

*Report on Demarcation of Priority Microwatersheds in Leini and Teju watersheds (FPR) of Centrally Sponsored Scheme, Senapati and Ukhrul Districts of Manipur and Phek, Tuensang and Zunheboto Districts of Nagaland using Remote sensing and GIS*

**ABSTRACT**

1. **Survey Area** : Leini (3D2B3) and Teju (3D2B4) watersheds(FPR) of Centrally Sponsored Scheme, Senapati and Ukhrul Districts of Manipur and Phek, Tuensang and Zunheboto Districts of Nagaland.
2. **Location** : 94° 17' to 94° 45' 30" E Longitude and 25° 5' 30" to 26° 13' N Latitude
3. **Total Area** : 2,18,013, ha
4. **Period of field visit** : November, 2006 to February, 2007
5. **Type of Survey** : Rapid Reconnaissance Survey using Remote Sensing Technique
6. **Base Material** : Survey of India Toposheets (1:50,000) and IRS-P6 LISS-III Precision Geo-coded FCC(4, 3, & 2) Satellite Imagery (1:50,000)
7. **Areal Extent of different Runoff Potential Mapping Units :**

Sl.No.	Runoff Potential Mapping Unit	Delivery Ratio	Area in ha.	Area In %age
1	AC04	57	2614	1.20
2	AC05	58	412	0.19
3	S01	68	1536	0.71
4	S02	62	1816	0.83
5	S03	61	541	0.25
6	S06	77	4131	1.90
7	S07	63	53159	24.38
9	S09	58	58523	26.84
10	S10	85	9424	4.32
11	S11	77	17271	7.92
12	S12	74	11024	5.06
13	S13	68	21762	9.98
14	S15	75	411	0.19
15	S17	63	5188	2.38
16	S18	58	3434	1.58
17	S20	76	7135	3.27
18	S21	66	3178	1.46
19	S22	60	5011	2.30
20	S23	74	2037	0.93
21	S24	62	703	0.32
22	S25	59	2731	1.25
23	S26	69	421	0.19
24	S27	73	1082	0.50
25	S28	65	581	0.27
26	S29	61	508	0.23
27	HA	0	2626	1.20
28	RI	0	754	0.35
<b>Total</b>			<b>2,18,013</b>	<b>100.00</b>

8. Hydrological Divisions

- i. Water Resource Region (3)
- ii. Basin (3D)
- iii. Catchment (3D2)
- iv. Subcatchment (3D2B)
- v. Watersheds (3D2B3, 4)
- vi. Subwatersheds (3D2B3a, b, c,....., 3D2B4a, b, c,.....)
- vii. Microwatersheds (3D2B3a1..., 3D2B4a1...)

9. Soil Erosion Hazard :

Sl. No.	Erosion Class	Area in ha.	Percentage
1	None to slight erosion	11471	5.26
2	Slight to Moderate erosion	61762	28.33
3	Moderate erosion	97952	44.93
4	Moderate to Severe erosion	34024	15.61
5	Severe erosion	9424	4.32
6	Miscl. Land	3380	1.55
<b>Total</b>		<b>2,18,013</b>	<b>100.00</b>

10. Priority Categorization :

Sl. No.	Priority Category	No. of Microwatersheds	Area in ha.	Percentage
1	Very High (70 & above)	41	34,430	15.79
2	High (65-69)	104	93,640	42.95
3	Medium (60-64)	81	76,745	35.20
4	Low (55-59)	14	13,198	6.06
5	Very Low (Below 55)	0	0	0.00
<b>Grand Total</b>		<b>240</b>	<b>2,18,013</b>	<b>100.00</b>

11. State-wise Priority Watersheds:

Priority Category	Total Area	% age	Nagaland					Manipur			
			Phek	Tuensang	Zunheboto	Total	% age	Ukhrul	Senapati	Total	% age
Very High	35011	16.06	1639	1095	12158	14892	10.77	13520	6599	45183	32.44
High	93432	42.9	11718	5713	30818	48249	34.88	29654	15499	12519	8.99
Medium	76372	35.0	45263	1722	16868	63853	46.16	5254	7265	1872	1.34
Low	13198	6.04	10345		981	11326	8.19	1872		79693	57.22
<b>Grand Total</b>	<b>218013</b>	<b>100</b>	<b>68965</b>	<b>8530</b>	<b>60825</b>	<b>138320</b>	<b>100.00</b>	<b>50330</b>	<b>29363</b>	<b>139267</b>	<b>100</b>

12. *Salient Features:*

- *Leini and Teju watersheds of Centrally Sponsored Scheme have been subdivided into 240 microwatersheds following the delineation and codification method outlined in Watershed Atlas of India.*
- *Out of 2,18,013 hectares surveyed area, 35011 ha. (16.06%) have been categorized under very high priority area and 93,432 ha. (42.90%) have been categorized under high priority area.*
- *Shifting cultivation which is the major kind of degradation of the survey area occupies 68279 ha. (31.32%) area. Two types of shifting cultivation i.e. current and abandoned jhum lands are found in the surveyed area which covers 34912 (16.01 %) and 36545 ha. (16.76%) respectively.*
- *Out of 2,18,013 hectares surveyed area, about 34024 ha (15.61%) area is suffering from moderate to severe water erosion and 9424 (4.32%) area is susceptible to severe water erosion.*
- *About 46.23% of the surveyed area is having very steep to extremely steep slope followed by 34.04% area is having steep slope. Most of these lands are under degraded forest.*