

Inventory of Degraded Lands of Puruliya District, West Bengal Using Remote Sensing Techniques

ABSTRACT

1. a Kind of Survey Land degradation mapping
- b Level of Mapping Reconnaissance
- c Scale 1:50,000
2. Period of Survey December, 1995 to April, 1996
3. Base Materials IRS-1B LISS-II False Colour Composite of March and December, 1994 data and Survey of India toposheets in 1:50,000 scale
4. a Total Area of District 6,25,100 ha
- b Agro-Climatic Zone Eastern Plateau and hill (Zone - 7)
- c Geographical extent 22°43' - 23°42' N latitudes and 85°49' - 86°54' E longitudes
5. Nature, extent and percentage of degraded lands in Puruliya district

Mapping Symbol	Description	Area (ha)	Percentage
	Water Erosion		
A1a / *A(O)N	Agriculture, plain, severe to very severe erosion	73442	11.7
A1b / *AN	Agriculture, undulating, severe to very severe erosion	1553	0.2
O1b	Open scrub, undulating, severe to very severe erosion	71186	11.4
O1c	Open scrub, hilly, severe to very severe erosion	4387	0.7
O1e	Open scrub, undulating, 25-50% surface coverage of gullied land	6110	1.0
O1h	Open scrub, undulating, > 50% surface coverage of gullied land	10198	1.6
O1h / O1b	Open scrub, undulating, >50% surface coverage of gullied land and severe to very severe erosion	1555	0.2
O(P)1b	Open scrub changed to plantation, undulating, severe to very severe erosion	1847	0.3
F1a	Forest, plain, severe to very severe erosion	7393	1.2
F1b	Forest, undulating, severe to very severe erosion	5689	0.9
F1c	Forest, hilly, severe to very severe erosion	10779	1.7
F1h	Forest, undulating, > 50% surface coverage of gullied land	1400	0.2
	Sub total	195539	31.3
	Water logging		
A4a	Agriculture, temporary water logging	2008	0.3
	Sub total	2008	0.3
	Other Degraded Areas		
O6c	Open scrub, rock quarries	494	0.1
A6d	Agriculture, brick kilns	278	0.05
O6e	Open scrub, industrial effluents	300	0.05
	Sub total	1072	0.2
	Total Degraded Land	198619	31.8
	Normal Area		
AN	Agriculture, normal land	334296	53.5
FN	Forest, normal land	46529	7.4
O(P)N	Open scrub changed to plantation, normal land	3440	0.6
H	Habitation	29529	4.7
R	River	615	0.1
W	Water bodies	12072	1.9
	Sub total	426481	68.2
	Grand Total	625100	100.0

* Also contain area under agriculture/ open scrub normal land as inclusion

6. Salient Findings

- Out of total geographical area of 625100 ha of Puruliya district, 31.8% area (198619 ha) suffers from land degradation problems. The major problem is of water erosion that accounts 98.5% of the total problematic area of the district. The other degradation problem is waterlogging and rock quarries /brick kilns /industrial effluents that covers 1.0% and 0.5 % respectively of problem area.
- Waterlogging problem exists only in 2008 ha (0.3% of the district) area that too of temporary water logging.
- Remote sensing data possess high potential for mapping and monitoring of degraded lands.
- Change in land use has been noticed from open scrub to plantation in an area of 5287 (0.9%) ha of which 1847 (0.3%) ha is affected by severe to very severe water erosion and 3440 (0.6%) ha is normal land.
- An area of 17708 (2.8%) ha is subjected to gully erosion.
- An area of 1555 (0.2%) ha is subjected to severe to very severe sheet as well as gully erosion
- Severe to very severe water erosion is prevalent in 176276 (28.2%) ha area of which 74995 (12.0%) ha is under agriculture, 23861 (3.8%) ha is under forest, 75573 (12.09%) ha is under open scrub and 1847 (0.3%) ha is under plantation.
- Major part of the district area amounting 426481 (68.2%) ha is normal land of which 334296 (53.5%) ha is agriculture land, 46529 (7.4%) ha is forest land, 3440 (0.6%) ha is open scrub changed to plantation and remaining 42216 (6.7%) ha is under other lands i.e. habitation, water bodies and river.