)	78302 (76)	0 (0)	82005 (78)
4	4B3A4	0 (0)	0 (0)	0 (0)	0 (0)	64314 (59)	0 (0)	64314 (59)
5	4B3A5	0 (0)	0 (0)	56488 (64)	0 (0)	131741 (130)	0 (0)	188229 (178)
6	4B3A6	0 (0)	0 (0)	0 (0)	0 (0)	33994 (42)	0 (0)	33994 (42)
<b>Subtotal</b>		27613 (20)	0 (0)	193066 (195)	2239 (2)	402684 (413)	0 (0)	625602 (591)
1	4B3B1	28272 (27)	74290 (74)	0 (0)	0 (0)	0 (0)	0 (0)	102562 (90)
2	4B3B2	0 (0)	41932 (42)	0 (0)	0 (0)	0 (0)	0 (0)	41932 (42)
3	4B3B3	0 (0)	154591 (130)	0 (0)	0 (0)	0 (0)	0 (0)	154591 (130)
4	4B3B4	0 (0)	91598 (81)	0 (0)	0 (0)	0 (0)	3027 (6)	94625 (82)
5	4B3B5	0 (0)	12480 (27)	0 (0)	0 (0)	0 (0)	120859 (135)	133339 (137)
6	4B3B6	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	85669 (112)	85669 (112)
7	4B3B7	0 (48)	0 (0)	0 (0)	0 (0)	0 (0)	51278 (48)	51278 (48)
8	4B3B8	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	144095 (138)	144095 (138)
<b>Subtotal</b>		28272 (27)	374891 (354)	0 (0)	0 (0)	0 (0)	404928 (439)	808091 (779)
<b>GRAND TOTAL</b>		55885 (47)	374891 (354)	193066 (195)	2239 (2)	402684 (413)	404928 (439)	1433693 (1370)

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

18. Area Under Different Depth and Erosion Classes

S. No	Depth category	Erosion Classes					Total area in ha.	Percent
		Slight	Slight to moderate	Moderate	Moderate to severe	Severe		
1	Very Shallow to Shallow	-	-	147762	12181	1727	161670	11.3
2	Shallow to moderately deep	139885	51832	291781	28487	5398	517383	43.1
3	Moderately deep to Deep	102163	958	425	-	-	103546	0.3
4	Deep to very deep	169770	90018	237813	6522	3911	508034	34.4
5	Very Deep	76154	5193	-	-	-	81347	5.7
	<b>Subtotal</b>	487734	148001	577781	47190	11036	1371980	95.7
	Misc.						61713	4.3
	<b>Total</b>	487734	148001	577781	47190	11036	1433693	100.0
	<b>Percentage</b>	34.0	10.3	47.3	3.3	0.8	100.0	

\* Area of Mysore district includes that of Chamrajnagar district and for Bangalore includes for Bangalore urban & Bangalore rural.

### 19. Distribution of Area under different physiographic positions

Sl.No.	Physiographic positions	Area in Hectares	Percent
1	Rivers and stream banks	10547	0.7
2	Hill side slopes and lower hill slopes	520780	36.3
3	Hill crest and side slopes	29310	2.0
4	Subdued hills	747	0.1
5	Valley plains	76463	5.3
6	Lower Hill valley	760	0.1
7	Upper Hill valley	1201	0.1
8	Pediaplains	583164	40.7
9	Pediments	149008	10.4
	Misc. lands	61713	4.3
	Total	1433693	100.0

### 20. Distribution of Area under different Slope Classes

S.No.	Slope Classes	Area in Hectares	Percent
1	Nearly level to very gently sloping (0-3%)	231366	16.1
2	Very gently sloping (3-5%)	339457	23.7
3	Very gentle to moderately sloping (1-10) %	249684	17.4
4	Moderately to strong sloping (5-15%)	1383	0.1
5	Strongly sloping to moderately steep (10-25%)	161344	11.3
6	Steep to very steep (25 - 50%)	388746	27.1
8	Misc. lands	61713	4.3
	Total	1433693	100.0

### 21. Distribution of area under different erosion classes and soil colour

S.No.	Soil Colour	Slight	Slight to Moderate	Moderate	Moderate to severe	Severe	Total	Percent
1	Red Soils	403728	139375	677227	44962	9730	1275022	88.9
2	Black Soils	8090	8626	554	2228	1306	20804	1.5
3	Mixed Soils	76154	-	-	-	-	76154	5.3
	Misc.	-	-	-	-	-	61713	4.3
	Total	487972	148001	677781	47190	11036	1433693	100.0

### 22. Salient features:

1. Out of total surveyed area of 1433693 hectare, an area of 270742 hectares (18.88%) falls under very high priority, whereas 379736 hectare (26.48%) falls under high priority category.
2. Even though 45.3 % of the surveyed area falls under priority categories severely eroded area is only 4%, maximum of the area is under slight to moderate erosion emphasizing that the erosion control measures should be initiated before it is too late and the marginally affected area becomes severely eroded area and under this type of categories nearly 44.4% of the surveyed area comes.
3. Relatively more area under priority category and less under severe erosion is because of the 45.6% of the surveyed area being under forest cover.
4. Nearly 47.6% of the surveyed area is under cultivation irrigated/rainfed cultivation and such area is of active consideration as far as the erosion control measures are concerned.
5. In 4B3A subcatchment maximum area under very high priority falls under 4B3A1 followed by 4B3A4, 4B3A3, 4B3A5 and 4B3A2. Whereas, in 4B3B the maximum area falls under 4B3B3 followed by 4B3B4, 4B3B1, 4B3B2, 4B3B5, 4B3B6 and 4B3B7.

23.Extent of area (in ha )under different erosion intensity mapping units

SL.NO.	M.UNITS	AREA	%	SL.NO.	M.UNITS	AREA	%
1	A1	3601	0.25	46	G12.9	22270	1.55
2	A3	5193	0.36	47	G13	4350	0.30
3	A4	1753	0.12	48	G13.1	832	0.06
4	G1	102163	7.13	49	G14	107101	7.47
5	G1.1	182	0.01	50	G15	7984	0.56
6	G2	43269	3.02	51	G16	5511	0.38
7	G2.1	73435	5.12	52	G17	3311	0.23
8	G2.2	129735	9.05	53	G18	52181	3.64
9	G2.4	194	0.01	54	G19	27256	1.90
10	G2.5	363	0.03	55	G20	181	0.01
11	G2.6	961	0.07	56	G22	7919	0.55
12	G2.7	1201	0.08	57	G23	554	0.04
13	G2.8	806	0.06	58	G24	707	0.05
14	G3	2651	0.18	59	G26	76154	5.31
15	G4	29150	2.03	60	G26.1	38456	2.68
16	G4.1	160	0.01	61	G26.2	1186	0.08
17	G4.2	493	0.03	62	G26.3	5030	0.35
18	G5	109844	7.66	63	G26.4	309	0.02
19	G5.1	8164	0.57	64	G26.7	238	0.02
20	G5.2	1234	0.09	65	G27	22057	1.54
21	G5.3	7313	0.51	66	G29	9460	0.66
22	G5.4	3355	0.23	67	G29.1	3297	0.23
23	G5.5	1954	0.14	68	G29.2	241	0.02
24	G5.6	133	0.01	69	G29.3	2324	0.16
25	G5.8	164	0.01	70	G30	760	0.05
26	G6	9233	0.64	71	G31	958	0.07
27	G6.1	117	0.01	72	G31.1	243	0.02
28	G8	20851	1.45	73	G32	3983	0.28
29	G8.1	569	0.04	74	G33	1415	0.10
30	G8.3	16063	1.12	75	G33.1	3853	0.27
31	G9	82017	5.72	76	G33.2	9779	0.68
32	G10	46140	3.22	77	G34.1	547	0.04
33	G10.1	5996	0.42	78	G35	313	0.02
34	G10.3	171	0.01	79	G35.1	3809	0.27
35	G10.4	425	0.03	80	G36	117	0.01
36	G10.5	493	0.03	81	G37	58549	4.08
37	G10.6	2074	0.14	82	G38	389	0.03
38	G10.7	747	0.05	83	G38.1	1839	0.13
39	G11	934	0.07	84	G39	1306	0.09
40	G12	146542	10.22	SUBTOTAL	1371980	95.70	
41	G12.1	9432	0.66	1	HABIT	16735	1.17
42	G12.3	2488	0.17	2	RIVER/ST	11376	0.79
43	G12.5	1593	0.11	3	TANK	26121	1.82
44	G12.6	11751	0.82	4	ROC	7328	0.51
45	G12.8	104	0.01	5	OTHERS	153	0.01
				MISC.TOTAL	61713	4.30	
				GRAND TOTAL	1433693	100.00	