

Report on Prioritization of Micro-watersheds in 2B4A, 2B4B, 2B4C, 2B4D, 2B4E (Part) Sub-Catchment of Ramganga (Phase-II) FPR Catchment below Kalagarh Dam and 2B4F (Garra Decha) Sub-Catchment of 2B4 Non-RVP/FPR catchment spread over Almora, Nainital and Pauri Garhwal Districts of Uttranchal State and Badaun, Barreilly, Bijnore, Hardoi, Lakhimpur Kheri, Moradabad, Pilibhit, and Rampur Districts of Uttar Pradesh.

ABSTRACT

1.	Survey Area	:	2B4A, 2B4B, 2B4C, 2B4D, 2B4E (Part) and 2B4F Sub-Catchment of 2B4 (Ramganga Phase II FPR Catchment below Kalagarh Dam and Garra, Decha) Catchment Almora, Nainital and Pauri Garhwal Districts of Uttranchal State and Badaun, Barreilly, Bijnore, Hardoi, Lakhimpur Kheri, Moradabad, Pilibhit, and Rampur Districts of Uttar Pradesh.
2.	Location	:	Latitude - 27° 04' - 29° 55' N Longitude - 78° 16' - 80° 07' E
3.	Total Area	:	20,89,892 ha
	Ramganga(2B4A - D) 2B4E(P)		2103157 ha
	Garra Decha (2B4F)		696735 ha.
4.	Period of Survey	:	November, 2003 to March, 2005
5.	Type of Survey	:	Rapid Reconnaissance Survey for Priority Delineation
6.	Base Material	:	Survey of India Topographical Maps on 1: 50,000 Scale
7.	Aerial extent of different Run-off Potential Mapping Units		

S. No.	Mapping Unit	(Area in ha.)			Percentage
		Ramganga	Garra Decha	Total	
1	A01	28645	3775	32420	1.12
2	A02	169704	21775	191479	6.63
3	A03	145452	45018	190470	6.59
4	A04	15090	3320	18410	0.64
5	A05	4675	1230	5905	0.20
6	A06	8540	1610	10150	0.35
7	A07	7950	-	7950	0.28
8	A08	775	-	775	0.03
9	A09	1350	-	1350	0.05
10	A10	814441	219870	1034311	35.79
11	A11	372940	224329	597269	20.67
12	A12	3297	1260	4557	0.16
13	A13	19695	68055	87750	3.04

S. No.	Mapping Unit	(Area in ha.)			Percentage
		Ranganga	Garra Decha	Total	
46	S02	4164	1560	5724	0.20
47	S03	20710	3765	24475	0.85
48	S04	73278	30900	104178	3.60
49	S05	6650	2150	8800	0.30
50	S06	5538	-	5538	0.19
51	S07	1140	1465	2605	0.09
52	S08	1230	-	1230	0.04
53	S09	4285	1070	5355	0.19
54	S10	65	-	65	0.00
55	S11	185	-	185	0.01
56	BK	635	22	657	0.02
57	H	23792	7735	31527	1.09
58	W1	8216	6777	14993	0.52
59	W2	40566	10070	50636	1.75
60	W3	-	125	125	0.00
	Total	2193157	696735	2889892	100.00

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S. Hydrological division of the survey area

a) Water resources region	:	2 Ganges Region
b) Basin	:	2B Upper Ganges above confluence with Ghaghar river
c) Catchment	:	2B4 (Ramganga Phase II) Catchment
d) Sub-catchment	:	I. 2B4A (Left Bank Ramganga Sindh, Bhogal, Absara, Sukhi and Deoronica) II. 2B4B (Right Bank Ramganga and Aril) III. 2B4C (Kichha - Nainital Rampur area) IV. 2B4D (From confluence with Goh confluence with Khoh) V. 2B4E partly (Khoh - Uni below Kalgarh Dam) VI. 2B4F (Garra - Decha Sabheta)
e) Watersheds	:	2B4A1, 2B4A2, 2B4A3, 2B4A4 and 2B4A5 = (5) 2B4B1, 2B4B2, 2B4B3 and 2B4B4 = (4) 2B4C1, 2B4C2, 2B4C3, 2B4C4, 2B4C5, 2B4C6, 2B4C7 = (7) 2B4D1, 2B4D2, 2B4D3, 2B4D4, 2B4D5, 2B4D6, 2B4D7 and 2B4D8 = (8) 2B4E1 and 2B4E2 = (2) 2B4F1, 2B4F2, 2B4F3, 2B4F4, 2B4F5, 2B4F6, 2B4F7 & 2B4F8 = (8)

f) Sub-watershed	557
g) Micro-watersheds	4473

9. Distribution of watershedwise area of Ramganga Catchment

S. No.	Watershed Code	No. of Microwatershed	Area	Percentage
1	2B4A1	147	90610	3.14
2	2B4A2	108	86643	3.00
3	2B4A3	180	147874	5.12
4	2B4A4	106	81566	2.82
5	2B4A5	125	78950	2.73
6	2B4B1	75	41025	1.42
7	2B4B2	103	70205	2.43
8	2B4B3	31	23065	0.80
9	2B4B4	179	134359	4.65
10	2B4C1	150	83685	2.90
11	2B4C2	28	14150	0.49
12	2B4C3	109	65175	2.26
13	2B4C4	176	115825	4.01
14	2B4C5	108	53815	1.86
15	2B4C6	181	112875	3.91
16	2B4C7	101	57000	1.97
17	2B4D1	83	50025	1.73
18	2B4D2	128	77710	2.69
19	2B4D3	161	90545	3.13
20	2B4D4	183	148063	5.12
21	2B4D5	163	81362	2.82
22	2B4D6	172	90425	3.13
23	2B4D7	175	130980	4.53
24	2B4D8	140	82595	2.86
25	2B4E1	127	70950	2.46
26	2B4E2	184	113680	3.93
27	2B4F1	53	32635	1.13
28	2B4F2	149	82725	2.86
29	2B4F3	31	15150	0.52
30	2B4F4	159	96980	3.36
31	2B4F5	151	118060	4.09
32	2B4F6	180	136955	4.74
33	2B4F7	150	101230	3.50
34	2B4F8	177	113000	3.91
Grand Total		4473	2889892	100.0

1.1 District-wise Distribution of Area under Different Priority Categories
(Ramganga(2B4A - D) 2B4E(P))

Sl. No.	Priority Category	State	District	Full		Part		Total
				Number of Microwatershed	Area	Number of Microwatershed	Area	
1.	Very High	Uttar Pradesh	Bijnor	27	15175	10	1650	16825
		Uttaranchal	Almora	219	110400	20	4425	114825
			Gharhwal	67	44030	9	4550	48580
			Nainital	229	142540	23	7610	150150
2.	High	Uttar Pradesh	Bijnor	18	10900	6	2200	13100
		Uttaranchal	Almora	1	300	-	-	300
			Gharhwal	5	2825	6	1900	4725
			Nainital	26	18700			18700
3.	Medium	Uttar Pradesh	Bareilly	292	199442	81	28661	228103
			Bijnor	212	115125	21	6885	122010
			Budaun	82	58183	27	10593	68776
			Farrukhabad	14	7125	20	5395	12520
			Hardoi	62	34520	17	3765	38285
			Moradabad	153	114025	35	14140	128165
			Pilibhit	18	12912	22	8903	21815
			Rampur	201	120985	59	20215	141200
			Shahjahanpur	63	45925	24	9535	55460
			Uttaranchal	Garhwal	5	3075	5	900
		Nainital		243	159670	47	15922	175592
		4.	Low	Uttar Pradesh	Bareilly	280	179960	36
Bijnor	203				114395	30	8875	123270
Budaun	15				12025	9	3448	15473
Farrukhabad	4				2460	7	2125	4585
Hardoi	42				27240	6	2750	29990
Moradabad	225				148570	51	17120	165690
Pilibhit	4				3450	3	1075	4525
Rampur	135				83040	49	19218	102258
Shahjahanpur	75				64357	17	6240	70597
Uttaranchal	Garhwa				-	-	4	250
	Nainital			165	112635	28	7125	119760
5.	Very Low			Uttar Pradesh	Bareilly	4	2475	-
		Rampur	1		675	-	-	675

**10.2 District-wise Distribution of Area under Different Priority Categories
(Garra Dacha 2B4F)**

Sl. No.	Priority Category	State	District	Full		Part		Total
				* Number of Micro-watershed	Area	* Number of Micro-watershed	Area	
1	Very High	Uttaranchal	Almora	5	3900	8	1310	5210
			Nainital	58	36350	8	3090	39440
2.	High	Uttaranchal	Almora	-	-	1	225	225
			Nainital	3	1650	1	350	2000
3.	Medium	Uttar Pradesh	Bareilly	-	-	10	2790	2790
			Hardoi	149	82258	10	2605	84863
			Pilibhit	155	105090	41	15105	120195
			Shahjahanpur	209	149720	36	12925	162645
		Uttaranchal	Nainital	52	30950	11	4200	35150
4.	Low	Uttar Pradesh	Bareilly	5	3515	7	3425	6940
			Hardoi	79	47302	5	2035	49337
			Pilibhit	131	93600	20	7390	100990
			Shahjahanpur	50	34910	8	1415	36325
		Uttaranchal	Nainital	65	44725	10	3550	48275
5.	Very Low	Uttaranchal	Nainital	1	2350	-	-	2350

* Number of Micro-watershed on the basis of state wise.

11. Salient Features:

- Nearly 14.3% of the total area of Ramganga (Phase II FPR Catchment below Kalagarh Dam and Garra Dechha) Catchment falls under very high and high priority category. Nearly 77.0% of the total area is under cultivation, 15.8 % is under forest, 3.8 % is under open scrub, and grasses and remaining 3.4 % is area is under miscellaneous land.
- About 79.3% of the total area is well managed, 72.0% is moderately to well managed, 7.0 % in under moderately managed, 1.7 % is poorly managed, where as 1.4 % area is un-managed.
- Nearly 4.4 % area is subjected to moderate to very severe erosion.
- About 78.2 % of the total area is under very deep, 6.0 % area is under deep to very deep, 2.7 % area is under moderately deep to deep, 8.1 % area is under shallow to moderately deep and remaining area i.e. 1.6 % is under very shallow to shallow soils.