

Inventory of Rapid Reconnaissance Soil Survey in various Subcatchments of Banas River FPR Catchment (2D4), Districts: Ajmer, Bhilwara, Chittaurgarh, Rajsamand, Tonk and Udaipur of Rajasthan and District: Neemuch, Madhya Pradesh

ABSTRACT

- 1. Surveyed Area** : 2D4A(Part), 2D4D(Part), 2D4E, 2D4F, 2D4G, 2D4H & 2D4I Subcatchments of Banas River FPR Catchment; Ajmer, Bhilwara, Chittaurgarh, Rajsamand, Tonk and Udaipur districts of Rajasthan; Neemuch district of Madhya Pradesh
- 2. Location** : 24°17'58" to 26°30'05" North Latitude and 73°23'11" to 75°29'21" East Longitude
- 3. Total Area Surveyed** : 27,64,028 ha
- 4. Kind of Survey** : Rapid Reconnaissance Survey
- 5. Period of Survey** : Year 1999 to 2000
- 6. Agro climatic zone** : The Western Himalayan Region (Zone No. I)
- 7. Base Maps** : Survey of India Toposheets on 1:50,000 scale
- 8. Hydrological Divisions :**
 - (a) Water Resource Region** 2 (Ganga Water Resource Region)
 - (b) Basin** 2D Chambal Basin
 - (c) Catchment** 2D4 Banas (FPR)
 - (d) Subcatchments**
 - 2D4A (Part) Lower Banas right bank
 - 2D4D (Part) Dain
 - 2D4E Khari, Mansi
 - 2D4F Kothari
 - 2D4G Main upper Banas
 - 2D4H Lower Berach
 - 2D4I Upper Berach

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

Sl. No.	RPMU	Runoff Potential Index	Area (ha.)	Percentage
1.	AA01	0.55	7096	0.26
2.	AA02	0.61	3280	0.12
3.	AE01	0.58	177	0.01
4.	AE02	0.67	1047	0.04
5.	AE03	0.56	1079	0.04
6.	AL01	0.69	3046	0.11
7.	AL02	0.68	3383	0.12
8.	AL03	0.69	3030	0.11
9.	AL04	0.65	2506	0.09
10.	AL05	0.54	198	0.01
11.	AL06	0.63	3483	0.13
12.	AL07	0.60	16535	0.60
13.	AL08	0.57	10776	0.39
14.	AL09	0.61	2403	0.09
15.	AL10	0.58	89914	3.25
16.	BA01	0.73	2080	0.08
17.	BA02	0.73	235	0.01
18.	BA03	0.63	313	0.01
19.	BA04	0.69	2205	0.08
20.	BA05	0.66	478	0.02
21.	BA06	0.62	7206	0.26
22.	CG01	0.69	281	0.01
23.	CG02	0.67	869	0.03
24.	CG03	0.58	3493	0.13
25.	CG04	0.60	792	0.03
26.	CG05	0.95	37311	1.35
27.	CG06	0.68	18072	0.65
28.	CG07	0.90	3132	0.11
29.	CG08	0.92	19842	0.72
30.	CG09	0.79	23621	0.85
31.	CG10	0.73	26980	0.98

32.	CG11	0.79	610	0.02
33.	CG12	0.83	38995	1.41
34.	CG13	0.81	12676	0.46
35.	CG14	0.65	6422	0.23
36.	CG15	0.61	6822	0.25
37.	CG16	0.66	7368	0.27
38.	CG17	0.65	824	0.03
39.	CG18	0.61	5023	0.18
40.	CG19	0.67	2708	0.10
41.	CG20	0.74	30851	1.12
42.	CG21	0.73	21796	0.79
43.	CG22	0.77	16098	0.58
44.	CG23	0.58	16560	0.60
45.	CG24	0.64	3100	0.11
46.	CG25	0.58	52803	1.91
47.	CG26	0.64	12055	0.44
48.	CG27	0.63	20285	0.73
49.	CG28	0.71	4867	0.18
50.	CG29	0.62	100094	3.62
51.	CG30	0.60	303	0.01
52.	CG31	0.67	28484	1.03
53.	CG32	0.67	14960	0.54
54.	CG33	0.63	3566	0.13
55.	CG34	0.64	678	0.02
56.	CG35	0.66	6551	0.24
57.	CG36	0.64	2184	0.08
58.	CG37	0.57	95664	3.46
59.	CG38	0.61	23804	0.86
60.	CG39	0.63	35087	1.27
61.	GG01	0.80	3388	0.12
62.	GG02	0.93	61841	2.24
63.	GG03	0.68	32743	1.18
64.	GG04	0.75	35919	1.30
65.	GG05	0.73	97892	3.54

66.	GG06	0.58	4061	0.15
67.	GG07	0.66	162598	5.88
68.	GG08	0.62	44844	1.62
69.	GG09	0.69	43035	1.56
70.	GG10	0.61	304689	11.02
71.	GG11	0.57	82344	2.98
72.	GR01	0.75	4664	0.17
73.	GR02	0.70	2752	0.10
74.	GR03	0.57	1908	0.07
75.	GR04	0.66	7017	0.25
76.	GR05	0.61	10906	0.39
77.	LA01	0.74	798	0.03
78.	LA02	0.64	663	0.02
79.	SG01	0.78	1652	0.06
80.	SG02	0.83	9398	0.34
81.	SG03	0.71	727	0.03
82.	SG04	0.77	10200	0.37
83.	SG05	0.71	6757	0.24
84.	SG06	0.75	10193	0.37
85.	SG07	0.73	21745	0.79
86.	SG08	0.58	2552	0.09
87.	SG09	0.65	9511	0.34
88.	SG10	0.66	84295	3.05
89.	SG11	0.67	77509	2.80
90.	SG12	0.57	5681	0.21
91.	SG13	0.65	109546	3.96
92.	SG14	0.64	24066	0.87
93.	SG15	0.59	227556	8.23
94.	SG16	0.58	103766	3.75
95.	SG17	0.73	2497	0.09
96.	SG18	0.67	39734	1.44
97.	SG19	0.59	76793	2.78
98.	SS01	0.62	2350	0.09
99.	SS02	0.63	1968	0.07

100.	SS03	0.81	6503	0.24
101.	SS04	0.89	4033	0.15
102.	SS05	0.70	6866	0.25
103.	SS06	0.75	5098	0.18
104.	SS07	0.60	1625	0.06
105.	SS08	0.68	7623	0.28
106.	SS09	0.58	1951	0.07
107.	SS10	0.73	10627	0.38
108.	SS11	0.70	111	0.00
109.	SS12	0.66	218	0.01
110.	SS13	0.59	6451	0.23
111.	SS14	0.59	14421	0.52
112.	SS15	0.61	421	0.02
113.	SS16	0.67	10372	0.38
114.	M1(<i>Waterbody</i>)	0.00	18025	0.65
115.	M2(<i>Habitation</i>)	0.00	18382	0.67
116.	M3(<i>Dry Tank</i>)	0.00	20630	0.75
117.	ROC(<i>Rock-out-crop</i>)	0.00	1179	0.04
118.	RI(<i>River</i>)	0.00	32833	1.19
Grand Total			2764028	100.00

10. Soil Erosion Hazards:

Erosion Class	Rajasthan						M.P.	Total Area (ha.)	Percentage
	Ajmer	Bhilwara	Chittaurgarh	Rajsamand	Tonk	Udaipur	Neemuch		
Non to slight erosion	19598	43813	10175	3059	19566	22	3329	99562	3.6
Slight to moderate erosion	46154	263895	148327	72615	1796	80029	8112	620928	22.46
Moderate erosion	208709	212409	164843	77413	10954	32556	18981	725865	26.26
Moderate to severe erosion	120198	239116	138897	58408	25555	46414	15322	643910	23.3
Severe erosion	41858	135401	79565	169114	3134	54958	10760	494790	17.9
Severe to very severe erosion	1221	5872	2330	27628	-	8518	-	45569	1.65
Very severe erosion	-	3156	4077	15432	-	19513	-	42178	1.53
Moderate wind erosion	-	177	-	-	-	-	-	177	0.01
Miscellaneous	13009	34149	16291	12219	3912	10863	606	91049	3.29

11. Distribution of Area under Different Priority Categories:

Sl.No.	Priority Category	No. of Microwatersheds	Area in ha.	Percentage
1.	Very High (above 70)	587	443782	16.06
2.	High (66-70)	701	537050	19.43
3.	Medium (61-65)	1742	1368640	49.52
4.	Low (56-60)	539	413944	14.98
5.	Very Low (55 & below)	1	612	0.02
Grand Total		3570	2764028	100.00

12. Salient Features:

- ⇒ Delineation and codification is done up to microwatersheds level in order to have viable size of the treatment area.
- ⇒ Out of the total 3570 microwatersheds, 1288 microwatersheds fall under very high and high category.
- ⇒ 587 microwatersheds falls under very high priority with 4,43,782 ha.(16.06%) and 701 microwatersheds with 5,37,050 (19.43%) comes under high priority categories which needs immediate attention for proper soil and water conservation.
- ⇒ About 5,82,537 ha (21.08%) is prone for severe to very severe erosion and 13,69,775 ha (49.56%) is prone for moderate to severe erosion hazards.
- ⇒ Hill side slope occupies nearly 2,78,269 ha (10.07%) and 1,66,458 ha (6.02%) is mapped as subdued hills/hummocks of the total surveyed area.
- ⇒ Moderately deep to deep soils covers maximum an area of 12,17,686 ha. and fallows Deep to very deep 4,39,058 ha. respectively and together constitutes 59.93% of the total surveyed area.
- ⇒ About 12,21,274 ha (44.18%) area are under unmanaged to poorly managed susceptible to moderate to severe water erosion that needs appropriate soil and water conservation measures.