

सारांश/ABSTRACT

1. सर्वेक्षित क्षेत्र /
Surveyed Area : 2सी5ए 1 से 9, 2सी5बी 1 से 4 एवं 2सी5 सी 1 से 9 तक निचली यमुना के 2सी5 जलप्रकल्प क्षेत्र के 2सी5ए, 2सी5बी एवं 2सी5सी उप जलप्रकल्प क्षेत्र, उत्तर प्रदेश राज्य के आगरा, इटावा एवं मथुरा जिले और राजस्थान राज्य के अलवर, भरतपुर, दौसा, धौलपुर, जयपुर, करौली, सीकर और सवाईमाधोपुर जिले के सूक्ष्मजलग्रहण क्षेत्रों की प्राथमिकता के लिए त्वरित टोही सर्वेक्षण की सूची/
Inventory of Rapid Reconnaissance Survey for Prioritization of Microwatersheds in 2C5A1 to 9, 2C5B1 to 4 and 2C5C1 to 9 Watersheds of Lower Yamuna (2C5A, 2C5B and 2C5C) Subcatchments of 2C5 Catchment, Districts- Agra, Etawah and Mathura of Uttar Pradesh State and Districts- Alwar, Bharatpur, Dausa, Dholpur, Jaipur, Karauli, Sikar and Sawai Madhopur of Rajasthan State
2. भौगोलिक स्थिति /
Location : 27° 29' 22" to 26° 16' 31" उत्तरी अक्षांश /North Latitude
75°48' 53" to 79° 18' 26" पूर्वी देशान्तर /East Longitude
3. कुल मानचित्र क्षेत्र/
Total Area Surveyed : १८१८०४६ हे./ 1818046 ha
4. सर्वेक्षण के प्रकार/
Kind of Survey : त्वरित टोही सर्वेक्षण /Rapid Reconnaissance Survey
5. सर्वेक्षण की अवधि/
Period of Survey : 2009-10 and 2011-12
6. कृषि जलवायु क्षेत्र/
Agro-Climatic Zone : Upper Gangetic Plains (Zone 5) and Central Plateau and Hills region (Zone 8)
7. प्रयुक्त आधार मानचित्र /
Base Maps : Survey of India Toposheets on 1:50,000 scale
8. जलीयविभाजन/
Hydrological division : 2 क्षेत्र/Region
2C घाटी/Basin
2C5 जलप्रकल्प क्षेत्र/Catchment
2C5A, B and C.... उप जलप्रकल्प क्षेत्र/Subcatchments
2C5A1 जलग्रहण क्षेत्र /Watershed
2C5A1a ... उपजलग्रहण क्षेत्र/ Subwatersheds
2C5A1a1 ... सूक्ष्मजलग्रहण क्षेत्र/ Microwatersheds

9. विभिन्न अफवाह संभावित मानचित्र इकाइयों का क्षेत्रीय विस्तार/

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

क्र.सं./ S. No.	आरपीएमयू/ RPMU	संभावित अपवाह मूल्य/ Runoff Potential Value	क्षेत्र (हे.)/ Area (ha)	क्षेत्र (%)/ Area (%)
1	AE01	61	6059	0.33
2	AE02	67	3461	0.19
3	AE03	70	4208	0.23
4	AL01	55	236574	13.01
5	AL02	56	483844	26.61
6	AL03	57	308073	16.95
7	AL04	58	8342	0.46
8	AL05	56	4975	0.27
9	AL06	60	20397	1.12
10	AL07	57	33671	1.85
11	AL08	58	18248	1.00
12	AL09	58	17090	0.94
13	AL10	68	51723	2.84
14	AL11	62	11471	0.63
15	AL12	68	36921	2.03
16	AL13	75	54546	3.00
17	AL14	62	22277	1.23
18	SS01	55	43525	2.39
19	SS02	57	47492	2.61
20	SS03	60	12393	0.68
21	SS04	65	47383	2.61
22	SS05	61	11470	0.63
23	SS06	56	17607	0.97

क्र.सं./ S. No.	आरपीएमयू/ RPMU	संभावित अपवाह मूल्य/ Runoff Potential Value	क्षेत्र (हे.)/ Area (ha)	क्षेत्र (%)/ Area (%)
24	SS07	67	6993	0.38
25	SS08	68	1357	0.07
26	SS09	64	26870	1.48
27	SS10	62	3998	0.22
28	SS11	70	12015	0.66
29	SS12	62	50909	2.80
30	SS13	75	50591	2.78
31	SS14	79	22354	1.23
32	SS15	67	6948	0.38
33	SS16	69	3738	0.21
34	SS17	84	22204	1.22
35	SS18	88	23570	1.30
36	SS19	79	23289	1.28
37	SW	0	1821	0.10
38	W	0	9911	0.55
39	H	0	27910	1.54
40	River	0	21818	1.20
Grand Total			1818046	100.00

10. मृदा अपरदन/Soil Erosion Hazards:-

EROSION	Area (ha)	Area (%)	UTTAR PRADESH			RAJASTHAN							
			Agra	Etawah	Mathura	Alwar	Bharatpur	Dausa	Dholpur	Jaipur	Karauli	Sikar	Sawai Madhopur
None to slight water erosion	835442	45.95	202607	24	29342	70854	156856	137918	100388	36776	88992	-	11685
Slight to moderate water erosion	365849	20.12	45612	9033	13524	22286	133334	22385	37465	22922	55417	-	3871
Moderate water erosion	103868	5.71	8555	-	2996	9174	11461	1907	19769	4908	44966	-	132
Moderate to severe water erosion	139129	7.65	21652	5207	160	15303	21870	8367	25102	10510	30167	-	791
Severe water erosion	163881	9.01	12776	-	546	23796	16971	18776	19704	15848	53582	-	1882
Severe to very severe water erosion	134689	7.41	11911	5710	-	26848	11899	20348	13176	28416	16119	48	214
Moderate to severe wind erosion	9520	0.52	168	-	-	218	37	1805	-	4202	2980	2	108
Severe to very severe wind erosion	4208	0.23	-	-	-	-	154	329	-	3725	-	-	-
Miscellaneous	61460	3.38	18333	1326	565	2097	10010	9415	6656	5779	6723		556
Grand Total	1818046	100	321614	21300	47133	170576	362592	221250	222260	133086	298946	50	19239

**11. विभिन्न प्राथमिकता वर्ग के अंतर्गत सूक्ष्मजलग्रहण क्षेत्रों का जिले के अनुसार विभाजन/
District Wise Distribution of Microwatersheds under Different Priority Categories**

राज्य/ State	जिला/ District	प्राथमिकता वर्ग/ Priority Category	सूक्ष्मजलग्रहण क्षेत्रों की सं/ No. of Micro watershed	क्षेत्र (हे.)/ Area (ha.)	प्रतिशत/ Percentage	
RAJASTHAN	Dausa	High	248	27006	1.49	
		Low	641	146172	8.04	
		Medium	276	41567	2.29	
		Very High	49	3591	0.20	
		Very Low	17	2914	0.16	
	Total			1231	221250	12.17
	Karauli	High	435	57276	3.15	
		Low	711	118537	6.52	
		Medium	731	101482	5.58	
		Very High	103	18127	1.00	
		Very Low	12	3524	0.19	
	Total			1992	298946	16.44
	Alwar	High	364	36563	2.01	
		Low	236	58870	3.24	
		Medium	202	25699	1.41	
		Very High	392	41548	2.29	
		Very Low	28	7896	0.43	
	Total			1222	170576	9.38
	Bharatpur	High	121	14652	0.81	
		Low	854	193616	10.65	
		Medium	292	38677	2.13	
		Very High	68	10777	0.59	
		Very Low	308	104870	5.77	
	Total			1643	362592	19.94
	Dhaulpur	High	141	19707	1.08	
		Low	627	119173	6.56	
		Medium	532	79441	4.37	
		Very High	17	2219	0.12	
		Very Low	11	1720	0.09	
	Total			1328	222260	12.23
	Jaipur	High	396	36392	2.00	
		Low	186	32298	1.78	
		Medium	300	33908	1.87	
		Very High	304	30488	1.68	
	Total			1186	133086	7.32
	Sawai Madhopur	High	10	657	0.04	
Low		80	14445	0.79		
Medium		27	3136	0.17		
Very Low		4	1001	0.06		
Total			121	19239	1.06	
Sikar	Very High	3	50	0.00		
Total			8726	1427999	78.55	
UTTAR PRADESH	Agra	High	87	12393	0.68	
		Low	761	234919	12.92	
		Medium	323	57205	3.15	

राज्य/ State	जिला/ District	प्राथमिकता वर्ग/ Priority Category	सूक्ष्मजलग्रहण क्षेत्रों की सं/ No. of Micro watershed	क्षेत्र (हे.)/ Area (ha.)	प्रतिशत/ Percentage
		Very High	4	838	0.05
		Very Low	28	16259	0.89
		Total	1203	321614	17.69
	Etawah	High	58	11493	0.63
		Low	1	1	0.00
		Medium	43	9806	0.54
		Total	102	21300	1.17
	Mathura	Low	93	34433	1.89
		Medium	1	27	0.00
		Very Low	28	12673	0.70
		Total	122	47133	2.59
Total			1427	390047	21.45
GRAND TOTAL			10153	1818046	100.00

**12. सूक्ष्म जलग्रहण क्षेत्रों की प्राथमिकता के आधार पर राज्यानुसार विस्तार/
Statewise Status of Priority of Microwatersheds**

राज्य/ State	स्थिति/ Status	प्राथमिकता वर्ग/ Priority Category	सूक्ष्मजलग्रहण क्षेत्रों की सं/ No. of Micro watershed	क्षेत्र (हे.)/ Area (ha)
RAJASTHAN	F	High	253	189889
		Low	834	645953
		Medium	420	313525
		Very High	146	106800
		Very Low	156	118102
		Total	1809	1374269
	P	High	10	2364
		Low	107	37158
		Medium	24	10385
		Very Low	10	3823
	Total	151	53730	
Total		1960	1427999	
UTTAR PRADESH	F	High	24	20662
		Low	208	225824
		Medium	65	59724
		Very High	1	838
		Very Low	18	22366
		Total	316	329414
	P	High	10	3224
		Low	107	43529
		Medium	24	7314
		Very Low	10	6566
	Total	151	60633	
Total		467	390047	
GRAND TOTAL			2427	1818046

Note: **F** = State fully covered under microwatershed
P = State partially covered under microwatershed

13. विभिन्न प्राथमिकता वर्गों के अंतर्गत क्षेत्र का वर्गीकरण/
Distribution of Area under Different Priority Categories

क्र.सं./ S. No.	प्राथमिकता वर्ग/ Priority Category	सूक्ष्मजलग्रहण क्षेत्रों की सं/ No. of Micro watershed	क्षेत्र (हे.)/ Area (ha)	प्रतिशत/ Percentage
1	Very High (above 70)	143	104393	5.74
2	High (66-70)	262	196781	10.82
3	Medium (61-65)	509	385680	21.21
4	Low (56-60)	1178	980335	53.92
5	Very Low (55 & below)	184	150857	8.30
GRAND TOTAL		2276	1818046	100.00

14. मुख्य बिन्दु/Salient Features:

- चित्रण एवं संहिताकरण, उपचार क्षेत्र (मृदा एवं जल संरक्षण उद्देश्यों के लिए) का व्यावहारिक आकार, विशिष्ट क्षेत्रीय सीमा एवं अद्वितीय राष्ट्रीय कोड के क्रम में रखते हुये 'सूक्ष्मजलग्रहण क्षेत्र' स्तर तक किया जाता है /Delineation and codification is done up to microwatershed level in order to have viable size of the treatment area (for soil & water conservation purposes) having distinct spatial extent and unique national code.
- कुल 2276 सूक्ष्मजलग्रहण क्षेत्रों में से, 405 बहुत उच्च और उच्च श्रेणी के अंतर्गत आते हैं/Out of the total 2276 microwatersheds surveyed, 405 falls under very high and high category.
- 143 सूक्ष्मजलग्रहण क्षेत्र बहुत उच्च प्राथमिकता वाले 104393 हेक्टेयर (5.74 %) क्षेत्र के साथ और 196781 हेक्टेयर (10.82 %) क्षेत्र के साथ 51 सूक्ष्मजलग्रहण क्षेत्र उच्च प्राथमिकता वाले श्रेणियों में आते हैं, जिसमें तुरंत समुचित "मृदा एवं जल संरक्षण" के लिए ध्यान देने की आवश्यकता है/143 microwatersheds falls under very high priority with 104393 ha (5.74 %) and 262 microwatersheds with 196781 ha (10.82 %) comes under high priority categories, requires immediate attention for proper soil and water conservation.
- लगभग 298570 हेक्टेयर क्षेत्र (16.42 %) 'गंभीर से बहुत गंभीर' जल अपरदन' उसके बाद 406878 हेक्टेयर क्षेत्र (22.38 %) 'मध्यम से गंभीर जल अपरदन', जबकि 4208 हेक्टेयर क्षेत्र (0.23 %) 'गंभीर से बहुत गंभीर वायु अपरदन' और 9520 हेक्टेयर क्षेत्र (0.52 %) 'मध्यम से गंभीर वायु अपरदन' की श्रेणी के अंतर्गत आता है /About 298570 ha area (16.42 %) is prone for severe to very severe water erosion and 406878 ha (22.38 %) is prone for moderate to severe water erosion hazards while 4208 ha area (0.23 %) is prone for severe to very severe wind erosion and 9520 ha (0.52 %) is prone for moderate to severe wind erosion hazards.

HOW TO USE SOIL SURVEY REPORT

The report embodies the results of Rapid Reconnaissance Survey conducted for identification and delineation of priority microwatersheds of 2C5A1 to 9, 2C5B1 to 4 and 2C5C1 to 9 watersheds of Lower Yamuna FPR (2C5A, 2C5B and 2C5C) Subcatchments falling in three districts of Uttar Pradesh State i.e. Agra, Etawah and Mathura and eight district of Rajasthan state i.e. Alwar, Bharatpur, Dausa, Dholpur, Jaipur, Karauli, Sikar and Sawai Madhopur. Covering an area of 1818046 ha spread over 2276 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 2C5A1a1 etc. where '2' stands for water resource region, '2C' indicates basin, '2C5' for catchment, '2C5A' for subcatchment, '2C5A1' for watershed, '2C5A1a' for subwatershed and '2C5A1a1' 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 district wise 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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