ABSTRACT

1. Surveyed Area	**:**	Prioritization of Microwatersheds of Beas Catchment (1B1) of Districts-Amritsar, Firozpur, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala, Tarntaran , Punjab State and Districts- Chamba, Kangra, Una, Himachal Pradesh State.
2. Location	**:**	31°04'16" to 32 °31'27" North Latitudes and 74 °30'38" to 76°08'45" East Longitudes
3. Total Area Surveyed	**:**	10,12,522 ha
4. Kind of Survey	**:**	Rapid Reconnaissance Survey
5. Period of Survey	**:**	January, 2010 to June, 2011
6. Agro climatic zone	**:**	Western Himalayan Region - I & Tans-Ganga Plain Region -VI
7. Base Maps	**:**	Survey of India Toposheets on 1:50,000 scale
8. Hydrological division	**:**	

1	Region
1B	Basin
1B1	Catchment
1B1A	Subcatchments
1B1A1	Watersheds
1B1A1 a, b …	Subwatersheds
1B1A1 a1, 2 …	Microwatersheds

9. Areal Extent of Different Erosion Intensity Mapping Units (EIMUs)

Sl. No.	EIMU	Weightage Value	Delivery Ratio	Area in ha	Percentage
1	**AL01**	14	0.60	32981	3.26%
2	**AL02**	13	0.57	105785	10.45%
3	**AL03**	14	0.57	55055	5.44%
4	**AL04**	12	0.55	484754	47.88%
5	**AL05**	15	0.62	46934	4.64%
6	**AL06**	13	0.56	33790	3.34%
7	**AL07**	14	0.60	16030	1.58%
8	**CG01**	15	0.68	300	0.03%
9	**CG02**	15	0.68	502	0.05%
10	**CG03**	16	0.77	153	0.02%
11	**CG04**	19	0.83	4459	0.44%
12	**CG05**	20	0.91	5463	0.54%
13	**CG06**	22	0.99	477	0.05%
14	**CG07**	16	0.71	432	0.04%
15	**CG08**	19	0.86	408	0.04%
16	**CG09**	16	0.71	5524	0.55%
17	**CG10**	15	0.64	5317	0.53%
18	**CM01**	17	0.74	4268	0.42%
19	**CM02**	18	0.81	10914	1.08%
20	**CM03**	21	0.89	3579	0.35%
21	**CM04**	14	0.65	15716	1.55%
22	**CM05**	16	0.71	21263	2.10%
23	**CM06**	18	0.79	2821	0.28%
24	**CM07**	14	0.63	3660	0.36%
25	**CM08**	14	0.63	4013	0.40%
26	**CM09**	14	0.67	6362	0.63%
27	**CM10**	15	0.68	4760	0.47%
28	**CM11**	14	0.61	34784	3.44%
29	**CM12**	14	0.60	867	0.09%
30	**CM13**	17	0.69	1110	0.11%
31	**CM14**	13	0.58	21058	2.08%
32	**SD01**	15	0.63	272	0.03%
33	**SD02**	16	0.63	191	0.02%
34	**SD03**	18	0.72	312	0.03%
35	**SD04**	18	0.75	7759	0.77%
36	**SD05**	20	0.81	7794	0.77%
37	**SD06**	22	0.93	5432	0.54%
38	**SD07**	17	0.70	4455	0.44%
39	**SD08**	17	0.67	5620	0.56%
40	**SD09**	21	0.82	2710	0.27%
41	**SD10**	15	0.62	467	0.05%
42	**SD11**	15	0.64	5583	0.55%
43	**SD12**	16	0.68	2158	0.21%
44	**SD13**	14	0.60	521	0.05%
45	**HB**	0	0.00	9299	0.92%
46	**RIVER**	0	0.00	26410	2.61%
			Grand Total	**1012522**	**100.00**

10. Soil Erosion Hazards

EROSION	Slight to Moderate erosion	Moderate erosion	Moderate to Severe erosion	Severe erosion	Severe to Very severe erosion	Misc
PUNJAB						
AMRITSAR	81407	10236	2470			1135
FIROZPUR	746	179	100			913
GURDASPUR	95810	31867	27297	155	1181	7697
HOSHIARPUR	103866	53588	26649	111	7295	5214
JALANDHAR	52189	1883				1769
KAPURTHALA	96253	22504	8305			4214
TARNTARAN	174987	40050	10240			3687
HIMACHAL PRADESH						
CHAMBA		16447	6119	408	1939	455
KANGRA	5883	55672	29580	1156	3362	10112
UNA	1444	1795	2398		1242	513
Total Area (ha)	**612585**	**234221**	**113158**	**1830**	**15019**	**35709**
Percentage	***60.5***	***23.13***	***11.18***	***0.18***	***1.48***	***3.53***

11. District wise distribution of Microwatersheds under different priority categories

Districts	Priority Category	Total area (ha)	No. of MWS
PUNJAB			
AMRITSAR		**95248**	**131**
	Very Low	95248	131
FIROZPUR		**1938**	**11**
	Very Low	1938	11
GURDASPUR		**164007**	**233**
	Very High	4479	13
	High	251	1
	Medium	3246	6
	Low	2161	7
	Very Low	153870	206
HOSHIARPUR		**196723**	**355**
	Very High	15200	30
	High	3816	7
	Medium	5508	13
	Low	5688	13
	Very Low	166511	292
JALANDHAR		**55841**	**72**
	Very Low	55841	72
KAPURTHALA		**131276**	**158**
	Very Low	131276	158
TARNTARAN		**228964**	**257**
	Very Low	228964	257

Districts	Priority Category	Total area (ha)	No. of MWS
HIMACHAL PRDESH			
CHAMBA		**25368**	**43**
	Very High	17743	30
	High	824	1
	Medium	4296	6
	Low	2505	6
KANGRA		**105765**	**204**
	Very High	7315	18
	High	5529	9
	Medium	23787	41
	Low	24828	46
	Very Low	44306	90
UNA		**7392**	**21**
	Very High	2799	9
	High	214	1
	Medium	22	1
	Low	1111	4
	Very Low	3246	6
	Grand total	**1012522**	**1485**

12. Distribution of Area under Different Priority Categories

Sl. No.	Priority Category	No. of Microwatersheds	Area in ha	Area Percentage
1	Very High (1300 and above)	81	47536	4.69
2	High (1200-1299)	17	10634	1.05
3	Medium (1100-1199)	59	36859	3.64
4	Low (1000-1099)	60	36293	3.58
5	Very Low (Below 1000)	1009	881200	87.03
	Grand Total	**1226**	**1012522**	**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 1012522 ha area only 58170 ha falls under very high and high category.
- ⇨ 88 microwatersheds falls under very high and high priority which needs immediate attention for proper soil and water conservation.

- ⇨ About 16849 ha area (1.66%) is prone for very severe to severe erosion and 113158 ha (11.18%) is prone for moderate to severe erosion hazards.
- ⇨ Alluvial plain occupies nearly 775329 ha of the total surveyed area.
- ⇨ Very deep soils cover an area of 796387 ha 78.65% 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 Beas Catchment (1B1) districts-Amritsar, Firozpur, Gurdaspur, Hoshiarpur, Jalandhar, Kapurthala and Tarntaran of Punjab State and districts-Chamba, Kangra and Una of Himachal Pradesh State covering an area of 10,12,522 ha spread over 1226 microwatersheds. The priorities are fixed on the basis of Silt Yield Index (SYI). Higher the values of Silt Yield 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 '1B1A1a1' etc. where '1' stands for water resource region, '1B' indicates basin , '1B1' for catchment, '1B1A' for subcatchment, '1B1A1' for watershed,' 1B1A1a' for subwatershed and '1B1A1a 1' for microwatershed. Within each microwatershed, the Erosion Intensity Mapping Units (EIMUs) 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 weightage value and delivery ratio of different microwatersheds have been categorized as very high, high, medium, low and very low priority areas according to silt yeild 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 of these microwatersheds under RVP 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.

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