

ABSTRACT

- 1. Surveyed Area** : Inventory of Rapid Reconnaissance Soil Survey for Prioritization of Microwatersheds of 5B2E & 5B2F Subcatchment of Savatri to Tapi (5B2) Catchment, Districts- Dang, Navsari, Surat, Tapi and Valsad of Gujarat State and Districts-Dhule and Nasik of Maharashtra State
- 2. Location** : 20° 31' 08" N 21° 15' 35" N North Latitudes and 72° 42' 36" E to 73° 56' 39 "E East Longitudes
- 3. Total Area Surveyed** : 690301 ha
- 4. Kind of Survey** : Rapid Reconnaissance Survey
- 5. Period of Survey** : 2006 to 2007
- 6. Agro climatic zone** : Western Plateau & Hill Region - IX
- 7. Base Maps** : Survey of India Toposheets on 1:50,000 scale
- 8. Hydrological division** : 5B2E4a1
- 5 Region
5B Basin
5B2 Catchment
5B2E & 5B2F Subcatchments
5B2E4 Watersheds
5B2E4a, b ... Subwatersheds
5B2E4a1, 2 ... Microwatersheds

9. Areal Extent of Different Runoff Potential Mapping Units (RPMUs)

Sl. No.	RPMU	Runoff Potential Value	Area in ha.	Percentage
1	AL01	57	75823	10.98%
2	AL02	59	86115	12.47%
3	AL03	59	2584	0.37%
4	AL04	66	15475	2.24%
5	AL05	73	40850	5.92%
6	AL06	60	34840	5.05%
7	AL07	62	8364	1.21%
8	AL08	57	7090	1.03%
9	AL09	63	8760	1.27%
10	AL10	59	20215	2.93%
11	AL11	65	7800	1.13%
12	BA01	70	9566	1.39%
13	BA02	71	6491	0.94%
14	BA03	79	99130	14.36%
15	BA04	84	14350	2.08%
16	BA05	78	28867	4.18%
17	BA06	75	10220	1.48%
18	BA07	73	3932	0.57%
19	BA08	62	15771	2.28%
20	BA09	68	16796	2.43%
21	BA10	60	41032	5.94%
22	BA11	59	15908	2.30%
23	BA12	67	25028	3.63%
24	BA13	65	8659	1.25%
25	BA14	66	49	0.01%
26	BA15	72	8461	1.23%
27	BA16	63	7407	1.07%
28	BA17	61	2895	0.42%
29	BA18	66	4215	0.61%
30	BA19	71	518	0.08%
31	HB	Habitation	18652	2.70%
32	ML	Marshy Land	27951	4.05%
33	River	River	14949	2.17%
34	Tank	Tank	1538	0.22%
Grand Total			690301	100.00

10. Soil Erosion Hazards

EROSION	Total Area (ha)	Percentage	Gujarat					Maharashtra	
			DANGS	NAVSARI	SURAT	TAPI	VALSAD	DHULE	NASHIK
Slight erosion	142025	20.59	912	56851	63504	14156	6057	-	545
Slight to Moderate erosion	33101	4.8	6037	8699	3941	14136	79	-	209
Moderate erosion	127147	18.43	105	46541	32813	39152	7471	945	120
Moderate to Severe erosion	102553	14.87	33920	31336	6424	27941	2077	2	853
Severe erosion	181535	26.32	129543	14188	141	29025	-	853	7785
Severe to Very severe erosion	40850	5.92	419	15823	16094	6176	2338	-	-
Misc.	63090	9.15	3248	32872	13038	10776	3156	-	-

11. District wise distribution of Microwatersheds under different priority categories

Priority Category	No. of MWS	Area in (ha)	Percentage	Gujarat					Maharashtra	
				DANGS	NAVSARI	SURAT	TAPI	VALSAD	DHULE	NASHIK
Very High	317	205515	29.77	157777	14195	18	24043	-	752	8730
High	120	73343	10.62	13613	29867	3781	25300	-	-	782
Medium	361	237294	34.38	2787	98306	52069	66244	16840	1048	-
Low	255	170988	24.77	7	62401	78467	25775	4338	-	-
Very Low	7	3161	0.46	-	1541	1620	-	-	-	-
Grand Total		690301	100.00	174184	206310	135955	141362	21178	1800	9512

12. Distribution of Area under Different Priority Categories

Sl.No.	Priority Category	No. of Microwatersheds	Area in (ha)	Percentage
1	Very High (above 70)	265	205515	29.77
2	High (66-70)	96	73343	10.62
3	Medium (61-65)	300	237294	34.38
4	Low (56-60)	216	170988	24.77
5	Very Low (55 & below)	4	3161	0.46
Grand Total		881	690301	100.00

13. Salient Features:

- ⇒ Delineation and codification is done up to microwatersheds level in order to have viable size of the treatment area having distinct spatial extent and unique national code.
- ⇒ Out of the total 690301 ha area 278858 (40.39%) ha falls under very high and high category.
- ⇒ 265 microwatersheds falls under very high priority with 205515 ha (29.77%) and 96 microwatersheds under high priority category of 73343 ha (10.62%), requires immediate attention for proper soil and water conservation.
- ⇒ About 222385 ha (32.24 %) is prone for severe to very severe erosion and 229700 ha (33.3%) is prone for moderate to severe erosion hazards.
- ⇒ Alluvial plain occupies nearly 169028 ha (26.95%) and 152567 (24.32%) and hills side slopes of the total surveyed area.
- ⇒ Unmanaged to poorly managed area covers 54.26 % followed by well managed area 18.36 %.

HOW TO USE SOIL SURVEY REPORT

The report embodies the results of Rapid Reconnaissance Survey conducted for identification and delineation of priority microwatersheds of Savatri to Tapi (5B2) of Districts- Dang, Navsari, Surat, Tapi and Valsad of Gujarat State and Dhule and Nasik of Maharashtra State covering an area of 690301 ha spread over 881 microwatersheds. The priorities are fixed on the basis of Runoff Potential Index (RPI). Higher the values of Runoff Potential Index suggest higher priority and vice versa. The concerned maps on the scale of 1:50,000 are appended with the report. It also furnishes information on general characteristics of the area such as, location and extent, physiography, relief, drainage, geology, climate, present landuse, natural vegetation, water supply and soils of the area.

In the map, each microwatershed is marked by a symbol like '5B2E4a1' etc. where '5' stands for water resource region, '5B' indicates basin, '5B2' for catchment, '5B2E' for subcatchment, '5B2E4' for watershed, '5B2E4a' for subwatershed and '5B2E4a1' for microwatershed. Within each microwatershed, the Runoff Potential Mapping Units (RPMUs) are demarcated according and symbolized by capital English alphabets, based on geological origin of the land 'AL' stands for Alluvium and their further subdivisions are made on the basis of land and soil characteristics. Each unit connotes a set of physiography, slope, landuse, soil characteristics such as soil depth, colour, texture, severity of erosion and management practices. Mapping units are assigned with respective runoff potential weightage value the priority categorisation of microwatersheds have been done hazard as very high, high, medium, low and very low priority areas according to runoff potential index value.

The mapping legends furnished in the Table-4 and differentiating characteristics of each mapping units represented in Table-5.

The details of computation made for determining districtwise runoff potential index of various microwatersheds are furnished in Annexure-I and the information of relative priority of microwatersheds in descending order of grading are furnished in Annexure-II. The districtwise distribution of area under different priority categories depicted in Annexure-III.

Microwatersheds categorized under very high and high priority are selected for treatment of degraded lands under these microwatersheds under FPR scheme. Both treatable and non-treatable lands are occupied by each priority (very high and high category) microwatersheds. The ratio of treatable and non-treatable lands in a priority microwatershed varies with the kind, degree and extent of the degraded lands occupied by the some microwatersheds.

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