

Report on Prioritization of Microwatersheds of 2B2E1-7 Watersheds in 2B2E (Burhi Gandak) Subcatchment of 2B2 Catchment (Non RVP/FPR) of Lower Ganga Basin, Districts East Champaran and West Champaran of Bihar State.

Abstract

- 1. Surveyed Area** : 2B2E1-7 watersheds of 2B2 Catchment (Ganga Ghughri to Ghaghra River) of Ganga Basin.
- 2. Location** :
 - a) Latitude 25° 27' 5" to 27° 01' 0" N.
 - b) Longitude 84° 09' 0" to 86° 20' 12" E.
- 3. Total Area** : 4,09,176 ha.
- 4. Agroclimatic Region** :
 - (a) Middle Gangetic Plain Region.
 - (b) Soil Conservation zone Indo-Gangetic and Other Alluvial Plain Region (No.3).
- 5. Type of Survey** : Rapid Reconnaissance Survey for Prioritization of Microwatersheds.
- 6. Period of Survey** : December, 2007 to April, 2008
- 7. Base Material used** : Survey of India Topographical maps on 1:50,000 scale.
- 8. Hydrological Sub division** :
 - a) Region – ‘2’ Ganges River System flowing into the Bay of Bengal.
 - b) Basin - ‘2B’ (Ganga Basin)
 - c) Catchment – ‘2B2’
 - d) Sub-Catchment – ‘2B2E’
 - e) Watersheds – ‘2B2E1 to E7
 - f) Subwatersheds – 2B2E1a, 2B2E1b,..... to 2B2E7a, 2B2E7b, ...2B2E7m
 - g) Microwatersheds – 2B2E1a1, 2B2E1a2..... (543 nos.)

9. Extent of Area (in ha) under Different Runoff Potential Mapping Units (RPMU).

Sl. No	RPMU	Runoff Potential Value	Area (ha)	Area %
1	A01	55	2750	0.7
2	A02	63	5565	1.4
3	A03	62	17198	4.2
4	A04	56	13824	3.4
5	A05	59	1736	0.4
6	A06	55	2267	0.6
7	A07	55	39958	9.8
8	A08	56	220993	54.0
9	A09	56	78806	19.3
10	S01	71	21085	5.2
11	S02	63	2005	0.5
	Subtotal		406187	99.3
10	Ri		1825	0.5
11	Ha		276	0.1
12	Rd		674	0.2
13	Ra		214	0.1
	SubTotal		2989	0.7
	Grand Total		409176	100

10. Districtwise Distribution of Area under Different Runoff Potential Mapping Units (RPMU).

RPMU	East Champaran	West Champaran	Total Area	% area
A01	1632	1118	2750	0.7
A02	3213	2352	5565	1.4
A03	7864	9334	17198	4.2
A04	10632	3192	13824	3.4
A05	1243	493	1736	0.4
A06	1587	680	2267	0.6
A07	30041	9917	39958	9.8
A08	164809	56184	220993	54.0
A09	46466	32340	78806	19.3
S01	12785	8300	21085	5.2
S02	1685	320	2005	0.5
Subtotal	281957	124230	406187	99.3
Ri	1350	475	1825	0.5
Ha	161	115	276	0.1
Rd	449	225	674	0.2
Ra	130	84	214	0.1
Subtotal	2090	899	2989	0.7
Grand Total	284047	125129	409176	100

11. Districtwise Distribution of Area (in ha) under Different Soil Erosion Hazard.

Erosion	East Champaran	West Champaran	Total Area (%)
None to slight erosion	256410 (62.7)	103924 (25.4)	360334 (88.1)
Moderate to Severe erosion	25547 (6.2)	20306 (5.0)	45853 (11.2)
Miscellaneous land	2090 (0.5)	899 (0.2)	2989 (0.7)
Total	284047 (69.4)	125129 (30.6)	409176 (100)

12. Priority Categorization

Sl. No.	Priority Category	No. of Microwatersheds	Area (in ha)	Area %
1.	Very high (above 70)	25	12755	3.1
2.	High (66 – 70)	7	4095	1.0
3.	Medium (61-65)	20	12613	3.1
4.	Low (56-60)	484	375567	91.8
5.	Very Low (55 & Below)	7	4146	1.0
	Grand Total	543	409176	100.0

13. Watershedwise Distribution of Area (in ha) under Different Priority Categories.

Sl. No.	Priority Category	Watersheds							Total
		2B2E1	2B2E2	2B2E3	2B2E4	2B2E5	2B2E6	2B2E7	
1	Very high (above 70)	-	-	-	-	-	7830	4925	12755
2	High (66 – 70)	-	-	-	-	1280	985	1830	4095
3	Medium (61-65)	-	-	-	550	2700	5565	3798	12613
4	Low (56-60)	68200	61917	61692	78446	45793	29522	29997	375567
5	Very Low (55 & Below)	-	76	-	-	2220	1390	460	4146
	Total	68200	61993	61692	78996	51993	45292	41010	409176

14. Salient Features of the Area:

- The survey area consists of 543 microwatersheds covering 409176 ha. The survey area has 25 and 7 microwatersheds coming under the category of very high and high priority respectively, covering an area of 16850 ha. Under medium priority only 20 microwatersheds covering 12613 ha have been identified. An area of 375567 ha (91.8%) covered by 484 microwatersheds is coming under low priority category and remaining 7 microwatersheds covering an area of 4146 ha (1.0%) is under very low priority category.
- Moderate to severe eroded lands occupy 45853 ha (11.2%) and it needs proper soil conservation practices. East Champaran district have the maximum area of 25547 ha (6.2 %) under the moderate to severe erosion. The remaining area does not have problem of soil erosion hazard.
- 320884 ha (78.4%) of the total survey area is well managed.

How to Use Soil Survey Report

The report embodies the results of the Priority delineation survey conducted for identification and delineation of priority microwatersheds of 2B2E1-7 watersheds of (Burhi Gandak) subcatchment of Lower Ganga Basin in Bihar. The report explores valuable information about land and soil characteristics of the watersheds. The main objective of the survey is to identify microwatersheds which generate comparatively high runoff towards the lower catchment. Maps showing the demarcation of priority microwatersheds in 2B2E subcatchment in the scale of 1: 50,000 are appended with the report.

The catchments of Centrally Sponsored Scheme are delineated and codified following the codification system of Watershed Atlas of India (WAI) published by Soil & Land Use Survey of India in September, 1990. The surveyed area comprises five watersheds (2B2E1-7) which are subdivided into 79 Subwatersheds and finally into 543 microwatersheds. Subwatersheds are codified by suffixing small case English alphabets with the watershed code e.g. 2B2E1a, 2B2E1b, 2B2E1c etc. and microwatersheds are codified by affixing Arabic numerals with subwatersheds code, 2B2E1a1, 2B2E1b1, 2B2E1c1 etc. Different Runoff Potential Mapping Units (RPMUs) are identified and denoted by capital English alphabets coined from parent material of this area such as 'A' for alluvium. The mapping unit connotes a set of soil and land attributes namely, physiography, slope, soil characteristics, land use/land cover, erosion hazards and conservation practices. The description of mapping units with their Runoff Potential values is presented in Table 6. The differentiating characteristics of each mapping units are furnished in Table 7

The details of computation of Runoff Potential Index are given in Annexure - I which list the microwatersheds in systematic order of codification with relative priority. Microwatersheds with their area under different priority categories are summarized in Annexure-II . In the Annexure-II microwatersheds have been arranged in descending order according to their priority rating i.e. medium, low and very low categories. Watershedwise and Districtwise grading of microwatersheds under different priority categories are presented in Table 19 & 20. In addition to select priority microwatersheds for soil and water conservation programme, the data contained in mapping legend can also be used for characterization of any part of catchment with respect to slope gradient, broad soil groups, present land use, surface condition, erosion and problems as well.

For further clarification and explanation, communication may be made to:

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