

ABSTRACT

- 1. Surveyed Area** : Inventory of Rapid Reconnaissance Survey for Prioritization of Microwatersheds in 5G2C and 5G2E of Sani-Minsar FPR Subcatchments of 5G2 Catchment , Districts- Jamnagar and Porbandar, Gujarat State
- 2. Location** : 26°59'20" to 30°14'05" North Latitude and 79°28'20" to 81°36'02" East Longitude
- 3. Total Area Surveyed** : 406549 ha
- 4. Kind of Survey** : Rapid Reconnaissance Survey
- 5. Period of Survey** : January, 2006 to July, 2007
- 6. Agro climatic zone** : Gujarat Plains & Hills Region (XIII)
- 7. Base Maps** : Survey of India Toposheets on 1:50,000 scale
- 8. Hydrological division** :
- | | |
|----------------|-----------------|
| 5 | Region |
| 5G | Basin |
| 5G2 | Catchment |
| 5G2C | Subcatchment |
| 5G2E | Subcatchment |
| 5G2C2-4 | Watersheds |
| 5G2E1-4 | Watersheds |
| 5G2C2a, b ... | Subwatersheds |
| 5G2E1a1, 2 ... | Microwatersheds |

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

Sl.No.	RPMU	Runoff Potential Value	Area in ha	Percentage
1	AL01	67	1007	0.25%
4	AL02	57	5544	1.36%
5	AL03	57	893	0.22%
7	BA01	75	4977	1.22%
8	BA02	76	13421	3.30%
9	BA03	66	57205	14.07%
10	BA04	61	93638	23.03%
11	BA05	72	16991	4.18%
12	BA06	75	23371	5.75%
13	BA07	84	241	0.06%
14	GR01	79	6775	1.67%
15	GR02	88	1830	0.45%
16	GR03	85	1272	0.31%
17	GR04	80	8141	2.00%
18	GR05	75	5036	1.24%
19	GR06	69	9965	2.45%
20	GR07	65	4253	1.05%
21	GR08	66	5837	1.44%
22	GR09	60	6708	1.65%
23	LS01	79	4138	1.02%
24	LS02	73	13484	3.32%
25	LS03	67	17564	4.32%
26	LS04	61	31051	7.64%
27	LS05	60	42452	10.44%
28	LS06	75	3168	0.78%
29	HB	Habitation	3362	0.83%
30	MUD	Mud	18087	4.45%
31	River	River	3060	0.75%
32	SALT PAN	Salt Pan	1263	0.31%
33	WB	Water body	1815	0.45%
Grand total			406549	100.00

10. Soil Erosion Hazards

Erosion	Total area (ha)	Percentage	Jamnagar	Porbandar
None to slight erosion	48889	12.03	7112	41777
Slight to Moderate erosion	100346	24.68	87779	12567
Moderate erosion	48615	11.96	10850	37765
Moderate to Severe erosion	90078	22.16	65450	24628
Severe erosion	91034	22.39	64297	26737
Misc	27587	6.79	6711	20876

11. District wise distribution of Microwatersheds under different priority categories

District	Priority Category	No. of Microwatersheds	Total Area ha	Percentage
JAMNAGAR	Very High	46	34400	8.46
	High	138	102362	25.18
	Medium	139	103150	25.37
	Low	5	2288	0.56
	Very Low	-	-	-
	Total		328	242200
PORBANDAR	Very High	30	19165	4.71
	High	67	44508	10.95
	Medium	124	85156	20.95
	Low	19	14841	3.65
	Very Low	1	1	0.17
	Total		241	163672

12. Distribution of Area under Different Priority Categories

Sl.No.	Priority Category	No. of Microwatersheds	Area in ha.	Percentage
1	Very High (above 70)	62	53567	13.18
2	High (66-70)	179	146899	36.13
3	Medium (61-65)	231	188281	46.31
4	Low (56-60)	20	17124	4.21
5	Very Low (55 & below)	1	678	0.17
Grand Total		493	406549	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 district spatial extent and unique national code.
- ⇒ Out of the total 493 microwatersheds surveyed 241 falls under very high and high category.
- ⇒ 62 microwatersheds falls under very high priority with 53567 ha (13.18%) and 179 microwatersheds with 146899 ha (36.13%) comes under high priority categories which needs immediate attention for proper soil and water conservation.
- ⇒ About 91034 ha (22.39%) is prone for severe erosion and 90078 ha (22.16%) is prone for moderate to severe erosion hazards.

- ⇒ Hill side slope occupies nearly 42375 ha (10.42%) and 167593 ha (41.22%) is mapped as gullied land of the total surveyed area.
- ⇒ Moderately deep to deep soils covers maximum an area of 194008 ha and fallows very shallow to shallow 88513 ha respectively and together constitutes 79.91% of the total surveyed area.

HOW TO USE SOIL SURVEY REPORT

The report embodies the results of Rapid Reconnaissance Survey conducted for identification and delineation of priority microwatersheds of 5G2C2 to C4 and 5G2E1 to E4 of Sani-Minsar FPR Subcatchments falling in districts of Jamnagar and Porbandar, Gujarat State covering an area of 406549 ha spread over 493 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 5G2C2a1 etc. where '5' stands for water resource region, '5G' indicates basin, '5G2' for catchment, '5G2C' for subcatchment, '5G2C2' for watershed, '5G2C2a' for subwatershed and '5G2C2a1' 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, 'GR' stands for Granite etc. 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.

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.

For further clarification, information or comments contact may be made to:

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